

# Report of Survey for Repairs of Engines and Boilers.

No. 42

No. in Reg. Book. Survey held at Sunderland.

Date, first Survey Dec<sup>r</sup> 30<sup>th</sup> /76 Last Survey Feb<sup>y</sup> 5<sup>th</sup> 1877.

1429 on the Steam Ship, "Avena" 459 Tons

Owners W. Thorburn. Port belonging to Uddervalla.

Classed 90A1

Diameter of Cylinder 24 & 48

Length of Stroke 33

Engines made at Newcastle

When made 1873

Pressure of Steam 61 & 65 lbs

Nominal Horse Power 95

By whom made Cuseburn Engineering Co.

Particulars of Repairs and Examination. At the request of Gustaf Albert Miltopaus, Master of the above named vessel; I surveyed her engines & boilers to ascertain the extend of certain damages sustained, whilst on her voyage from Uddervalla to Sunderland, during a succession of heavy gales. Arrived here Dec<sup>r</sup> 28<sup>th</sup> /76 and inspected the repairs when being executed.

On examination, found the stays for fixing the main boiler to the ship's sides, broken away from the port side of the vessel, and those of the starboard side, damaged. And the boiler shored up in its place with pit-props, the packing between the boiler and its seating destroyed, the casing gear of the safety valves damaged. The bracing of the main steam pipe cracked. The joints of the stop valve and throttle valve of the steam connection to the engine, leaking. The blow-off pipe, and cock, attached to the boiler, leaky, and damaged. Several of the riveted joints on the bottom of the boiler leaking. The lagging of the boiler damaged. The steam winch pipes from the main boiler, and on the deck damaged. The propeller loose on the shaft and the feather destroyed.

The Boiler was fixed with new stays, & new packing, the casing gear of the safety valves repaired, and the safety valves examined, they are of the lever and weight construction, one loaded to 61 lbs, and the other to 65 lbs. The flanges of the main steam pipe rebrazed. The stop and throttle valve chests, blow off cock & pipe were all repaired & rejointed. The bottom of the boiler caulked. The lagging of the boiler repaired. The steam winch pipes repaired. New feather fitted in the propeller shaft, and the propeller fixed on the shaft. All the sea cocks and valves examined. Examined all the crank shaft bearings and found them in good condition, examined the boiler and found it in good condition. The cylinders opened up, pistons and slide valves, examined all in good condition, a new spring fitted behind the low pressure valve. New bushes fitted to the top end of the after connecting rod. New valve, two cocks, and connection fitted to the new water ballast tank.

Damage Survey fee £ 4. 4.

The Amount of Fee ... £ 2. 2. received by me,

Certificate W. Allison ... 15<sup>th</sup> Feb<sup>y</sup> 1877.

(Travelling Expenses, if any, £ —)

Committee's Minute

William Allison.  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.