

# REPORT ON MACHINERY.

Received at London Office MON. SEP. 9 - 1912

Date of writing Report 2-9-12 When handed in at Local Office 7-9-12 Port of Hull

No. in Survey held at Hull Date, First Survey Dec 7th 1909 Last Survey 28-8-12 19

Reg. Book. Sup 5 on the Steel screw Hopper No 63 (late J. Constant - IV) (Number of Visits 103) Tons } Gross 475

Master \_\_\_\_\_ Built at Hull By whom built Earlie & Co Ltd When built 1912-P

Engines made at Hull By whom made Earlie & Co Ltd when made 1912-P

Boilers made at Hull By whom made Earlie & Co Ltd when made 1912-P

Registered Horse Power \_\_\_\_\_ Owners J. Constant Port belonging to London

Nom. Horse Power as per Section 28 64 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

## ENGINES, &c.—Description of Engines Triple Expansion Turbine Condensing No. of Cylinders three No. of Cranks three

Dia. of Cylinders 18"-18"-31" Length of Stroke 21" Revs. per minute 106 Dia. of Screw shaft 7 3/16" Material of steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners 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 yes If two

liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 2'-6 1/2"

Dia. of Tunnel shaft 6.01" Dia. of Crank shaft journals 6.31" Dia. of Crank pin 6 1/2" Size of Crank webs 13x4 1/2" Dia. of thrust shaft under

collars 6 1/2" Dia. of screw 9'-0" Pitch of Screw 9'-0" No. of Blades 3 State whether moveable no Total surface 27 1/2

No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work yes

No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work yes

No. of Donkey Engines one duplex Sizes of Pumps 5 1/4 x 3 1/2 x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one 2" In Holds, &c. one 2" in peaks, each buoyance

space & stove room

No. of Bilge Injections one sizes 3" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2"

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 no

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 forward 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 11-6-12 of Stern Tube 1-7-12 Screw shaft and Propeller 10-7-12

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from \_\_\_\_\_

## BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Steel Co of Scotland

Total Heating Surface of Boilers 1210 1/2 Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 27-3-12 No. of Certificate 1890

Can each boiler be worked separately yes Area of fire grate in each boiler 39'0" No. and Description of Safety Valves to

each boiler two spring loaded Area of each valve 3.97 Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between ~~boilers~~ or uptakes and bunkers 5'-0" Mean dia. of boilers 142" Length 10'-0" Material of shell plates steel

Thickness 1" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

long. seams J.R. & B. 1 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 16"

Per centages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 186 Size of manhole in shell 12" x 16"

Size of compensating ring 8" x 1" No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 41 1/2"

Length of plain part top 79.2" bottom 72" Thickness of plates crown 7/16" bottom 7/16" Description of longitudinal joint welded No. of strengthening rings yes

Working pressure of furnace by the rules 186.5 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9 1/2 x 9 1/2" Back 10 x 8 1/2" Top 9 1/2 x 8 1/2" stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Diameter at smallest part 2.07" Area supported by each stay 90.25" Working pressure by rules 206 End plates in steam space:

Material steel Thickness 1 1/32" Pitch of stays 15 1/2 x 11" How are stays secured 8. H. Working pressure by rules 180 Material of stays steel

Diameter at smallest part 5.19" Area supported by each stay 263.5" Working pressure by rules 204 Material of Front plates at bottom steel

Thickness 1 1/16" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 14 1/4 x 8 1/2" Working pressure of plate by rules 193

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2 x 4 1/4" Material of tube plates steel Thickness: Front 1 1/16" Back 1 3/16" Mean pitch of stays 9 5/8"

Pitch across wide water spaces 14 1/2" Working pressures by rules 182 lbs Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 7 3/4 x 1 1/2" Length as per rule 29 1/4" Distance apart 8 1/2" Number and pitch of stays in each two 9 1/2"

Working pressure by rules 196 Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler worked

separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet

holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes

If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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 casing 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	
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		Radius of do.	Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— Two top end bolts & nuts, Two bottom end bolts & nuts, Two main bearing bolts & nuts, one set of coupling bolts & nuts one set of pump valves complete & a quantity of iron bolts & nuts of various sizes.

FOR EARLE'S  
The foregoing is a correct description,  
SHIPBUILDING & ENGINEERING CO., LIMITED  
J. J. Salterbury Manufacturer.

Dates of Survey while building } During progress of work in shops -- } SECRETARY, 1909:— Dec 7, 16, 21. 1910:— Jan 8, 20. Feb 3, 17, 23, 25, 26. Mar. 2, 7, 9, 16, 21. Apr. 1, 4, 7, 8.  
} During erection on board vessel --- } 16, 22, 26, 27. May. 10, 23, 28. Jun. 6, 9. Jul. 5, 21, 25. Aug. 6, 10, 13, 17, 22, 25, 31. Sep. 6, 13, 15, 19, 21, 27. Oct. 5, 7, 15.

Total No. of visits Nov. 10, 19, Dec 21. 1912:— Jan 6, 9, 11, 16, 19, 22, 25, 29. Feb 21. Is the approved plan of main boiler forwarded herewith *yes*  
5, 9, 17, 16, 21, 23, 27. Mar. 6, 7, 9, 18, 21, 27. May 7, 9, 15, 21, 23.  
Jun. 1, 4, 7, 11, 12, 13, 20. Jul 1, 4, 9, 10, 15, 16, 17, 18, 19, 20, 22, 25. " " " donkey " " "  
Jul. 26, 29, 30. Aug. 21, 26, 27, 28.

Dates of Examination of principal parts— Cylinders 7-5-12 Slides 1-5-12 Covers 1-5-12 Pistons 7-5-12 Rods 7-5-12  
Connecting rods 7-5-12 Crank shaft 7-5-12 Thrust shaft 21-5-12 Tunnel shafts ✓ Screw shaft 27-8-12 Propeller 27-8-12  
Stern tube 7-6-12 Steam pipes tested 18-7-12 Engine and boiler seatings 7-6-12 Engines holding down bolts 17-7-12  
Completion of pumping arrangements 20-7-12 Boilers fixed 17-7-12 Engines tried under steam 20-7-12  
Main boiler safety valves adjusted 20-7-12 Thickness of adjusting washers P3/P S3/16  
Material of Crank shaft *Steel* Identification Mark on Do. 608 JB Material of Thrust shaft *Steel* Identification Mark on Do. 787 FLS  
Material of Tunnel shafts *Steel* Identification Marks on Do. 787 FLS Material of Screw shafts *Steel* Identification Marks on Do. 1002 FLS  
Material of Steam Pipes *Copper* Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boiler have been constructed under special survey in accordance with the approved plans & rules of this Society, the materials & workmanship are good. The Boiler was tested by Hydraulic pressure to 360 lbs of found sound & tight. The machinery has been properly fitted & secured on board soon completion was tried under steam & found satisfactory. These engines were completed, with the exception of fitting the pistons & the shafting, in 1910 they have now been completed opened up overhauled & reigned & examined. In my opinion they are eligible for the record + L.M.C. 8.12.*)

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 8.12.

J.W.D. 10/9/12 J.M.

The amount of Entry Fee	£ 1 : 0 :	When applied for,
Special	£ 9 : 12 :	7-9-12
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ :	24/9/12

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

Committee's Minute FRI. NOV. 1-1912  
Assigned + L.M.C. 8.12

Hull

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

MAINTENANCE CERTIFICATE

