

# REPORT ON MACHINERY. 1963

Port of *West Hartlepool*

Received at London Office

13

Survey held at *Stockton & W. Hartlepool* Date, first Survey *29<sup>th</sup> July 1889* Last Survey *20<sup>th</sup> March 1890*

(Number of Visits *26*)

Tons *1797.78*  
*2792.95*

on the Screw Steamer *"Windsor"*

Naeburn Built at *W. Hartlepool* By whom built *Messrs. W. Gray & Co.* When built *1890*

rs made at *Stockton* By whom made *Messrs. Blair & Co. Ltd.* when made *1890*

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Horse Power *235* Owners *British Steamship Co.* Port belonging to *London*

Registered Horse Power *250*

INNES, & Co.—

Description of Engines *Inverted, Triple Expansion, 3 Cylinders & 3 Cranks.*

Diameter of Cylinders *23, 37 1/2, 61 1/2* Length of Stroke *39* No. of Rev. per minute *60* Point of Cut off, High Pressure *2/3 stroke* Low Pressure *2/3 stroke*

Diameter of Screw shaft *12* Diam. of Tunnel shaft *11 1/4* Diam. of Crank shaft journals *11 3/4* Diam. of Crank pin *12 1/4* size of Crank webs *19 1/4 x 8 3/8*

Diameter of screw *16.0* Pitch of screw *17.0* No. of blades *4* state whether moveable *no* total surface *7109. ft*

No. of Feed pumps *2* diameter of ditto *3 1/4* Stroke *28* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *4 1/2* Stroke *28* Can one be overhauled while the other is at work *yes*

Where do they pump from *On hold, Engine room, After well, tanks, & sea.*

No. of Donkey Engines *2* Size of Pumps *(7 1/2 x 9) (4 x 8)* Where do they pump from *(Ballast tanks, sea, & all bilges) (Sea, hotwell & tanks)*

Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*

No. of bilge injections *one* and sizes *6" dia* Are they connected to condenser, or to circulating pump *Circulating pump.*

How are the pumps worked *By levers from the After piston rod crosshead.*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *yes* Are the discharge pipes above or below the deep water line *above*

Are they each fitted with a discharge valve always accessible on the plating of the vessel *yes* Are the blow off cocks fitted with a spigot and brass covering plate *yes*

What pipes are carried through the bunkers *none* How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *19<sup>th</sup> March 1890.*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Top platform of Engine room.*

## BOILERS, &c.—

Number of Boilers *Two* Description *Cyl. built? Single Ended* Whether Steel or Iron *Steel*

Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *25<sup>th</sup> Nov. 1889.*

Description of superheating apparatus or steam chest *none* Heating surface *3520*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no superheater*

No. of square feet of fire grate surface in each boiler *49.5* Description of safety valves *Spring* No. to each boiler *2*

Area of each valve *7.07* Are they fitted with easing gear *yes* No. of safety valves to superheater *—* area of each valve *—*

Are they fitted with easing gear *—* Smallest distance between boilers and bunkers or *woodwork* *30 1/2* Diameter of boilers *14.0 1/2*

Length of boilers *10.0* description of riveting of shell long. seams *double butt strap* circum. seams *double rivet lap* Thickness of shell plates *1 1/4*

Diameter of rivet holes *1 1/4* whether punched or drilled *drilled* pitch of rivets *12 or 8, 2 or 4* Lap of plating *9 1/8*

Per centage of strength of longitudinal joint *84.3* working pressure of shell by rules *162 lbs.* size of manholes in shell *16 x 12*

Size of compensating rings *38 x 26 x 1 1/4* No. of Furnaces in each boiler *3*

Outside diameter *3.6* length, top *6.3* bottom *6.3* thickness of plates *9/16* description of joint *welded* if rings are fitted *no*

Greatest length between rings *—* working pressure of furnace by the rules *166 lbs.* combustion chamber plating, thickness, sides *9/16* back *9/16* top *9/16*

Pitch of stays to ditto, sides *7/2 x 7/4* back *7/2 x 7/4* top *7/2 x 7/4* stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *172 lbs.* Diameter of stays at smallest part *1 1/16* working pressure of ditto by rules *179 lbs.* end plates in steam space, thickness *1 1/8*

Pitch of stays to ditto *16 1/4 x 15* how stays are secured *double nuts & washers* working pressure by rules *171 lbs.* diameter of stays at smallest part *2 1/2* working pressure by rules *181 lbs.* Front plates at bottom, thickness *1* Back plates, thickness *1*

Greatest pitch of stays *12 5/8* working pressure by rules *160 lbs.* Diameter of tubes *3 1/4* pitch of tubes *4 5/8 x 4 1/2* thickness of tube plates, front *1* back *5/8* how stayed *stay tubes* pitch of stays *9 1/4 x 9* width of water spaces *1 1/4*

Diameter of Superheater or Steam chest *—* length *—* thickness of plates *—* description of longitudinal joint *—* diam. of rivet holes *—*

Pitch of rivets *—* working pressure of shell by rules *—* diameter of flue *—* thickness of plates *—* If stiffened with rings *—*

Distance between rings *—* working pressure by rules *—* end plates of superheater, or steam chest; thickness *—* how stayed *—*

Superheater or steam chest; how connected to boiler



2 DONKEY BOILER— S Description *Vertical Cyl. 3 Cross tubes,*  
 Made at *H. Hartley* by whom made *H. Gray & Co. Ltd* when made *12.2.90* where fixed *In itohold*  
 Working pressure *65 lbs.* tested by hydraulic pressure to *130 lbs.* No. of Certificate *2067* fire grate area *16.0 sq. ft.* description of  
 valves *Spring* No. of safety valves *one* area of each *7.6* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *5.6* length *11.0* description of riveting *double riv. lap*  
 Thickness of shell plates *13/32* diameter of rivet holes *5/4* whether punched or drilled *punched* pitch of rivets *2 3/4* lap of plating *4 1/2*  
 per centage of strength of joint *72.7* thickness of crown plates *13/32* stayed by *6 stays 1 1/2 dia*  
 Diameter of furnace, top *4.3* bottom *4.9* length of furnace *5.6* thickness of plates *15/32* description of joint *single riv. lap*  
 Thickness of furnace crown plates *15/32* stayed by *6 stays 1 1/2 dia*  
 Working pressure of furnace by rules *65 lbs.* diameter of uptake *14* thickness of plates *7/16* thickness of water tubes *7/16*

SPARE GEAR. State the articles supplied:— *One propeller, a set of bolts & nuts for a connecting  
 rod, main bearing, & shaft coupling, a set of valves for the feed  
 & bilge pumps, a set of L. P. piston springs 6 boiler tubes, 12 condensers,  
 tubes, bolts, nuts, & wear bars ass. Two sets of feed check valves.*  
 The foregoing is a correct description,  
*Wm Blair & Co. Ltd*  
*Wm Blair* Manufacturer of Engines & main boilers.

General Remarks (State quality of workmanship, opinions as to class, &c.)

*Main steam pipes tested by hydraulic pressure to 320 lbs. per  
 square inch and found tight.  
 The engines and boilers of this vessel have been constructed  
 under Special Survey and of a good quality of  
 workmanship they have been tried under steam, safety  
 adjusted, and found to work well and are now in safe  
 and efficient working condition and eligible, in my opinion  
 to have *L.M.C. 3.90* recorded in the Register of this Port.*

*It is submitted that  
 this vessel is eligible  
 to have L.M.C. 3.90  
 recorded.*

*M.D.*  
*31.3.90*

The amount of Entry Fee ... £ 2 : 0 : 0 received by me,  
 Special ... £ 31 : 15 : 0  
 Donkey Boiler Fee ... £ 2 : 2 :  
 Certificate (if required) ... £ : :  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ )

Committee's Minute THURS 3 APRIL 1890

*+ L.M.C. 3/90*

*G. Stoddart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign

HPL362/33

R. E. TAYLOR & SON, STEAM PRINTERS, 10 OLD STREET, GOSWELL ROAD, LONDON, E.C.1.

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