

(No. 5156.)
"A R N O."

The Merchant Shipping Act, 1894.

In the matter of a formal Investigation held at the Magistrates' Room, Liverpool, on the 13th, 14th, 17th, 18th, and 19th days of June 1895, before W. J. STEWART, Esquire, assisted by Captain CUNINGHAME and Captain WOOD, into the circumstances attending the abandonment of the British sailing ship "ARNO," in latitude 43° 42' N., longitude 45° W., on 31st March 1895.

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 abandonment of the said vessel was due to her dangerous condition brought about by her being thrown on her beam ends, owing to her cargo shifting in bad weather from improper stowage.

Dated this 19th day of June 1895.

(Signed) W. J. STEWART, Judge.

We concur in the above report.

(Signed) ANDW. CUNINGHAME, } Assessors.
A. WOOD, }

Annex to Report.

The "Arno," official number 101,970, is a British sailing ship of the port of London. She was built of steel at Glasgow in 1893. She is 270.7 ft. long, 39 ft. broad, and 22.5 ft. deep. Her registered tonnage is 1,721 tons, and she was owned by Mr. James Nourse, of 3, Fenchurch Avenue, London.

On March 21st 1895, the "Arno" left New York for Liverpool with a cargo of wheat. She was commanded by Mr. Charles Newnham, who holds a certificate of competency as master, numbered 028,915, and she had a crew of 28 hands all told, in addition to whom were the captain's wife and baby and a stowaway. The vessel was prepared for loading, and loaded at New York under the supervision of Captain Vining, a surveyor to the Board of Underwriters of New York, who gave the certificates referred to in the second answer given below. He was appointed by the ship's agents, and as he professed to be, and presumably was, a man of considerable experience in the stowage of such cargoes, while the master had only once, and that when mate, carried a grain cargo, the master felt justified in trusting to his judgment to carry out the rules framed by the said Board, subject to the provisions of the Grain Cargo Act, 1880. He consequently did not interfere with the loading, and only exercised a general and occasional supervision. By far the larger portion of the cargo was wheat in bulk, of which there were about 2,280 tons, the remainder consisting of about 200 tons of wheat in bags, and about 30 tons of clothes pegs. The master had originally intended to carry about 600 tons of cargo in the 'tween decks, but finding that the lower hold would take so much more wheat than he had anticipated, he put eleven 400 gallon tanks in the forehold to fill up the space, but even so he was only able to carry the 200 tons of bags and 30 tons of pegs in the 'tween decks; all the wheat in bulk being in the hold, except 90 to 100 tons which were carried in the feeders. The lower hold of the ship was undivided by bulkheads, and consequently formed one long compartment. Shifting boards were placed fore and aft, along the whole of its length. They were supplied and erected by contractors employed by the ship's agents, and were firm and substantial. Subsequent examination on the vessel's arrival at Liverpool disclosed however some important defects. The beam fillings did not accurately fit the spaces to which they were applied, and were not grain tight. A space of half an inch was left on the sides next to the beams, and at the top a space was left

between the deck and the beam fillings, which varied from 1/4 in. to 1 1/2 ins., and averaged about 1/2 in. As this defect existed throughout the entire length of the hold, a considerable leakage would take place whenever the grain from any cause whatever came to the height of the deck; indeed, one of the witnesses said he had calculated that through these and two or three other apertures which had been carelessly left, as much as 100 tons could pass in an hour with a steady flow. It must, however, be stated that some of these defects, owing to the height of the hold and its darkness, could not have been seen except by close inspection, and neither the master, officers, nor carpenter noticed the defects, while the surveyor, if he noticed them, must have passed them, as he certified that the vessel was properly prepared. This defect, however, would probably not have endangered the ship, but for the fact that the lower hold was not properly filled. The master appears to have ordered the officers to see that the wheat was properly trimmed into the wings and between the beams. But these orders were not very effectively carried out, partly because the officers had to attend to other work and also because the dust arising from the loading was so bad, that the second and third officers were unable to remain any length of time in the hold, and the second officer after half a day's experience of the work was made so ill that he was unable to supervise it again. The surveyor does not appear to have paid much attention to this part of the work, and by the time that the 2,280 tons of wheat were on board, all parties concerned appear to have assumed that the lower hold was filled and the wheat properly trimmed. Subsequent experience during the voyage, and investigations made on arrival at Liverpool, informed the Court that the lower hold must have been 250 tons short of being full, and that, having regard to the difficulty of completely filling it, 200 tons at least might have been put in. It is clear, therefore, that if this had been done the vessel would have been able to carry hardly any cargo in the 'tween decks, as with the cargo she had she was down to her marks; and with all her cargo in the lower hold she would not have been in good trim for an ocean voyage. It is evident that the surveyor in New York made a mistake in attempting to make use of the whole of the lower hold, and he would have acted more properly if he had bulkheaded some portion of it off and taken the precaution of seeing that the cargo space was properly and completely filled. Four feeders of adequate size were provided and properly filled, but though the hold was not filled the feeders do not appear to have acted. They were considerable distances apart, and the hold was probably full up along the middle line of the ship, so that the feeders did not come into play and ought to have been supplemented by wing feeders.

The cargo in the 'tween decks consisted of 200 tons of wheat in bags and 30 tons of clothes pegs. The bags of wheat were placed on either side of fore and aft shifting boards. The bags were, however, not piled up to the deck, but only in four or five tiers, and the boards were only carried a little if anything higher than the bags. The consequence was that the bags could not be tightly and properly stowed, and if the ship lurched there was a risk of them being thrown over the shifting boards.

With her cargo so stowed the "Arno" left New York on March 21st, drawing 20 feet on an even keel. She proceeded all safely till March 28th, when the wind began to blow pretty hard, and by 3 p.m. the vessel was pitching and rolling heavily.

At 5.45 p.m. the vessel, owing most probably to the shifting of the cargo in the lower hold, suddenly took a heavy lurch to port, and then gradually settled down more and more, probably owing to the grain pouring through the leaks in the beam fillings, until the port rail was under water and the yards dipping.

Attempts were made to get the ship before the wind, but they were unable to get her head round. The crew were then sent into the 'tween decks, where it was found that one of the feeders had burst, that a quantity of grain had come up through the main hatch and that the bags had settled over bodily. Four holes were cut in the 'tween deck on the starboard side, when it was found that there was a considerable space all along the wings into which, by the master's orders, all the loose grain on the 'tween

decks was put back. A number of the bags were also carried from port to starboard, and by midnight on Saturday, March 30th, the ship was got almost upright. When the vessel took the lurch to port, two of the lifeboats and the pinnace were lost. Early on the 31st the weather got worse, and between 4 a.m. and 5 a.m. the vessel took a sudden lurch over to starboard and gradually settled down. Two more boats were washed away, leaving only one lifeboat, which was damaged, and the gig. The men were at once set to work to shift the bags back to port, but wearied and exhausted with their previous labours, which had been almost continuous, they were unable to work long, and when soon after noon the s.s. "Normannia" came in sight, the master, after consultation with his officers, determined to leave the vessel, and hoisted signals of distress. The weather was very bad, the vessel was inclined at an angle of 35°, the starboard rail was submerged and the waves washing over the hatches, which the master feared might at any moment be burst open and the ship sink. With difficulty the "Normannia's" boat got to the "Arno," and her crew made fast to a life-buoy floated with a couple of lines from the "Arno." Each of the "Arno's" crew and passengers had to jump overboard with a line attached, and the baby was conveyed in a bag, the rescue being effected without loss of life. The vessel was abandoned about 7.30 p.m. on the 31st, in latitude 43° 42' N. and longitude 45° W.

About daybreak on April 2nd the "Arno" was sighted by those on board the s.s. "Merrimac," bound from New Orleans for Liverpool. She was seen to be on her beam ends, the water washing at times over her decks up to the port rails. The weather was very bad, with a very heavy sea. The mate of the "Merrimac," Mr. Howell Williams, was sent with a boat's crew to board the "Arno." When they got to her they found she had many of her sails in ribbons, and all the starboard braces and the running gear on the starboard side carried away. They got on board with difficulty, and, finding no one on board, they secured the ship's log-book and returned to the "Merrimac." Finding from the logbook that the "Arno's" cargo was grain, the master of the "Merrimac" determined to learn if it was possible to retrim the cargo and to save the vessel. The mate, accordingly, was sent back to the "Arno" with the carpenter, and, having gained access to the 'tween decks, found that the bags had shifted, and some of the shifting boards carried away. The well was sounded, and the ship was found to be making no water. The mate returned with his report, and next day was sent back with ten hands. An attempt was made tow to the "Arno," but it failed owing to the heavy sea, and it was decided that the mate and his ten hands should attempt to navigate the vessel home. The "Merrimac" left them about 8 a.m. on April 4th. The mate, Mr. Howell Williams, had meanwhile set about retrimming the cargo. A large quantity of the bags were carried to port and carefully stowed. Holes were cut in the 'tween decks on the port side, and many of the bags were cut and their contents poured into the lower hold till it was nearly filled, and by the time that the vessel approached the Irish Coast she had only 2° or 3° of a list. Very bad weather was encountered during part of the time, but the cargo did not shift, and on April 23rd the vessel was brought to anchor in Cardigan Bay, whence she was towed to Liverpool, arriving on April 25th after an anxious and difficult voyage on the part of her salvors, who ran considerable risk and endured great hardships, which were brought to a successful issue by the energy, ability, and resource of Mr. Howell Williams. The carpenter, one of the prize crew, unfortunately succumbed to the effects of the exposure and strain.

At the conclusion of the evidence, Mr. Paxton, for the Board of Trade, submitted the following questions for the opinion of the Court:—

1. Did the agents of the ship engage a surveyor to the Board of Underwriters of New York to superintend the loading of the grain cargo?
2. Were certificates issued by the said Board of Underwriters to the effect—
 - (1) That the "Arno" was passed to load grain, and that her hold had been prepared in accordance with their rules?
 - (2) That the vessel had completed her loading under the inspection of the said Board of Underwriters, and had conformed to all the rules of the said Board of Underwriters in relation thereto?

3. Were the lower hold and 'tween decks of the "Arno" prepared in accordance with the rules of the said Board of Underwriters, as modified by the conditions mentioned in the second schedule to the order of the Board of Trade adopting such rules under section 5 of the Carriage of Grain Act, 1880, and particularly—

- (1) Were shifting boards constructed and fitted in the 'tween decks in accordance with Rule 5?
- (2) Were shifting boards with well-fitted shutters or beam fillings constructed and fitted in the lower hold, as required by Rule 12?
- (3) Were Rules 7, 9, 10 and 11 complied with?
- (4) Under the circumstances, ought strakes of the 'tween decks to have been lifted in the wings under Rule 15?

4. Was the vessel loaded and the grain cargo stowed and trimmed in accordance with the said rules modified as aforesaid, and particularly—

- (1) Were the bags in the 'tween decks stowed in accordance with Rule 6?
- (2) Was the lower hold filled to the deck? If so, was it well trimmed up between the beams and wings, and the space between the beams and wings completely filled in compliance with Rule 15?

If not, was enough space left to stow sufficient cargo over it to properly secure it in compliance with Rule 15?

- (3) Having regard to the quantity of bulk grain in the lower hold, was it properly supplied with feeders or secured by bags of grain or other cargo, as required by section 3 of the 2nd schedule to the said order?

5. Were all necessary and reasonable precautions (whether prescribed by the said rules or not) taken to prevent the grain cargo from shifting?

6. Was it the duty of the master to make himself acquainted with such rules modified as aforesaid, and to see that such rules were complied with, and that all necessary and reasonable precautions were taken to prevent the grain cargo from shifting, and, if so, did he perform such duty?

7. Were the officers, or either of them, instructed to see that the cargo was properly stowed and trimmed, and, if so, did they perform such duty?

8. When the vessel left New York was she in good and seaworthy condition, and had she, as laden, sufficient stability?

9. What was the cause of the cargo shifting and the vessel taking a heavy list to port on the 28th March, and were proper measures taken to get her upright and to prevent the cargo from shifting?

10. What was the cause of the cargo shifting and the vessel taking a heavy list to starboard, and were proper measures taken to get her upright?

11. Was the vessel prematurely abandoned?

12. Were the master and officers, or either of them, in default in regard to any of the above matters?

Mr. Cameron having addressed the Court on behalf of the master, and Mr. Paxton having replied, the Court gave judgment as above, and returned the following answers to the questions of the Board of Trade:—

1. A surveyor to the Board of Underwriters of New York was engaged by the agents of the ship to superintend the loading of the grain cargo.

2. Certificates were issued by a surveyor to the said Board of Underwriters to the effect—

- (1) That the "Arno" was passed to load grain, and that her hold had been prepared in accordance with their rules.
- (2) That the vessel had completed her loading under the inspection of the said Board of Underwriters, and had conformed to all the rules of the said Board of Underwriters in relation thereto.

3. The lower hold and the 'tween decks of the "Arno" were not prepared in accordance with the rules of the said Board of Underwriters, as modified by the conditions mentioned in the second schedule to the order of the Board of Trade adopting such rules under section 5 of the Carriage of Grain Act, 1880, and particularly—

- (1) Shifting boards were not constructed and fitted in the 'tween decks in accordance with Rule 5.
- (2) Rule 12 was not complied with, inasmuch as the beam fillings were not fitted so as to be grain tight, nor were shifting boards fitted in the space between the mainmast and the pumpwell.

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- (3) With regard to Rule 7, beyond dividing the lower hold into two compartments by the longitudinal shifting boards, no bins were constructed in the ship. There is not sufficient evidence before the Court to show whether Rule 9 was complied with or not. Rule 10 does not apply, in so far as there was no bulkshead specially erected before or abaft the cargo. There is no evidence before the Court to enable it to say whether Rule 11 was complied with or not.
- (4) Under the circumstances, wing feeders should have been constructed.
4. The vessel was not loaded, and the grain cargo was not stowed and trimmed, in accordance with the said rules modified as aforesaid, and particularly—
- (1) The bags in the 'tween decks were not stowed in accordance with Rule 6.
- (2) The lower hold was not filled to the deck. Enough space was not left to stow sufficient cargo over it to properly secure it in compliance with Rule 15.
- (3) Having regard to the quantity of bulk grain in the lower hold, it was not properly supplied with feeders, nor secured by bags of grain or other cargo, as required by section 3 of the 2nd schedule to the said order.
5. All necessary and reasonable precautions were not taken to prevent the grain cargo from shifting.
6. It was the duty of the master to make himself acquainted with such rules modified as aforesaid, and to see that such rules were complied with, and that all necessary and reasonable precautions were taken to prevent the grain cargo from shifting. The vessel having been loaded under the supervision of an authorised surveyor to the Board of Underwriters of New York, the master accepted the construction put upon those rules by the surveyor, and in the circumstances the Court is not disposed to blame the master for so doing.

7. Instructions appear to have been given to the officers to see that the cargo was properly stowed and trimmed, but none of them had any experience of a cargo loaded under similar conditions, and were unable therefore to exercise that effective control which in other circumstances they might have done.

8. When the vessel left New York she was in a good and seaworthy condition as regards her hull and equipments, but, having regard to the improper stowage of her cargo, she was not in a seaworthy condition.

9. The cargo shifted on the 28th of March, and the vessel was thrown on her beam ends to port owing to her meeting with bad weather and the cargo not being properly stowed. Proper measures were taken to get her upright, and as far as possible to prevent the cargo from shifting.

10. The vessel had been brought nearly upright by midnight on Saturday, and between 4 a.m. and 5 a.m. on Sunday, 31st March, the vessel was thrown on her beam ends to starboard through the continuance of bad weather and the shifting of the cargo, owing to its improper stowage at New York. Proper measures were taken to bring her upright again, but owing to the exhausted state of the crew these measures were unavailing.

11. The vessel was not prematurely abandoned.

12. Neither the master nor officers are in default in regard to any of the above matters.

(Signed) W. J. STEWART, Judge.

We concur in the above report.

(Signed) ANDW. CUNINGHAME, } Assessors.
A. WOOD, }

Liverpool, June 20th 1895.

Issued in London by the Board of Trade on the 27th day of June 1895.