

Lloyd's Register of  
British & Foreign Shipping  
Glasgow July 19<sup>th</sup> 1882  
Per 20/7/82

Sir

In accordance with the instructions contained in your letters of the 21<sup>st</sup> July 1881 26<sup>th</sup> April + 3<sup>rd</sup> July 1882 regarding the new Screw Steamer "Stratheden" built by Messrs G. Murray & Co. Dumbarton and fitted with Huntstatter's patent screw propelling & steering apparatus, we beg respectfully to acquaint you that we attended the trials of this vessel on three occasions viz 3<sup>rd</sup> 4<sup>th</sup> & 14<sup>th</sup> July 1882. The results of which is herewith enclosed in tabulated form. This patent apparatus consists of an ordinary screw propeller outside the rudder secured to a short length of shaft passing through the rudder which is attached to the main propeller shaft by a universal joint to permit of its moving along with the rudder.

With a view to test the efficiency of the vessel without the patent apparatus the blades were removed, and on the first mentioned date a trial was made on the measured mile at Wemyss Bay by six consecutive runs with, and



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and against, wind & Tide, when an average Speed of 9.806 Knots was obtained (See Table)

This trial was conducted under very unfavourable circumstances, the weather during the day being rough and squally, with constant rain and the vessel draught too light viz 5'-5" for 10'-9" aft there being over 4 feet of the propeller above the water, such being the case the trial we considered unsatisfactory as full power could not be developed without endangering the machinery, the Engines running at a high speed with the throttle valve ~~partly~~ nearly closed.

On this occasion a trial of the steering of the vessel was also made by turning one circle but no graduation trials could be made owing to the state of the weather the time taken to accomplish this circle was 8 min 40 sec with the Engines making about 47 Revolutions per minute.

On the 7<sup>th</sup> inst, the blades of the patent apparatus being replaced and the vessel about 15" deeper with water ballast, another trial was made on the measured mile; it will be observed from the Table that the results attained were much better than on the former occasion, under the



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The more favourable conditions upon which this trial was made the full power of the Engines could be developed but the blades of the main propeller were still considerably above the water & those of the steering propeller not wholly immersed by about 12 inches (as shown on tracing enclosed) the weather was also more favourable and the steering qualities of the vessel were tried in various ways viz by turning round to Starboard and to Port with the Engines going full speed ahead one of these trials with Starboard helm was accomplished in 4 min 55 sec in a circle estimated by observation of about 1000 ft, and with port helm in 5 min 58 sec, also by bringing the vessel to dead still with the rudder in afore & aft direction and simultaneously starting the Engines full speed astern and putting the helm hard over to Starboard and Port the time taken to complete one revolution was 4 min 27 sec the circle being about 700 ft

Another trial was made on the 14<sup>th</sup> inst when the vessel was loaded to her deep load draught viz 15' 6" and ready for sea, two runs were made on the measured mile when



when the Speed attained was 11.63 Knots

The Steerage was tried by maneuvering the vessel very much in the same way as on the former occasion when circles with Starboard & Port helm were made in 5 min 3 sec, & 6 min 2 sec respectively the Engines performing 56 revolutions, also by reversing Engines going full Speed ahead when on a straight course & putting the helm hard over to Starboard and Port noting the time in which the vessel beered through the various points of the Compass the particulars of which are stated in the tables.

This vessel is fitted with Steam Steering gear placed on the Bridge Deck amidships and was in operation during the whole of these trials, the efficiency of the hand steering gear was also tested and appeared well adapted for the steering of the vessel it being as easily handled as an ordinary rudder of a vessel of similar dimensions.

The details of the patent steering propeller and connections were examined by us during construction and when



When being fitted in place, also when the vessel was put into Dry Dock after the first trial.

The material and workmanship are of good description the whole of the parts being well fitted. From our observations the vessel appears to answer her helm with more rapidity than if an ordinary rudder were fitted causing little or no vibration and not interfering with the efficient working of the ship or machinery we are therefore of opinion that when properly fitted and kept in good order (the universal joint being liable to corrosion and considerable tare & wear) this apparatus may form part of the machinery of vessels intended for Classification in the Society's Register Book

We are

Sir  
Your Obedient Servants  
James Morrison  
J. M. McGregor

The Secretary  
Lloyd's Register  
London



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20/7/82 In Newcastle  
Mr Parker Transport  
J.M.

These trials cannot be looked upon  
as comparative trial not being made  
under similar conditions, so far it  
cannot be said that this additional  
review is an advantage to a steam  
ship either as far as speed or  
steering is concerned, the whole  
arrangement being a novelty and the  
connecting and twisting parts being  
subjected to great wear and tear.

It is submitted that the vessel  
should be classed subject to their  
pipelles and connections being examined  
in 6 months time from the time  
the vessel commences to work

J.M. 24.7.82



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