

(No. 1186.)

“ SOLWAY ” (S.S.)

The Merchant Shipping Acts, 1854 to 1876.

In the matter of a formal investigation held at Glasgow, on the 13th, 14th, and 15th days of December 1881, before WILLIAM MILLAR and EDWARD JOHN SCOTT, Esquires, two of Her Majesty's Justices of the Peace for Lanarkshire, assisted by Admiral GRANT, C.B., and Captains FORSTER and PARISH, R.N.R., as Nautical Assessors, into the circumstances attending the material damage sustained by the British steamship “ SOLWAY,” of Glasgow, through a fire which occurred on board the said vessel, about 25 miles E. by S. of Rockabill Lighthouse, on or about the 16th day of November instant, whereby loss of life ensued.

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 when the vessel left Glasgow she was in good and seaworthy condition; that the steam steering apparatus was in good and proper condition, but the Court is of opinion that there would be less probability of accident by anything jamming under the quadrant if it was placed higher, and provision made to prevent the possibility of the chains getting off the quadrant; that the steering gear was of such a nature that it was at all times efficient, and that the spare or hand steering gear could be promptly and readily made use of; that the tightening screws were examined by the makers immediately before leaving Glasgow on the voyage in question, and the preponderating evidence goes to shew that there was no flaw in the screw which broke; that the openings in the bulwarks along the deck were sufficient, and properly constructed for the vessel and her trade; that the master was aware of the inflammable nature of his deck cargo; that the fires were not in any way protected from contact with the oil or naphtha; that from the evidence the casks appear to have been in good, proper, and tight condition, and although placed and secured in the usual way, the Court is of opinion that the method hitherto adopted is not a safe one of securing casks containing liquid of such a dangerous and inflammable nature; that, whether it is advisable or not to stow such casks upon their heads, the evidence before the Court does not shew, but the assessors advise the Court that, in their opinion, it is undesirable to do so; that after leaving Belfast measures were taken to place extra lashings round the casks; that the Court, notwithstanding the conflicting evidence, is of opinion that the cause of the steam steering gear refusing to act was in consequence of the chain getting off the corner of the quadrant, and the tightening screw coming across the arm of the quadrant caused the screw to bend and break; that the hand gear was readily and promptly applied, but rendered inoperative by the bight of the chain jamming between the quadrant and the deck; that the cause of the deck cargo breaking adrift and bursting was due to the ship rolling and lurching very heavily and shipping heavy seas, while the rudder was disabled, the lashings having given way; that no effective measures were possible to prevent the oil getting into the steerage after the casks had burst; that every possible effort was made to save the lives of the passengers in the steerage; that the starboard quarter boat was safely lowered, but went adrift before a rope could be got into her; that every possible effort was made thereafter to save life and to extinguish the fire; that the vessel was navigated with proper and seaman-like care; that neither the master nor the mate are in default; on the contrary, the Court desires to express its opinion of the admirable manner in which they performed their duties under the very trying circum-

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stances in which they were placed; and that no blame whatever attaches to the owners for this casualty.

The Court makes no order as to costs.

Dated at Glasgow the 15th day of December 1881.

(Signed) WILLIAM MILLAR, J.P.
E. J. SCOTT, J.P.

We concur in the above report.

(Signed) HENRY D. GRANT.
GEORGE H. FORSTER.
ALFRED PARISH, R.N.R.

Annex to the Report.

The “ Solway,” official number 85,860, is an iron screw steamship of 783·31 gross and 413·61 net registered tonnage. She was built by Messrs. Barclay, Curle & Co., at Whiteinch, near Glasgow, being launched in September of the present year, and delivered on the 25th October to the firm Mr. William Sloan, and others, of Glasgow, to whose order she was built, Mr. William Sloan being the registered managing owner. She was commanded by Mr. William Fry, holding a master's certificate of competency, Home Trade, No. 100,329.

The “ Solway” is 220·2 feet long, 30 feet beam, and 15·2 depth of hold, having two decks, a poop 136 feet in length, and a top-gallant fore-castle. Under the fore end of the poop is a cabin for steerage passengers, having iron bulkheads lined with teak, and separated by an alleyway 4 feet wide from the officer's cabin on port side. This cabin had two doorways, the one in use opening into the alleyway, the other door in the after bulkhead opening into the after part of main deck under the poop deck which was secured by bolts on the inside. There was a small stove with a little open grate and a deep ashpan in the cabin with a fire in it, and the galley fire just abaft was also alight. All the space abaft this on both sides of the engine-room casing is clear and available for deck cargo. In the well or space between the fore-castle and poop the bulwarks are fitted with double rows of strong iron rods horizontally and securely rivetted to the ship's side as bullock rails. She has 5 watertight bulkheads, and two ballast tanks.

She is fitted with two compound surface condensing engines of 160 horses power combined, and has Bow, McLachlan, and Co., steam steering gear amidships, being a pair of 6 inch cylinders with the usual gearing, and connected with the quadrant tiller by about 40 feet of $\frac{1}{2}$ -inch chain, then rods, and again about 30 feet of chain leading through a gipsy pulley, and secured to a welded-on stud on the quadrant by a tightening screw on each side.

In addition to the steam steering gear there was a very good fitting, so that by means of a lever the hand gear can be brought into use very readily. She appears to have been previous to the casualty a well built and well found ship. She had accommodation for 125 deck passengers, 25 in fore cabin, and 34 in the saloon, for which she holds the passenger certificate. She had two lifeboats and two quarter boats.

The “ Solway” left Glasgow, under the command of Mr. William Fry, on the 14th November, bound for Greenock, Belfast, and Bristol, with a crew of 20 hands all told, twelve steerage passengers, and cargo consisting of about 200 tons of general goods, including 145 casks of paraffin oil stowed in the fore lower hold, and 11 casks paraffin on the main deck before the poop. On arriving at Greenock she shipped 24 barrels of naphtha, which were stowed with the other casks before the poop, the remainder of the goods received there being stowed in the hold.

Thence she proceeded to Belfast, arriving about noon of the 15th; landed some empties, and receiving about 82 tons of general cargo, making a total of 521 tons, for Bristol, and three soldiers were also embarked as steerage passengers.

The vessel left Belfast about 4 p.m. of the 15th, the wind at the time being a fresh breeze from S.W. The deck cargo, consisting of the 11 casks of oil shipped in Glasgow, and 24 casks of naphtha shipped at Greenock, was stowed in two tiers on either side of the deck, casks on their heads, and secured by a single rope

passing fore and aft the lot, above and below the bilges of the casks and frapped between every two or four casks to the bullock rails. After leaving Belfast, as the wind increased and sea became heavy, the mate further secured the deck cargo by using the fore derrick guys, which were of wire rope, as a fore and aft preventive lashing, frapping it to the bullock rails with the ends of the guy tackles.

All went well until 4.45 a.m. of the 16th, the vessel at that time being about 25 miles E. by S. of Rockabill Lighthouse, when the mate informed the master, who was in his deck cabin, the steam steering gear had given way. The master took immediate steps to get the hand gear into use, and found that the tightening screw on the port side had broken, and the chain was off the quadrant, and the bight had jammed underneath it, effectually locking the rudder. While the master and some of the crew were employed in clearing the chain, the ship fell off into the trough of the sea and laboured heavily. The mate reported that there was a strong smell of naphtha, and the Court were informed by William Fuller, A.B., that when he went forward to call the hands, he saw two of the foremost casks on the starboard side adrift, and immediately after he saw the whole number adrift; he ran aft, and while going he heard a slight explosion, and the ship was in flames immediately, caused probably by the naphtha floating on the water, which she was shipping in large quantities, coming into contact with either the fire in the stove in the cabin or the galley fire.

The master endeavoured to get forward to the passengers, but the fire had complete mastery of the well deck and alley way, one passenger only escaping aft enveloped in flames, and he was attended to, but died in Kingstown Hospital.

The engine-room and galley doors were closed, thus preventing the engine-room staff from leaving, and it was not till two hours after that the smoke cleared away and they were able to come on deck. Steam was then got up and she proceeded.

As some of the crew were still on the fore-castle the master kept the ship broadside on to wind and sea, and cleared away the gangways to allow the sea full force over the deck, and to get at the fire which was burning between decks, as well as on deck, the flames reaching as high as the masthead, which burnt through the fore-mast, and caused it to go over the side, and the hatch-way tarpaulins and gratings were burnt. The master ordered the boats to be got ready. The second mate, three of the crew, and one passenger got into the starboard quarter boat, and as soon as she was clear of the rails she surged about so violently that she was lowered down altogether, and then it was found that she had no warp in her, and before one could be got the boat drifted from the ship, and was subsequently picked up at Castleton, Isle of Man. There have been, however, no tidings of the crew, which are supposed to have been lost in the heavy gale which occurred that night.

About 1 p.m. there was a very heavy rain storm which assisted very much in reducing the fire. The steam pump was started in the course of the afternoon, and at 7 p.m. they sighted Rockabill Lighthouse; and about 9 p.m. got into Dublin Bay and took a pilot, by whom she was taken into Kingstown Harbour, put aground, and, with the assistance of the coastguard and men of H.M.S. "Penelope," the fire was extinguished.

The sad loss of life due to this casualty was altogether nineteen persons, *i.e.*, by fire, thirteen burnt on board the ship, one dying in Kingstown Hospital from his injuries, besides four of the crew and one passenger in the boat which are missing.

These being the facts of the case, Mr. Douglas, for the Board of Trade, asked the opinion of the Court on the following questions, and stated that in the opinion of the Board of Trade the certificates of the master and mate should be dealt with:—

Whether when the vessel left Glasgow she was in good and seaworthy condition?

Whether the steam steering apparatus was in good and proper condition?

Whether the steering gear fitted to the "Solway" was of such a nature that it was at all times efficient; and whether the spare steering gear was fitted so that in the event of the steam steering gear failing it could be promptly and readily made use of?

When did the owners last examine, or caused to be examined, the screw, and how did it happen that the flaw (if any) was not then discovered?

Whether the openings in the bulwarks along the deck were sufficient and properly constructed, so as to allow

the water shipped on deck to escape in the shortest possible time?

Whether the master was aware of the inflammable nature of his deck cargo, and whether the fires on board the ship were properly and efficiently protected from any possible contact with the oil or naphtha?

Whether the deck cargo taken on board at Glasgow and Greenock was, as regards the casks, in good, proper, and tight condition, and were all properly and efficiently placed and secured?

Whether it is advisable to stow casks containing dangerous and inflammable oil, &c., on their heads?

Whether on or about the 15th November, after leaving Belfast, when the wind increased to a gale, proper measures were taken to place extra lashings and to see that the deck cargo was thoroughly secured?

What was the cause of the steam steering gear refusing to act on the morning of the 16th November, and whether the spare steering gear was readily and promptly applied?

What was the cause of the deck cargo breaking adrift and bursting, and whether when it was found that the casks had burst prompt and proper measures were taken to prevent the oil getting into the steerage, the engine-room, and galley?

Whether every possible effort was made that could be made to save the lives of the passengers in the steerage?

Whether the starboard quarter boat was lowered in a proper and seamanlike manner, and what was the cause of its breaking adrift?

Whether every possible effort was made thereafter to save life?

Whether every possible effort was made to extinguish the fire?

Whether the vessel was navigated with proper and seamanlike care? And

Whether the master and mate are, or either of them is, in default, and whether blame attaches to the owner?

These questions are answered in the Report.

Mr. Spens, who appeared for the owners, having addressed the Court on behalf of the master as well as the owners, the Court adjourned to decide upon the questions submitted by Mr. Douglas.

The Solicitor for the Board of Trade after detailing the facts of the case, in his opening remarks on the first day of the sitting, suggested the desirability of the Court inspecting the "Solway," which they did, every explanation needed be readily given by the owner, builder, and master.

It appeared from the evidence that the "Solway" was a well built vessel, her specifications being in excess of Lloyd's rules, and every care seems to have been bestowed on her equipment, and when she left Glasgow she was in all respects in a good and seaworthy condition. In the narrative the steering gear, both steam and hand, has already been described, and the Court were satisfied that every care and attention was exercised to keep it in working order, and at the time of the casualty there was no difficulty in promptly applying the hand gear, but unfortunately, through the bight of the chain jamming between the quadrant and the deck, it could not be worked until that was cleared, which appears to have occupied a considerable time.

Evidence was led to some length as to the lead of these chains and the mode of attachment to the quadrant, as well as to the strength of the screws and chains. There is no doubt but that the starboard chain had not a fair lead, though that was partially obviated by a bend in the shoulder of the lug nearest to the tiller head, yet the one on the port side, where the screw broke was nearly, if not quite, a fair lead, the Court could not therefore consider that the breaking of the screw was due to a bad lead. The tightening screw which broke had been examined before the "Solway" left Glasgow on that voyage, and no flaw was then perceptible, and the evidence decidedly preponderated against the existence of any defect in the screw. The Court found some difficulty in coming to a conclusion as to the cause of the fracture of the screw. It broke close off to the shoulder of the female screw, and had a very perceptible bend at that point, as if it had been broken over something. They were satisfied that it would not take much jerking to throw the chain off the quadrant, and if this occurred, the screw would get under the arm and be subjected to a breaking strain, which is what the Court believe to have actually happened, and caused the break. The chain thus freed from the quadrant jammed, as already described, and on careful consideration of this portion of the steering gear the Court were of opinion that it would be an improvement

if the quadrant was raised higher and some provision made to ensure that the chain could never be thrown off the corner of quadrant. As to the openings in the bulwarks, the well had the usual scuppers, two large mooring pipes, and two ash-shoot ports under the poop, to which the water had access through the alleyway, and two gangways which could be readily unbolted, which the Court deemed sufficient considering the trade she was employed in.

The master stated that he was aware of the dangerous and inflammable nature of his cargo, but did not seem to have thought that any special precautions were necessary as to the fires in the galley and steerage. The Court, while aware that these inflammable goods have been carried in this way for a lengthened period with immunity, desire to express strongly their opinion that when such goods are carried there should be special precautions against fire, and the steerage and galley fires in this case were in dangerous proximity to the cargo. The paraffin and naphtha casks appear to have been in good condition when shipped, but the Court were of opinion that, considering the description of the casks used for these liquids, which are usually of light construction, and adopting the advice of the Assessors, they did not approve of their being stowed on their heads, exposing their weakest part to the force of the sea falling on them, and a greater liability to float out or work free from their lashings. They also consider it would have been better had each cask been separately lashed instead of the lashing being passed round the whole lot. The Court desire more particularly to draw attention to this, as it was through this imperfect stowage the casualty, in their opinion, was the more directly attributable. At the same time they cannot blame the officers of the ship for following the practice which they believed, from the absence of accident hitherto, to have been a good one. The mate, however, appears to have exercised some forethought and care in putting wire guys round the casks at midnight of the 15th; still they believe it would have been possible to have secured the casks in such a way as would have enabled them to have been carried in safety notwith-

standing the vessel fell off into the trough of the sea, which is liable to happen on any voyage. It must, however, be stated to the credit of the officers of the ship that when the accident did happen they appeared to have acted promptly in adopting such measures as were practicable; but the sudden and overwhelming nature of the fire prevented anything being done to save the lives of the steerage passengers. As to the loss of the starboard quarter boat and her crew, she was lowered and disengaged from her tackles safely, notwithstanding the heavy sea running, but no rope being immediately available as a tow rope she drifted from the ship; and the Court did not consider that the loss of life either by this boat or through the fire was caused by any neglect on the part of any one in the ship. Both in the efforts to extinguish the fire and the seamanlike way in which the ship was hauled and ultimately brought into port and beached, the Court were of opinion that the master, officers, and crew deserve the highest commendation for their exertions.

The Court would observe that in the course of this inquiry it transpired that, while there was no lack of appliances for extinguishing fire, there was an absence of regulations or instructions for the crew in the event of a fire; and the Court consider it would be well in passenger steamers if there were some simple regulations known to the crew as to their duties in the case of fire.

In conclusion, the Court feels it their duty to express their strong opinion that, considering the liability to fire which must always exist by carrying inflammable oils on the deck of a steamer, the vessels which follow this practice should not hold a passenger certificate.

(Signed) WILLIAM MILLAR, J.P.
E. J. SCOTT, J.P.

We concur in the above report.

(Signed) HENRY D. GRANT.
GEORGE H. FORSTER.
ALFRED PARISH, R.N.R.