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# Report of Survey for Repairs of Engines and Boilers.

No. 2

No. in Reg. Book. Survey held at Antwerp Date, first Survey 18<sup>th</sup> March Last Survey 24<sup>th</sup> May 1876

156 on the Iron S.S. Pauline David

Tons 1023  
1310

Owners David Verbist & Co Port belonging to Antwerp

Classed Years assigned. Character in Register Book. A I

Diameter of Cylinder 45 1/4 inches

Length of Stroke 36 inches

Pressure of Steam 25 lbs

Nominal Horse Power 200

Engines made at South Shields

When made 1863

By whom made Marshall Brothers

Particulars of Repairs and Examination Found the Engines defects as follows; viz:  
Fore piston junk ring broken; Piston rod bent; cylinder cover split; crank  
shaft damaged; condenser tube plate broken; feed check valve joints started  
bulges pipes twisted; stays on bottom of boilers leaky; some tubes in bad  
state; boilers bearers and all support stays to be examined.

When the vessel was in dry dock found necessary to unship the Propeller  
and the shaft; the shaft bearing on the Rudder post and the bush in the  
stern Post were much worn; the studs and nuts of the stern gland  
required to be renewed. Sea cocks and valves examined. In continuation  
of examining the Engines, found the trap bushes for Piston rod glands and  
stuffing boxes worn. The crank shaft being in two pieces had suffered  
very much, showed several cracks and could not be trusted. The crank  
pin brases and main bearing brases were entirely out service; the  
eccentric rods wanted repairing; several bolts of the bearings of the  
main shaft had to be altered. To take the shafting out, one bulkhead  
plate was to be removed. The Condenser was found in a bad state:  
three tube plate broken; about 200 tubes damaged; nearly all wood  
ferrules were found unfit for service. Three Bilge pipes and their  
mud boxes had to be taken off and repaired. The steam and  
hand pumps were to be taken to pieces to receive the necessary repairs  
the steam winches and their steam pipes had to be lifted in order  
to undergo a thorough overhauling.

Repairs done; viz: a new end was welded on the fore piston rod,  
turned, the screw cut and a new nut made; a new junk ring fitted  
with 8 new 1 1/4 inch bolts and a new check ring and studs. The broken  
cover cylinder was replaced by a new one; the cylinder glands and  
stuffing boxes received new trap bushes; new crank pin brases  
were fitted to the connecting rods; the old crank shaft was  
taken out and a new one placed with new gun metal bearings,  
the two go: astern eccentric rods had new liners fitted in the traps.  
Sea cocks and valves were carefully overhauled. The stern bush

The Amount of Fee £ 4 : 0 : 0 received by me,

Certificate (if required) £ : 24<sup>th</sup> May 1876

(Travelling Expenses, if any, £ )

Committee's Minute 19th August 1876

J. Demblon  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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was drawn and new lignum vitae fitted; the same was done for the bearing on the Rudder post and both rescrewed in their place with new brass studs and nuts. New studs and nuts were made for the Stern gland and new bolts for the bearings of the Propeller shaft. a new Propeller was fixed on the shaft with new fore and aft and tail keys with guards. The bulkhead plate was replaced.

Three sections of the tube plates of the Condenser were cut out and new brass plates fitted in their place, 200 new tubes were placed in the Condenser and about 2000 wood screws. All steam and hand pumps and three bilge pipes were properly repaired; the steam winches were put in perfect order and replaced.

Seven new tubes were placed in the boilers, 12 short stays with nuts and 3 stay plates; the boilers were scaled and scraped thoroughly and put in good order but there was too little time for testing them.

The Engines and Boilers are in my opinion now in good order and safe working conditions.

J. Demitree

N. B. I beg to observe that the owners desire to have the Engines and Boilers certified and that all particulars, on that effect, were taken and noted by me; but, as the boilers have shortly not been tested and not tested now on account the vessel being ready for sea, it is proposed that this shall be done on the vessel's next return to this Port; the particulars of all which then will be reported by me to the Committee

J. D.



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