

REPORT ON MACHINERY.

No. 18119

Port of Hull

Received at London MON. 23 JUL 1906

No. in Survey held at Selby & Hull Date, first Survey Feb. 15th Last Survey June 23rd 1906
 Reg. Book. 501 on the Screw Steamer "Hercules" (Number of Visits 21)
 Master Built at Selby By whom built
 Engines made at Hull By whom made Charles B. Holmes & Co. when made 1906
 Boilers made at do By whom made do when made 1906
 Registered Horse Power Owners Reading & Dickinson Port belonging to Swansea
 Nom. Horse Power as per Section 28 69 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12½, 21½, 35 Length of Stroke 24 Revs. per minute 112 Dia. of Screw shaft as per rule 7.13 Material of screw shaft Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight
 in the propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 36"
 Dia. of Tunnel shaft as per rule 6.4 ✓ Dia. of Crank shaft journals as per rule 6.7 ✓ Dia. of Crank pin 7" Size of Crank webs 13½ x 4½ Dia. of thrust shaft under
 collars 7" Dia. of screw 8-7½ Pitch of Screw 11-0 No. of Blades 4 State whether moveable No Total surface 28 sq. ft.
 No. of Feed pumps 1 Diameter of ditto 2½ Stroke 24 Can one be overhauled while the other is at work ✓
 No. of Bilge pumps 1 Diameter of ditto 2½ Stroke 24 Can one be overhauled while the other is at work ✓
 No. of Donkey Engines One Sizes of Pumps 2¾ x 5 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 2" dia. In Holds, &c. One 2" dia.
 Ejector suction from all bilges & discharge on deck
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 2½" Ejector
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible None
 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 Cold suction How are they protected Wood casing
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 Dates of examination of completion of fitting of Sea Connections 24/4/06 of Stern Tube 24/4/06 Screw shaft and Propeller 24/4/06
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓
 OILERS, &c.—(Letter for record (S) Manufacturers of Steel The Steel Coy of Scotland & Co.
 Total Heating Surface of Boilers 1120 sq. ft. Forced Draft fitted No No. and Description of Boilers One S.E. by Mr. Maltby
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7. 6. 06 No. of Certificate 1477
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 33 sq. ft. No. and Description of Safety Valves to
 each boiler Two direct spring Area of each valve 3.9 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 7½ Mean dia. of boilers 12-6 Length 10-0 Material of shell plates Steel
 Thickness 1½ Range of tensile strength 29-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S.R. Lap
 Long. seams S.R. S. Rivets Diameter of rivet holes in long. seams 1½ Pitch of rivets 7 Top of plates or width of butt straps 15"
 Percentages of strength of longitudinal joint rivets 86 plate 85.26 Working pressure of shell by rules 185 lbs Size of manhole in shell 16 x 12
 Size of compensating ring 7 x 1½ No. and Description of Furnaces in each boiler Two Holmes Material Steel Outside diameter 3-7"
 Length of plain part top ✓ Thickness of plates crown 1½ Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 198 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 11/16 Top 23/32 Bottom 23/32
 Pitch of stays to ditto: Sides 9 x 8½ Back 9 x 8¾ Top 10 x 8½ If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 194 lbs
 Material of stays Steel Diameter at smallest part 1½ Area supported by each stay 105.75 Working pressure by rules 204 lbs End plates in steam space:
 Material Steel Thickness 1½ Pitch of stays 17½ x 17½ How are stays secured Nuts & screws into end plates Working pressure by rules 185 lbs Material of stays Steel
 Diameter at smallest part 6.2 Area supported by each stay 306.25 Working pressure by rules 202 lbs Material of Front plates at bottom Steel
 Thickness 7/8 Material of Lower back plate Steel Thickness 15/16 Greatest pitch of stays 14¾ Working pressure of plate by rules 183 lbs
 Diameter of tubes 3¼ Pitch of tubes 4½ x 4½ Material of tube plates Steel Thickness: Front 7/8 Back 7/8 Mean pitch of stays 9¼ x 9"
 Pitch across wide water spaces 14½ Working pressures by rules 180 lbs Girders to Chamber tops: Material Iron Depth and
 Thickness of girder at centre 8¾ x 1¾ Length as per rule 2-7 Distance apart 8¾ x 10 Number and pitch of stays in each 32 8½"
 Working pressure by rules 202 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
 separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet
 ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
 Stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

VERTICAL DONKEY BOILER—Manufacturers of Steel

No.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets Plates
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:—Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Main & donkey feed check valves. Assorted bolts & nuts &c.

The foregoing is a correct description,
Charles D. Holmes Manufacturer.

Dates	During progress of work in shops—	1906: Feb. 15. 23. Mar. 5. 14. 22. 30. Apr. 20. 24. 26. 27. May 3. 10. 11. 18. Jun. 1. 7. 13. 16. 18.
of Survey while building	During erection on board vessel—	Jun. 20. 23
	Total No. of visits	21

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—	Cylinders	10/5/06	1/6/06	Slides	1/6/06	Covers	1/6/06	Pistons	1/6/06	Rods	1/6/06
Connecting rods	1/6/06	Crank shaft	18/5/06	1/6/06	Thrust shaft	3/5/06	1/6/06	Tunnel shafts	✓	Screw shaft	20/4/06
Stern tube	20/4/06	Steam pipes tested	18/6/06	Engine and boiler seatings	24/4/06	Engines holding down bolts	13/6/06				
Completion of pumping arrangements	20/6/06	Boilers fixed	16/6/06	Engines tried under steam	20/6/06						
Main boiler safety valves adjusted	20/6/06	Thickness of adjusting washers	F 3/8" A 7/16"								
Material of Crank shaft	Iron	Identification Mark on Do.	1.6.06 J.K.	Material of Thrust shaft	Iron	Identification Mark on Do.	1.6.06 J.K.				
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	Iron	Identification Marks on Do.	1.6.06 J.K.				
Material of Steam Pipes	Solid drawn copper		Test pressure	360 lbs							

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

The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of + L M C 6.06 in the Register Book.

It is submitted that
 this vessel is eligible for
 THE BOARD H.L.M.C. 6.06

The amount of Entry Fee.	£	1	:	:	:	When applied for.
Special	£	10	:	7	:	21/7/1906
Donkey Boiler Fee	£	:	:	:	:	When received.
Travelling Expenses (if any)	£	:	:	8	:	31.7.06

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

Committee's Minute

Assigned

TUES. 24 JUL 1906

+ L M C 6.06

MACHINERY CERTIFICATE
 WRITTEN.



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