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Steel Screw Steamer "BONACCORD"

This was a steel screw steamer, built at Aberdeen in 1889, by Messrs A. Hall & Co, and classed 100A.1.

Registered dimensions 244'85x34'2x15'75. Tonnage:- Under deck 1024; gross 1412; net 909 tons.

She was of the modern "well deck" type, with poop, raised quarter deck and bridge house combined extending to within 22 ft of the top-gallant forecastle, the bridge house being 108 ft long, with strengthened sides and an iron deck. The vessel was constructed with web frames in lieu of hold beams and was fitted with a cellular double bottom all fore and aft, divided into four tanks. There were four watertight bulkheads extending to main deck, and the fore and after compartments were each sub-divided by a bulkhead not watertight into two holds. In the bulkhead at fore end of stokehold, there were two openings, fitted with watertight doors worked from a platform.

The vessel was fitted with two main engine bilge pumps and the ordinary bilge injection; these would only draw from the tank gutters. A Worthington pump was connected with the Engine room and stokehold bilges and the after well, and could also be used for draining the ballast tanks. There was a centrifugal pump for clearing the ballast tanks, which pump as well as the Worthington could be worked from both main and donkey boilers. The main bilge and Worthington pumps were both connected by one open bottomed cock, to the suction pipes, so that they could not both be used simultaneously. There were two deck pumps in each hold. The bilge pumps would throw at least 15 tons of water per hour, the Worthington the same quantity, the bilge injection at least 120 tons, and the Centrifugal 160 tons per hour. Making a possible 295 tons per hour.

The Owners state that the vessel leaked all round the topsides in No 2 hold; all round the topsides in the fore part of the bridge and in way of the forecastle, and that round the coamings of No 2 hold the steamer had opened and was leaking. They also state that practical men in Aberdeen, sailors and engineers, consider the construction of the ship was faulty, in so far as the web frames are principally concerned, and they contend that in their opinion, the vessel was weak in structure and seemed to have collapsed inwards, the principal breach being near the Engine room and at the connection between the tank and the frames, and they state that no water entered the vessel in any other way than by inherent weakness

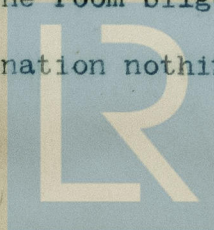
From the evidence and letters it appears that after launching, the vessel lay afloat for about 3 months, and then left for Blyth where she loaded 1868 tons of coals including bunkers, and sailed from Blyth for Malta on the 10th March 1890, being then loaded to a mean draught of 17ft 3ins which corresponds with the winter freeboard of 1ft 6ins assigned by the Committee.

The vessel touched the ground just before leaving Blyth, but apparently received no damage.

With the exception of the deck pumps, all the pumps were tried at Blyth and were in good order; the deck pumps were tried after leaving Blyth and found in good order.

On the 5th day out, the 14th March, the weather became very bad and was at its worst about 4 p.m. of the 6th day, during which day they shipped a great quantity of water.

At about 6.30 p.m. of the 15th March the 2nd Engineer noticed more water than usual in the Engine room bilges and put on the two main bilge pumps, but on examination nothing amiss was discovered



and at 8 p.m. when the Chief Engineer came on watch he reported this to him.

At this hour 8 p.m. soundings were taken by the Carpenter and no water ^{found} in any of the holds.

At 10 p. m. the Chief Engineer, finding the water as high as the top of the tank, put on the bilge injection and reported the state of affairs to the Master, when the Chief Mate "looked all over with a lamp and found everything right and intact".

About 11 p.m. assistance was obtained from the deck to clear the strums.

The Chief Engineer gave evidence that he had to cut the pipe of main bilge pump as it was threatening to choke.

By midnight the water had drowned out the starboard fires, which would mean about 120 tons of water in the Engine and Boiler space.

At this time the Carpenter states that No 2 hold was sounded again and 18 ins of water found, which would be roughly about 10 tons of water in Nos 1 & 2 holds, or rather more than would fill the gutters on each side of the double bottom supposing the vessel upright: but it should be noted that the sluices and doors in the bulkhead at fore end of stokehold were then open, and as there was much more water than in the stokehold it must have been flowing from the stokehold into the holds. The deck pumps were then shipped

About 12.30 a.m. 16th March, the manhole cover of the main ballast tank was broken off, so as to use the Centrifugal pump, and the Engine room and stokehold were cleared of the water which was run into the tank, the capacity of this tank is about 75 tons.

The Captain reports that water was then seen coming through the starboard doorway of No 2 hold into the stokehold and the Chief

Engineer states that it was also coming from under the starboard side pocket bunker.

The doors and sluices communicating with the holds were then closed after which the starboard fires were re-lighted and they succeeded in getting steam at about 140lbs pressure.

The Chief Engineer stated in his evidence "that the Centrifugal pump did not appear to work steady, only catching the water as the water rolled towards the pump." This would imply that the tank was not then full of water, and it appears from Mr Hindmarsh's letter dated 26th May 1890. that the sea valve was opened for filling the tank, to prime the Centrifugal pump.

At 2 a.m. on the 16th March the Carpenter went into No 2 hold to trim cargo and he stated in his evidence "he saw no sign of water in it". (This point has a bearing in the Owners Statement regarding the leaking round the topsides)

At about 6 a.m. steam was beginning to decrease and got as low as 100lbs pressure.

At 8 a.m. the s/s "ANGLIA" came to their assistance, and at 9am the engines of the "BONACCORD" were stopped for want of steam, the fires being drowned out.

At noon attempts were made to take the vessel in tow, but unsuccessfully.

At this time there appears to have been about 4ft of water in the Engine room.

The weather had now improved and about 40 tons of coals were jettisoned out of No 2 hold.

At about 4 p.m. the crew began leaving the vessel, and at about 6 p.m. the Master and Engineer left the vessel and before doing so put up three red lights, and the Master sounded and found about 7ft of water in the hold (about 200 tons in Nos 1 & 2 holds allowing for

coals and supposing vessel upright) and he estimated there was 5ft in the Engine room.(excluding tank).The vessel was down by the head when they left her.

The lights were missed shortly after 8 p.m.and it was concluded. the vessel had then foundered.

It also appears from the evidence that the Master stated he had no idea whatever what was the cause of leakage,or how the water came into the vessel,and that the ship had shewn no signs of leakage.

From the evidence it appears that after 12.30 a.m.on the 16th when the sluices and doors leading to the holds were shut the whole of the pumping power was confined to the Engine room:at this time when the water was run into the tank ^{it} was certainly not higher than the tank top,At 9 a.m.the fires were drowned out and the pumps stopped.In $8\frac{1}{2}$ hours therefore the water which had entered the Engine room was about 3ft above tank top (or about 120 tons more than the pumps threw out)at noon there was only 4ft of water in the Engine room and at 6 o'clock only 5ft.It appears from this that after the pumps were stopped not more than 80 to 100 tons of water entered the Engine room for nine hours or certainly not more than ^{what} accumulated when the pumps were all at work.

This points to the conclusion that the pumps were not effective, but no opinion can be expressed as to the cause of the loss in the absence of any evidence as to how the water found its way into the vessel.

J.F.L.
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