

(No. 4316.)

"EXCHANGE."

The Merchant Shipping Acts, 1854 to 1887.

In the matter of a formal investigation held at St. George's Hall, Liverpool, on the 2nd and 3rd days of June 1891, before W. J. STEWART, Esq., assisted by Captain CASTLE and Captain FRENCH, into the circumstances attending the material damage sustained by the British steamship "EXCHANGE," of Liverpool, through an explosion which occurred on board the said vessel on 29th April 1891, off Rockabill, St. George's Channel.

Report of Court.

The Court, having carefully inquired into the circumstances attending the above-mentioned shipping casualty, finds, for the reasons stated in the annex hereto, that the material damage above mentioned was occasioned by the explosion of the gas given off from the cargo of coal, which, having accumulated in the hold of the vessel, owing to want of ventilation, found its way into the compartment used for the lamps and boatswain's stores, and was ignited by the lighting of a match struck by the mate.

Dated this third day of June 1891.

(Signed) W. J. STEWART, Judge.

We concur in the above report.

(Signed) JOHN S. CASTLE, } Assessors.
A. P. FRENCH, }*Annex to the Report.*

The "Exchange" is an iron screw steamer, built at Amlwch in 1884, of 291.64 tons gross and 95.01 tons registered, and of 50 horse-power combined. She was registered at Liverpool, and is the property of the Steamship Exchange Company, Limited, Mr. William Thomas being designated the person to whom the management of the vessel is intrusted by and on behalf of the owners. She was commanded by Mr. Alexander Grant, who holds a certificate of competency as second officer, and she had a crew of seven hands all told. The master stated that he had commanded her for about three years, and had previously to this voyage carried from 50 to 55 cargoes of coal annually in the same vessel without any casualty. She had only one hold, at the forward end of which, separated from the hold by a wooden bulkhead and a wooden flooring, a compartment had been formed which was used as a lamp-room and for boatswain's stores. There was no means of ventilation whatever for the hold, except that afforded by a single hatchway 34 ft. by 10 ft. She was loaded at Swansea on April 28th 1891 with a cargo of 265 tons of steam coal from the Birch Grove Colliery. This colliery contains three seams of coal, none of which is considered fiery, and all of which are habitually worked in safety with naked lights. Mr. Robson, inspector of mines for South Wales, stated, however, that one of the seams was, in his opinion, moderately fiery. The cargo supplied to the "Exchange" was taken from all three seams, but in what proportion it did not appear. The bulk of the cargo had only been worked some two or three days before the vessel was loaded. The vessel was bound for Newry, and neither the master nor Mr. Thomas, the ship's manager, appear to have been aware that there was any likelihood of a dangerous accumulation of gas during so short a voyage, although there was no means of ventilating the cargo so long as it was necessary, as it proved to be on this voyage, to keep the hatches battened down. Mr. Thomas had managed the vessel since she was built in 1884, and since that time she had been constantly engaged in carrying coal cargoes without any casualty in the shape of an explosion. There was no evidence to show that either Mr. Thomas or the master had been furnished with or was aware of

the special instructions issued by the Board of Trade with reference to the necessity of providing means of ventilation for coal cargoes. The attention of the Board of Trade officials at Swansea does not appear to have been called to the vessel. The master admitted that he was aware of the instructions with regard to the ventilation of coal cargoes contained in the official log, but stated that he did not consider that they applied to a vessel engaged in the short voyages of the coasting trade.

The "Exchange" left Swansea about 8 p.m. on April 28th, and shortly after leaving that port the hatches were battened down, and remained in that condition until the explosion occurred. Under these circumstances the cargo had no ventilation whatever. All went well until about 7.30 p.m. on April 29th, when the vessel was in St. George's Channel, about 10 miles to the north-east of Rockabill. At that time the mate went to the compartment at the forward end of the hold for the purpose of getting and lighting the lamps. On entering the compartment, which was but dimly lighted by dead lights, he seems to have struck a match. He immediately saw a flame, which was followed by an explosion which knocked him down, rendering him for the moment insensible. When he came to his senses he was able to make his way out of the compartment, but his hands and face were so severely burned that he had eventually to be taken to the hospital at Newry. The noise of the explosion brought the master on deck, who found that the deck forward of the hatchway, the greater portion of the hatches, and the port side of the deck abaft the hatchway had been blown up, causing serious damage to the vessel, and endangering the lives of the crew. The foremast was also gone and the winch displaced. They made for Carlingford Lough with all despatch and reached Warren Point in safety. There the cargo was unloaded, and the vessel having been temporarily repaired, proceeded to Liverpool for permanent repairs.

On the close of the evidence, Mr. Paxton, for the Board of Trade, asked the following questions:—

1. Was provision made, independently of the hatchways, for surface ventilation of the coal cargo of the "Exchange" which would be effectual in all circumstances of weather?
2. Having regard to the means provided for ventilation, was the vessel in a seaworthy condition when she left Swansea?
3. Was the bulkhead and floor dividing the lamp-room from the forehold gas-tight?
4. Did the mate take a light into the lamp-room or strike a match therein?
5. What was the cause of the explosion?
6. Were the manager, the master, and the mate, or any of them, in default in regard to any of the above matters?

And stated that in the opinion of the Board of Trade the certificate of the master should be dealt with.

Mr. George Dickinson, after calling some evidence to show that a large proportion of steamers employed in the coasting trade to carry coal cargoes were not provided with any means of ventilation, independently of the hatchways, then addressed the Court on behalf of the manager and the master, and Mr. Paxton replied.

The Court gave judgment to the effect already stated, and in reply to the questions of the Board of Trade, gave the following answers:—

1. There was no provision for surface ventilation of the coal cargo on board of the "Exchange," independently of the hatchways.
2. The vessel was not in a seaworthy condition when she left Swansea, having regard to the fact that there was no provision for the ventilation of the cargo, independently of the hatchways.
3. The bulkhead and floor dividing the lamp-room from the forehold was not gas-tight.
4. The mate struck a light in the lamp-room.
5. The explosion was caused by the mate striking a light in the lamp-room, and so igniting the gas, which had leaked into the lamp-room from the hold, where it had accumulated owing to the want of ventilation.
6. The Court is of opinion that neither the master nor the mate was in default in regard to any of the above matters.

The Court is of opinion that the managing owner, William Thomas, is to blame for not having made provision for ventilating the cargo, independently of the hatchways, but, having regard to the fact that his attention does not seem to have been directed to the possibility of a dangerous accumulation of gas during so short a voyage, the Court does not order him to pay the costs of the inquiry.

The Court feel bound to point out that the circumstances of this casualty disclose the fact that, even in the case of a cargo of coal taken from seams which are habitually and safely worked with naked lights, there is always a possibility of the accumulation of a dangerous quantity of gas in so short a space of time as 24 hours where no means of ventilation of the cargo are provided. It can never be safe to depend upon the hatchway for the necessary ventilation, for, as in the present case, it is often necessary to keep the hatches on altogether.

The Court are strongly of opinion that no vessel laden with coal can be considered seaworthy, or should be allowed to leave port even for a short coasting voyage, unless means for ventilating the cargo, independently of the hatchway and available in all weathers, are provided.

Mr. Thomas, the manager of the "Exchange," stated that his attention had never been directed to the possibility of an explosion occurring through the want of

ventilation on board of the "Exchange," having regard to the fact that her voyages usually lasted only from 12 to 30 hours; and, no doubt, the fact that she had been engaged in carrying similar cargoes on short voyages for some seven years without any explosion occurring, contributed to strengthen the false notions of security, which he undoubtedly entertained. He stated that independent means of ventilation were now being provided on board the "Exchange," and that he should not have hesitated to have provided them before had he ever thought that there was any risk entailed by their absence.

The Court, while believing in the *bona fides* of this statement, are strongly of opinion that a manager of a vessel engaged in the coal trade ought to be acquainted with the dangers which may follow from the omission to provide proper ventilation, but, under the circumstances, do not feel justified in the present case in ordering Mr. Thomas to contribute to the costs of the inquiry.

(Signed) W. J. STEWART, Judge.

We concur in the above report.

(Signed) JOHN S. CASTLE, } Assessors.
A. P. FRENCH, }

Liverpool, June 1891.