

REPORT ON MACHINERY.

No. 70578

Port of London

Received at London Office

JUES. 3 MAR 1908

No. in Survey held at LondonDate, first Survey Apr 20 1907Last Survey Oct 28 1908

Reg. Book.

on the

Std Steamer "Helpful"(Number of Visits 29)

Master

Built at

By whom built

Tons { Gross

Net

When built

Engines made at LondonBy whom made John Stewart & Co. Ltd.when made 1908Boilers made at LondonBy whom made John Stewart & Co. Ltd.when made 1908

Registered Horse Power

Owners John Stewart & Co. Ltd.Port belonging to LondonNom. Horse Power as per Section 28 29Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted No

ENGINES, &c.—Description of Engines

Compound Surface CondensingNo. of Cylinders 2No. of Cranks 2Dia. of Cylinders 9 1/2 x 20Length of Stroke 14Revs. per minute 200

Dia. of Screw shaft

as per rule 4 5/8Material of SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube NoYes

Is the after end of the liner made water tight

in the propeller boss YesIf 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 YesLength of stern bush 20 1/2

Dia. of Tunnel shaft

as per rule 4 1/4

Dia. of Crank shaft journals

as per rule 4 1/4Dia. of Crank pin 4 1/4Size of Crank webs 8 x 3

Dia. of thrust shaft under

collars 4 1/4Dia. of screw 5 1/8Pitch of Screw 5 1/8No. of Blades 4State whether moveable NoTotal surface 10 1/2No. of Feed pumps 1Diameter of ditto 2Stroke 7Can one be overhauled while the other is at work YesNo. of Bilge pumps 1Diameter of ditto 2Stroke 7Can one be overhauled while the other is at work YesNo. of Donkey Engines 1Sizes of Pumps 4 1/4 x 5

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two 2" boreIn Holds, &c. 1 2" bore 1 1/4" 2" boreNo. of Bilge Injections 1sizes 2 1/2Connected to condenser, or to circulating pump YesIs a separate Donkey Suction fitted in Engine room & size 2"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line AboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers NoneHow are they protected YesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 7. 2. 08of Stern Tube 7. 2. 08Screw shaft and Propeller 7. 2. 08Is the Screw Shaft Tunnel watertight YesIs it fitted with a watertight door YesIs the Screw Shaft Tunnel watertight YesIs it fitted with a watertight door Yesworked from YesBOILERS, &c.—(Letter for record S.)Manufacturers of Steel J. Criville & SonsTotal Heating Surface of Boilers 680 1/2Is Forced Draft fitted NoNo. and Description of Boilers 1 MultitubularWorking Pressure 140 lbTested by hydraulic pressure to 300 lbDate of test 11. 5. 07No. of Certificate 719Can each boiler be worked separately YesArea of fire grate in each boiler 27.5 1/2

No. and Description of Safety Valves to

each boiler Two Spring loadedArea of each valve 3.98 1/2Pressure to which they are adjusted 143 lbAre they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 10"Mean dia. of boilers 9' 0"Length 8' 6"Material of shell plates SteelThickness 11/16"Range of tensile strength 28-32Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams Zig Zaglong. seams TR DBSDiameter of rivet holes in long. seams 13/16"Pitch of rivets 5 3/4"Lap of plates on width of butt straps 12 1/4"Per centages of strength of longitudinal joint 85.5%Working pressure of shell by rules 155 lbSize of manhole in shell 16" x 12"Size of compensating ring 6" x 3/4"No. and Description of Furnaces in each boiler Two plainMaterial SteelOutside diameter 2' 7"Length of plain part 6' 0"Thickness of plates 9/32"Description of longitudinal joint WeldedNo. of strengthening rings PartialWorking pressure of furnace by the rules 165 lbCombustion chamber plates: Material SteelThickness: Sides 9/16"Back 9/16"Top 9/16"Bottom 9/16"Pitch of stays to ditto: Sides 8"Back 8 1/2 x 8"Top 7 1/2"Material of stays SteelDiameter at smallest part 1/4"Area supported by each stay 67 1/2Working pressure by rules 169 lbEnd plates in steam space: PartialMaterial SteelThickness 27/32"Pitch of stays 14 x 15"How are stays secured 8 NutsDiameter at smallest part 3/8"Area supported by each stay 210 1/2Working pressure by rules 279 lbMaterial of Front plates at bottom SteelThickness 27/32"Greatest pitch of stays 13 x 8"Working pressure of plate by rules 190 lbDiameter of tubes 3 1/4"Pitch of tubes 4 1/2 x 4 1/8"Pitch across wide water spaces 13 1/4"Working pressures by rules 214 lbGirders to Chamber tops: Material SteelDepth and thickness of girder at centre 7" x 1 1/2"Length as per rule 20"Distance apart 7 1/2"Number and pitch of stays in each NoneWorking pressure by rules 320 lbSuperheater or Steam chest; how connected to boiler YesCan the superheater be shut off and the boiler worked separately YesDiameter YesLength YesThickness of shell plates YesMaterial YesDescription of longitudinal joint YesDiam. of rivet holes YesPitch of rivets YesWorking pressure of shell by rules YesIf stiffened with rings YesDistance between rings YesWorking pressure by rules YesEnd plates: Thickness YesHow stayed YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear Yes

W1213-0242

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 end bolts, two bottom end bolts, two main bearing bolts, 1 set of coupling bolts, a set of feed & discharge pump valves, and a quantity of assorted nuts, bolts, and iron.

JOHN STEWART & SON, LTD.

The foregoing is a correct description,

Manufacturer.

J. F. Polson

Dates of Survey while building _____ During progress of work in shops _____ During erection on board vessel _____ Total No. of visits _____

1907 Apr 2 3 4 5 7 9 10 11 13 16 18 19 23 25 27. Oct 1 3 5 15 17 20

1908 Jan 11 23 Feb 1 3 7 27 28

Is the approved plan of main boiler forwarded herewith *ditto* *S.S. 400/1*.

Dates of Examination of principal parts—Cylinders 2.9.07 Slides 5.9.07 Covers 3.9.07 Pistons 2.9.07 Rods 5.9.07

Connecting rods 5.9.07 Crank shaft 4.9.07 Thrust shaft 4.9.07 Tunnel shafts ✓ Screw shaft 7.2.08 Propeller 7.2.08

Stern tube 7.2.08 Steam pipes tested 31.1.08 Engine and boiler seatings 1.10.07 13.10.07 Engines holding down bolts 11.11.07

Completion of pumping arrangements 3.2.08 Boilers fixed 23.9.07 Engines tried under steam 28.2.08

Main boiler safety valves adjusted 28.2.08 Thickness of adjusting washers 3/8"

Material of Crank shaft *Steel* Identification Mark on Do. *S* Material of Thrust shaft *Steel* Identification Mark on Do. *S*

Material of Tunnel shafts ✓ Identification Marks on Do. Material of Screw shafts *Steel* Identification Marks on Do. *S*

Material of Steam Pipes *Copper* Test pressure 280lb.

General Remarks (State quality of workmanship, opinions as to class, &c. *This vessel's Machinery has been built under Special Survey and is accordance with the Rules. The workmanship is good and in my opinion the vessel is eligible for the record L.M.C. 2.08.*

Note. The Boiler was made for 150lb. working pressure but owing to the diameter of the flapping the pressure has been reduced to 140lb.

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 2.08.*

J.F. 23.3.08

J.F.
23.3.08

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for, _____

Special £ 3 : 16 : 0 21.3.1908

Donkey Boiler Fee £ 4 : 4 : 0

Travelling Expenses (if any) £ : : 4.4.0 paid 19.3.1908

When received, *4.4.0 paid 19.3.1908*

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

Committee's Minute

1UES 24 MAR 1908

Assigned

+ L.M.C. 2.08.

MACHINERY CERTIFICATE WRITTEN.



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