

(No. 6074.)

"COVENTINA" (S.S.).

The Merchant Shipping Act, 1894.

IN the matter of a formal investigation, held at the Moot Hall, Newcastle-upon-Tyne, on the 26th, 27th, and 28th days of July, 1900, before JOHN BEATTIE and THOMAS COOKE, Esquires, two of Her Majesty's Justices of the Peace, acting in and for the City and County of Newcastle-upon-Tyne, assisted by Commander W. F. CABORNE, C.B., R.N.R., and Captain W. H. SINCLAIR LOUITT (Nautical Assessors) and Mr. ALEXANDER GRAY (Engineer Assessor) into the circumstances attending the loss of the British steamship "COVENTINA," of Newcastle, in Porman Bay, Spain, on the 14th day of May, 1900.

*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 loss of the vessel was caused by the parting of the starboard cable under stress of sea and weather, the subsequent bursting of the port branch steam-pipe preventing the engines from being worked with the result that the vessel drifted on shore.

The Court finds the master, officers, and engineers not in default, and that no blame attaches to the superintending engineer.

Dated this 28th day of July, 1900.

JOHN BEATTIE, }  
THOMAS COOKE, } Judges.

We concur in the above Report

W. F. CABORNE, }  
W. H. SINCLAIR LOUITT, } Assessors.  
ALEXANDER GRAY, }

*Annex to Report.*

This was an inquiry into the circumstances attending the loss of the British steamship "Coventina," of Newcastle, and was held at the Moot Hall, Newcastle-upon-Tyne, on the 26th, 27th, and 28th days of July, 1900, before John Beattie and Thomas Cooke, Esquires, assisted by Commander W. F. Caborne, C.B., R.N.R., and Captain W. H. Sinclair Loutit (Nautical Assessors) and Mr. Alexander Gray (Engineer Assessor).

Mr. Burton appeared for the Board of Trade, Mr. Temperley represented the master, while the chief officer, second officer, chief engineer, second engineer, and the superintending engineer appeared in person.

The "Coventina," of Newcastle, official number 83,886, was an iron screw steamship, built at Jarrow, in the year 1880, by Palmer's Shipbuilding and Iron Company, Limited, and was of the following dimensions:—Length, 255·7 ft.; breadth, 34·25 ft., and depth in hold 22·3 ft. She was schooner-rigged, fitted with two inverted direct-acting compound surface-condensing engines of 200 horsepower (combined) also constructed by Palmer's Company in the year 1880. She was of 1,646·54 gross, and 1,031·02 net registered amended tonnage, and owned by Messrs. Henry Cail and Arthur Gregory, both of Cail's Buildings, Newcastle-upon-Tyne, who were appointed managing owners on the 13th April, 1899. She was, on the voyage in question, in good condition, and well found, fitted with life-boats and life-saving appliances in accordance with the Act.

The vessel had two boilers, and from each boiler was a copper steam-pipe leading to the steam dome from which a copper pipe lead to the cylinder. There was a stop-valve on each boiler, and also a stop-valve at the end of the pipe, near the cylinder. The steam from the starboard boiler would, when the port stop-valve was closed, pass from the starboard boiler to the port steam-pipe. This pipe, which eventually burst, was made of sheet copper, two sheets being used.

There was a seam on each side top and bottom as it lay in position, and it had one rectangular bend.

The pipe was 8 ins. in diameter inside, and was 8 or 9 ft. in length. The copper of which it was made was known as No. 6 and No. 5 Birmingham wire-gauge, the thicker gauge being used at the bend, and being a little over  $\frac{1}{16}$  of an inch in thickness.

To join the two sheets of copper the edges were notched every 3 ins. and soldered or brazed, the overlap being about  $\frac{1}{16}$  of an inch. The brazing metal was composed of copper, tin, and zinc, and the pipe was annealed before brazing to bring it to the required shape and strength, it being intended to meet a working pressure of 80 lbs. to the square inch. While at Almeria, in the month of November last, the chief engineer discovered a slight escape of steam from the port branch steam-pipe which he temporarily repaired, and on the 17th of that month sent the following report on the subject from Methil to the superintending engineer:—

S.S. "Coventina," at Methil,

November 17th, 1899.

SIR,

While warming the engines through before leaving Almeria I observed a slight escape of steam from port boiler main steam-pipe. I took off part of the lagging from the pipe and found on examination that a part of the brazing was gone on the underseam of the pipe. I lapped the pipe with wire for about 6 ins. at each side of the leak, also put on two pairs of clams immediately over the leak to hold the wire, and I have had no further trouble with it since we left Almeria, but would like it seen to as soon as we arrive in the Tyne.

Yours truly,

J. GARDNER,

Chief Engineer.

Mr. J. STEWART.

There was no direct evidence to show how long this particular pipe had been in the vessel, but, in all probability, it was the one originally put in when the vessel was built, and there was no reason to doubt its strength and sufficiency.

The "Coventina" arrived in the Tyne on the 28th November, and on the 29th the defective pipe was removed on deck, and the superintending engineer made as careful an examination of it as was then possible, and gave instructions for it to be properly examined and repaired by the Middle Dock Company, South Shields.

The pipe was annealed, and it was then discovered that there were in all five leaks, two in one seam and three in the other. A copper patch was placed over each leak with brazing solder, and the pipe was subsequently subjected to a hydraulic test of 120 lbs. to the square in., and proved to the satisfaction of the superintending engineer, Lloyd's surveyor, and the representative of the Middle Dock Company.

On the 30th of April last the "Coventina" left the Tyne bound for Porman, south coast of Spain, with a cargo of 1,674 tons of coal and coke, and a crew of 26 hands all told, under the command of Mr. William Johnston Wilson who held a certificate of competency as master, No. 22,347. Her draught of water on leaving was 20 ft. aft and 19 ft. forward. There were, in addition to three stream anchors and kedges, two bower anchors with 120 fathoms of cable on each, and a spare bower anchor. They arrived at Porman Bay between 5 and 6 p.m. on 10th May, when, under the direction of the Government Pilot, they moored within about 2 cables of the shore with 45 fathoms on the starboard anchor and 30 on the port.

This was the usual discharging berth and had been occupied by the "Coventina" on several previous occasions while under the command of Captain Wilson. After arrival the fires in the port boiler were drawn in order to effect some repairs, and those in the starboard boiler were banked, and on the 11th they began to discharge the cargo into lighters. On the 13th, when they had discharged about 500 tons bringing her draught to 14 ft. forward and 16 ft. 6 ins. aft, the unloading was stopped owing to the prevalence of a high southerly swell. About 5.30 on the morning of the 14th the chief officer observed that the vessel had taken a round turn in her cables which the night before had been clear. Owing to the pitching they were unable to clear the hawse. About 3 p.m. it came on to blow hard from the south-

ward. The master stated that he did not look upon the swell as an indication of a gale from the southward, such a result not having previously occurred in his experience of the port. They attempted, though unsuccessfully, to get a spring on the starboard cable, and at 3 p.m. the master ordered steam to be got up as rapidly as possible so as to work the engines in case of necessity. The chief engineer immediately set the fires away, and at 4.30 he received orders to put the engines ahead with all despatch. At 4.35 he received the order "stand by," and at 4.40 "slow ahead," the starboard cable having just then parted at the turn. At this time they had full power of steam on the donkey boiler by which they were able to work the engines slowly.

The spare anchor was got out and bent on to the remainder of the starboard cable, and was ready for use about 6 p.m. The engines were worked by the donkey boiler up to 5.10, when the stop-valve of the starboard boiler was opened and steam connected therefrom, and the donkey boiler disconnected. The steam pressure on the main boiler was at this time 65 lbs. It was the master's intention either to slip his port cable and go to sea, or to steam ahead and let go his spare starboard anchor which was now ready for use. However, at 6.10, while the engines were moving at slow speed ahead, the port steam branch pipe burst, and the engines consequently stopped. A few minutes afterwards the ship began to drag her port anchor although the windlass was carefully tended by the carpenter to ease the strain, and falling athwart the sea, she began to strike heavily, and heeling over to starboard was driven on to the beach.

At 6.45, the water being up to the stokehold plates, a rope was got ashore, by which means the crew were landed. Immediately the steam-pipe burst the chief engineer began to make preparations to fix a blank flange, but this was, of course, of no avail, as the ship went ashore in a few minutes.

They telegraphed for assistance, and eventually salvage boats came from Gibraltar, but, though 50 tons of cargo were salvaged, all efforts to save the vessel proved unavailing, and she became a total wreck and was abandoned.

No lives were lost.

The cause of the bursting of the steam-pipe is, in the opinion of the Court, quite clear. As the starboard boiler only was in use, the pipe connected with the port boiler not only formed, as it were, a condenser itself, but provided a receptacle for the condensed water when the stop-valve of the starboard boiler was opened.

As no provision existed for draining this condensed water, the pipe was necessarily subjected to undue pressure, the port stop-valve being closed.

Adequate provision should always be made to ensure pipes being freed from any water which may accumulate in them.

At the conclusion of the evidence the following questions were submitted on behalf of the Board of Trade, Mr. Temperley on behalf of his client, and Mr. Steward, the superintending engineer, addressed the Court, and Mr. Burton replied.

1. What were the defects in the port branch steam-pipe in November last, and was it examined by the superintending engineer to the owners before it was repaired?

2. Was the port branch steam-pipe properly repaired, was it annealed after repairs, and, if not, should it have been annealed?

3. Was the port branch steam-pipe tested by hydraulic pressure after repairs. If so what was the test applied, was the pipe properly examined whilst under the test and thereafter, and was it then in good condition and fit for a safe working pressure of 80 lbs. per square inch?

4. Whether, having regard to the condition of the pipe before repairs in November last, it should, after repairs, have been again used in the vessel?

5. Whether, upon arriving off Porman, the vessel was anchored in a proper position?

6. Whether, on the 14th May last, sufficient cable was paid out on the port and starboard anchors respectively, and were proper means taken to relieve the cables from undue strain?

7. What was the cause of the starboard cable parting?

8. What was the cause of the fracture in the branch steam-pipe, and were prompt and proper measures taken by the engineers to work the engines ahead?

9. What was the cause of the stranding and loss of the vessel?

10. Was the loss of the vessel caused by the wrongful act or default of the master, officers, and engineers, or of any of them, and does blame attach to the superintending engineer?

To which the Court replied as follows:—

1. On the 17th November last the chief engineer reported to the superintending engineer from Methil, where the vessel was then lying, that he had discovered, when at Almeria, a leak in the port branch steam-pipe, due to part of the brazing having gone in the under-seam. He temporarily repaired this, and, on the vessel arriving in the Tyne, the pipe was cursorily examined by the superintending engineer, who ordered it to be annealed preparatory to being properly repaired, when it was discovered that there were five small leaks in the brazing of both seams.

2. The port branch steam-pipe was properly repaired by the Middle Dock Company, South Shields. It was annealed before the repairs were effected, but there was no necessity to repeat that process.

3. The pipe was properly tested by hydraulic pressure up to 120 lbs. to the square inch, in the presence, and to the satisfaction, of the superintending engineer, Lloyd's surveyor, and the representative of the Middle Dock Company. It was then in good condition, and fit for a safe working pressure of 80 lbs. to the square inch.

4. After the pipe had been repaired and tested in the manner already described it was quite fit for use in the vessel.

5. On the arrival of the vessel in Porman Bay, which is particularly open to bad weather from the south, she was moored in the usual discharging berth at a distance of about 2 cables from the beach, under the instructions of the Spanish Authorities, through their pilot.

6. During the night of the 13th and 14th May the vessel, in swinging at her moorings, took a turn in her cables which were of sufficient scope. This was observed between 5 and 6 a.m. on the 14th, but, owing to the heavy swell, it was impracticable to clear it, and they were thus prevented from paying out any cable on either anchor. On the bad weather increasing efforts were made to place a spring on the riding cable, but without success.

7. The primary cause of the starboard cable parting was the heavy sea and force of wind then prevailing. Farther, owing to the turn in the cables, an undue cross-strain would be placed on a particular link thereby increasing the likelihood of its parting. There was no record before the Court as to when these cables were last examined or tested.

8. On the arrival at Porman the port boiler was blown down for repairs, and the starboard boiler was kept under banked fires. In order to move the ship from her dangerous proximity to the beach steam was raised first in the donkey boiler and subsequently in the starboard boiler. The stop-valve on the port boiler being shut, the steam would condense in the dome, and consequently fill the steam pipes with water. As no provision existed for draining this collection of condensed water undue pressure occurred through the water being driven into the port branch pipe by the opening of the starboard stop-valve. This resulted in the pipe bursting though the actual steam pressure at the time was only 70 lbs. to the square inch.

9. The parting of the starboard cable under stress of the heavy sea and southerly gale placed the vessel in an exceedingly perilous position, especially as the port anchor was, owing to its short distance from the shore, of no avail to keep her off. The bursting of the steam-pipe, as already described, prevented the engines from being worked, and the vessel consequently drifted on shore, and became a total wreck.

10. The Court finds that the loss of the vessel was not caused by the wrongful act or default of the master, officers, or engineers, or of any of them, and that no blame attaches to the superintending engineer.

JOHN BEATTIE, } Justices.  
THOMAS COOKE, }

We concur.

W. F. CABORNE, } Assessors.  
W. H. SINCLAIR LOUIT, }  
ALEXANDER GRAY, }

(Issued in London by the Board of Trade on the 24th day of August, 1900.)

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