

2

S. S. "Hartley" Inquiry.
2nd day's evidence

Witness:- Mr Cairns, Shipyard Manager, Messrs Smith's Dock.

The approximate cost of locking bars is £10 per bar.

The question of fitting locking bars to the 'Hartley' was discussed when the general question of securing the hatches was under consideration but the Owners required manilla rope lashings because they were considered to be efficient, easily handled and not liable to damage tarpaulins.

Regarding sheathing of steel locking bars with wood this is not likely to be advantageous because in handling the wood would be liable to splinter, and then to damage the tarpaulins.

Apart from the question of portability Mr Cairns saw no advantage or disadvantage of ~~double~~ ^{single} covers over double. The single hatch was somewhat of a new departure, but the Owners specified it. He could not say if single hatches were more liable to damage.

The pumping plan was then discussed.

Mr Cairns was then questioned by a solicitor representing the family of which one brother was master of the 'Hartley' and was lost, and another chief officer of the 'John Harrison', also lost.

"Wide hatches were only of use for cargo that can be poured in"? — Answer:- Yes, principally.

"Are hatch covers used as staging in the holds?"

Answer:- I am not aware that they are.

"Would you consider steel hatches stronger than wood"? — No.

"Lashings serve the double purpose of keeping down the tarpaulins and the hatch covers"? — Yes.

"Is there any objection to steel covers"? — They

are heavy to handle, special arrangements are necessary such as booms and heavier winches. These are objections from the builder's point of view.

"Have you ever known a case of the hatch distorting and the covers dropping in? No.

Examination by Owner's solicitor.

"According to a report circulated by the Board of Trade in April 1924 cleats at an angle are considered more efficient?—That is so

The 'Hartley' was fitted with wood wedges for battenning down, 8 in long and the cleats were 6 in.

It is essential that the tarpaulin should be properly stretched, and from that standpoint too heavy a tarpaulin is not advantageous.

There was no point in fitting locking bars if it was impracticable to use them daily aboard ship. In his (Mr Cairns) opinion High locking bars, say of \perp section were not efficient because with a lashing sea these bars offer great resistance and the fastenings at the ends are ruptured. Flat bars should be strong enough, but it has the disadvantage of rubbing the tarpaulin. Thus in practice many owners prefer rope lashings.

"Did Lloyd's surveyor see the hatches in place and properly battened down before the vessel left?—Mr Cairns—Yes.

"It is quite probable that an inrush of water in No 3 hatch caused No 4 to blow out?—Yes.

"Can Wood hatch covers warp?—Yes.

"Can they warp sufficiently to cause friction with the tarpaulin and wear through?—I should scarcely think so.

"Would broad hatches warp more than narrow ones?—I think not.

"Concerning the 20° list mentioned what would that mean?—Using a permeability of 30 and assuming the starboard side of No 3 & 4 holds full up to the

top of the tunnel there would be 120 tons of water in the ship and the vessel would have a list of 12° . The deck would be underwater especially as the vessel was down by the stern. It was therefore probable that the list was much less.

Questions to Mr. Cairns by Mr. Carmichael.

"Is this sectional profile now put in that approved by Lloyd's Register for the 'Hartley'?— No, but it is the plan as modified by Lloyd's for a sister vessel the 'Hamsterley'.

"What is the advantage of having the hatches higher than the bulwark?— It raises the hatches higher above the water.

"Is not the bulwark a protection? In this case the hatch battening arrangements are exposed. Can the wedges be washed out?— When the vessel is rolling the lashings are often exposed.

"With a continuous trunk the water is confined. In requesting Lloyd's to give the freeing port area would you take into account the fact that water can only get out at one side? The freeing port area is a fixed percentage of the bulwark area.

"Are the freeing ports shown in excess of the Rule?— No.

"What extra freeboard did the trunk give?— None. The trunk was fitted to give increased capacity.

"When a hold is full ~~of~~ of coal what is the percentage of loose space?— Figures published give 30%.

"Is this the same for all coal?— No.

"Were the size of hatches and all webs approved by Lloyd's?— Yes.

"So, from the constructional point of view you scarcely feel you stand alone in this matter?— That is so.

"You more than carried out Lloyd's requirements?— Yes.

"I notice the beams are cranked between Nos 3+4 hatches and not carried across at the deck level. Do you think this, as approved by Lloyd's, is the best?— I do.

"If the hatch sides were deflected would not this take away from the strength in way of the raised deck between Nos 3 and 4 hatches?" — I do not think so.

"If through beams had been fitted, then if the hatch sides had been knocked in, the strength would have been maintained?" — That is so.

"Do you notice that between the Poop and Forecastle, on the weather deck, there are only 6 through beams?" — That is so.

"Would there be any disadvantage in fitting through beams in way of the raised decks?" — There would be loss of carrying capacity.

Witness:- Foreman for charterers and shippers of cargo.

Cargo consisted of:-

Wash duff	3,139-10-0-0.
Dock screenings	38-0-0-0.
(Pease huts) Sized Coal	157-14-0-0.

The stowage capacity of wet wash duff was 45 cu. ft. per ton, and its angle of repose, with the horizontal 42°.

No 3 hold ~~only~~ had only wet duff, which was sticky and not likely to move, and the hatch was full.

Witness :- Manager for Agents.

Bunkers aboard :- 16 0-0-0.

Shipped at Barry 114-7-0-0.

Witness :- Supervisor for the Employers Clearing House and Administrator for Coal Trimming Charges at Barry Dock.

Stated that the vessel was recognised by the Cardiff Coal Conciliation Board as:- "First class, level hatches only"

i. e. no trimming was required below deck, and the hatches had to be levelled down to permit of the covers being put into position.

"In view of the vessel being self trimming were any means taken to prevent coal shifting" — No.

The cost of trimming on this ship was $2\frac{1}{2}$ per ton of cargo, or over £30.

If the ship requires trimming it is in the owner's interest to trim the ship to get in more cargo, and also the Board of Trade will insist that it be done.

— " —

Witness :— Coal Trimming Supervisor employed by the Joint Control Board of Owners and Trimmers

Saw No 3 hatch with covers and tarpaulins in place and wedges in position. The coal was right up to the bottom of the hatch covers. He did not see any rope lashings in place on the night before the vessel sailed.

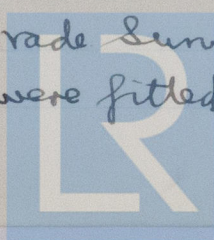
Witness :— Coal Trimming Supervisor employed by the Joint Control Board of Owners and Trimmers.

No recollection of rope lashings on No 1 hatch.

Witness :— Outdoor Officer of the Board of Trade at Barry

On Nov: 25th at 6.45 p.m. went on board S.S "Hartley" and interviewed Chief Officer who stated no lashings have previously been used, but if the Board desired he would fit them although he did not believe in them owing to the risk of chafing ^{the Chief Officer}.
He also said "This is the finest ship I have ever been in" and he considered it was impossible for water to come on the hatches because they were higher than the bulwarks.

This witness stated that he had received special instructions from the Board of Trade Surveyor to see that all self trimming colliers were fitted with lashings.



Witness:- Senior outdoor officer Board of Trade.

Draught taken from quays

Forward 18' 4"

Aft 20' 0"

Mean 19' 2"

On port side the summer mark was level with the water.

On the starboard side the winter mark was 3 in clear of the water.

allowing $1\frac{1}{2}$ inches when going into salt water the vessel would be approximately $1\frac{1}{2}$ inches above her marks.

He saw the Master who stated he had rope lashings for all the hatches, and would place them in position as soon as possible. He saw two men working at the lashings for No. 1 Hatch.

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Witness:- Mr. Halvorsen, partner of the firm who were managers of the S. S. "Hartley".

The vessel cost on delivery £ 41,000.

Her value when she left Barry was £ 42 to 43,000.

She was insured for £ 45,000.

of which £ 36,000 was on hull and machinery and £ 9,000 for 'freight and outfit' allowances.

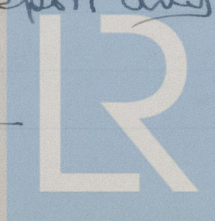
She was chartered for one voyage.

He handed in the Freeboard Certificate, also details of 1st seven voyages.

1 st	voyage - coal and bunkers.	3,481 Tons
2 nd	" " "	3,383 "
3 rd	" " "	3,293 "
4 th	" " "	3,293 "
5 th	" " "	3,304 "
6 th	" " "	3,207 "
7 th	" " "	3,283 "

The officers did not report any defects during these voyages.

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Witness :- Mr Scott, Superintendent Engineer.

2 lifeboats, fitted with metal tanks, each capable of holding 27 persons.

A discussion took place re: locking bars but nothing new resulted except that Mr Scott stated he had known baulks of timber used for battering down being broken by the sea.

— " —
The Court hopes to conclude to-morrow (Saturday), but the findings will be announced later.



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