

# REPORT ON MACHINERY.

No. *5202*

(Received at London Office) *19th OCT. 82.*

No. in Survey held at *Hull*  
Reg. Book.

Date, first Survey *13th Feb 82*

Last Survey *2nd Oct 1882*

on the *iron screw steamer "Holderness"*

Tons *1578*  
*983*

Master *Law* Built at *Hull* When built *1882*

Engines made at *Hull* By whom made *Cartwright* when made *1882*

Boilers made at *Hull* By whom made *do* when made *1882*

Registered Horse Power *130* Owners *Holderness S. S. Co. (Limited)* Port belonging to *Hull*

## ENGINES, &c.—

Description of Engines *vertical, inverted, direct, compound, surface condenser*

Diameter of Cylinders *24 30" & 55"* Length of Stroke *36"* No. of Rev. per minute *40* Point of Cut off, High Pressure *7/12* Low Pressure *9/12*

Diameter of Screw shaft *10 1/2"* Diameter of Tunnel shaft *9 3/4"* Diameter of Crank shaft journals *10 1/4"* Diameter of Crank pin *10 1/4"* size of Crank webs *7" x 11 3/4"*

Diameter of screw *13" 6"* Pitch of screw *15.6 & 14" 0"* No. of blades *4* state whether moveable *no* total surface *50*

No. of Feed pumps *2* diameter of ditto *3 1/4"* Stroke *24"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *3 1/4"* Stroke *24"* Can one be overhauled while the other is at work *yes*

Where do they pump from *all compartments, sea, & tanks.*

No. of Donkey Engines *Two* Size of Pumps *8" x 8"* Where do they pump from *the ballast engine from sea & after tank with delivery overboard. the feed water is connected to bilge system & also pumps from the sea. the fire tank with delivery to deck, overboard, main donkey boiler. (main donkey boiler) water supply to the tank*

Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes in E.R.* Are the sluices on Engine room bulkheads always accessible *yes in aft. no*

No. of bilge injections *one* and sizes *4/4* Are they connected to condenser, or to circulating pump *to circulating pump.*

How are the pumps worked *By rocking levers from pistons and crosshead.*

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *all except 1* Are the discharge pipes above or below the deep water line *below*

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 in the engine room*

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 *now new*

Is the screw shaft tunnel watertight *Reputed* and fitted with a sluice door *yes* worked from *upper platform.*

## BOILERS, &c.—

Number of Boilers *One* Description *circular, multitubular, made of steel*

Working Pressure *85 lb.* Tested by hydraulic pressure to *170 lb.* Date of test *4th September 1882*

Description of superheating apparatus or steam chest *none fitted*

Can each boiler be worked separately *✓* Can the superheater be shut off and the boiler worked separately *✓*

No. of square feet of fire grate surface in each boiler *63* Description of safety valves *Cameron & Leaton's spring loaded*

No. to each boiler *2* area of each valve *21.64* 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~~ *main boiler 20" Donkey boiler 3"*

Diameter of boilers *15' 6 1/2"* Length of boilers *11' 2"* description of riveting of shell long. seams *double butt with circum. seams double riv' laps*

Thickness of shell plates *7/8"* diameter of rivet holes *1/8"* whether punched or drilled *drilled* pitch of rivets *4 1/2"*

Lap of plating *1 1/2 straps* per centage of strength of longitudinal joint *71 per cent at 2 1/2 tons working pressure of shell by rules* *86.7 lb*

Size of manholes in shell *16" x 12"* size of compensating rings *28" x 24" x 7/8"*

No. of Furnaces in each boiler *4* outside diameter *37 1/16"* length, top *7' 6"* bottom *10' 6"*

Thickness of plates *7/32"* description of joint *butt jointed with double straps - the ends are* rings are fitted *shut at greatest length between rings* *8' 0"*

Working pressure of furnace by the rules *85 lb.*

Combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*

Pitch of stays to ditto sides *8" x 8" to 8 1/2"* back *8" x 8"* top *8 1/4"*

If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *106 lb & 120 lb*

Diameter of stays at smallest part *1 1/16" & 1 7/16"* working pressure of ditto by rules *107 lb to 140 lb*

End plates in steam space, thickness *13/16"* pitch of stays to ditto *16" x 15 1/4" and 16" x 12"* how stays are secured *double nut & washers*

Working pressure by rules *92 lb* diameter of stays at smallest part *2" & 1 3/4" (steel)* working pressure by rules *88 lb*

Front plates at bottom, thickness *11/16"* Back plates, thickness *11/16"* greatest pitch of stays *12"* working pressure by rules *102 lb & 88 lb*



Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{3}{4} \times 4\frac{3}{4}$  thickness of tube plates, front  $\frac{11}{16}$  back  $\frac{11}{16}$   
How stayed stay tubes as for an awning, 1 side butt strap width of water spaces  $\frac{1}{4}$   
Diameter of Superheater or Steam chest length  
Thickness of plates description of longitudinal joint diameter 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  
DONKEY BOILER— Description fireman, multitubular with 2 furnaces & brick comb. chamber.  
Made at Hull By whom made Charles G when made 1892  
Where fixed in stockholm working pressure 85 lb. Tested by hydraulic pressure to 170 lb. No. of Certificate 101.  
Fire grate area 16 sq. ft. Description of safety valves C.A. patent & spring loaded No. of safety valves one area of each 9.6 sq. in.  
If fitted with easing gear yes If steam from main boilers can enter the donkey boiler yes. (Equal pressures)  
Diameter of donkey boiler 7' 3" length 5' 0" description of riveting double riveted laps (long seam, single riveted laps, circumferential, whether punched or drilled long drilled & circumferential)  
thickness of shell plates  $\frac{11}{16}$  diameter of rivet holes  $1\frac{1}{8}$  pitch of rivets  $4" \times 2\frac{1}{2}"$  lap of plating  $5\frac{1}{2} \times 3\frac{1}{4}$  per centage of strength of joint 64.  
thickness of end plates  $\frac{7}{8}$  stayed by 4.  $2\frac{1}{4}$  stays  
Diameter of furnace top outside 26 bottom length of furnace 5' 0"  
thickness of plates  $\frac{7}{16}$  description of joint welded.  
thickness of tube furnace crown plates  $\frac{11}{16}$  stayed by stay tubes  $12\frac{1}{2}$  pitch  
Working pressure of shell by rules 91 lb. working pressure of furnace by rules 132 lb.  
diameter of uptake x thickness of plates x thickness of water tubes  $2\frac{1}{2}"$  Pitched  $3\frac{1}{2} \times 3\frac{1}{4}"$

The foregoing is a correct description,

*J. H. Maden*

Manufacturer.

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

The machinery fitted on board in accordance with the Society's Rules and Boilers made to approved design are now, in my opinion in safe working condition and the case is respectfully submitted for the favourable consideration of the Committee with a view to the notification L.M.O. 10.82 in the Register Book.

(List of spare gear attached)

The amount of Entry Fee .. £ 2 0 0 received by me, *M. H.*

Special on 130 H.P. £ 19 10 0

Donkey Boiler

Certificate (if required) .. £ 2 2 0

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

Friday, 20th October 1892

*John Bateman*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.