

REPORT ON MACHINERY.

11,259

Port of Shull

Received at London Office **TUES. 24 AUG 1897**

No. in Survey held at Shull Date, first Survey Mar. 17th Last Survey Aug 7th 1897

Reg. Book. 108 on the Iron Steam Trawler Indian Empire (Number of Visits 21)

Master Shull Built at Shull By whom built Cook, Weller & Hemmell When built 1897
Tons { Gross 182
Net 65

Engines made at Shull By whom made Chas & Holmes & Co when made 1897

Boilers made at Shull By whom made Chas & Holmes & Co when made 1897

Registered Horse Power 60 Owners Cargill & Sawling Ltd Port belonging to Shull

Nom. Horse Power as per Section 28 64 Is Electric Light fitted

ENGINES, &c.—Description of Engines Single Compound No. of Cylinders Three No. of Cranks Three

Diameter of Cylinders 13" 21" 34" Length of Stroke 24 Revolutions per minute 110 Diameter of Screw shaft as per rule 6.25
as fitted 6.116"

Diameter of Tunnel shaft as per rule 6.0 Diameter of Crank shaft journals 6.575" Diameter of Crank pin 6.575" Size of Crank webs 9" 4 1/4"
as fitted 6.36"

Diameter of screw 8" 6" Pitch of screw 10" 6" 6" 11" 6" No. of blades 4 State whether moveable no Total surface 2629 sq ft

No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 13 1/4" Can one be overhauled while the other is at work -

No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 13 1/4" Can one be overhauled while the other is at work -

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

In Engine Room one 2" In Holds, &c. one 2"

Direct suction in the Engine Bilge & hold and discharge on deck

No. of bilge injections one size 3 1/2" Connected to condenser, or to circulating pump jump Is a separate donkey suction fitted in Engine room & size 4 cwt

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 -

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 suction to forward How are they protected wood cased

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock now new Is the screw shaft tunnel watertight in tunnel

Is it fitted with a watertight door - worked from -

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 1087 sq ft Is forced draft fitted no

No. and Description of Boilers one cyl^{ic} shell Working Pressure 170 lb Tested by hydraulic pressure to 340 lb

Date of test 2/17/97 Can each boiler be worked separately - Area of fire grate in each boiler 254 sq ft No. and Description of safety valves to each boiler two spring loaded

Area of each valve 3.989 Pressure to which they are adjusted 175 lb Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean diameter of boilers 11" 6"

Length 9" 6" Material of shell plates steel Thickness 1" Description of riveting: circum. seams all in lap long. seams all shop 3/16"

Diameter of rivet holes in long. seams 1/32" Pitch of rivets 7" Lap of plates or width of butt straps 15"

Per centages of strength of longitudinal joint rivets 88.74% Working pressure of shell by rules 173 lb Size of manhole in shell 16" 12"
plate 85.26%

Size of compensating ring 6" 1" No. and Description of Furnaces in each boiler two Holmes Material steel Outside diameter 44"

Length of plain part top 15" Thickness of plates crown 19/32" Description of longitudinal joint welded No. of strengthening rings 4
bottom 15" bottom 19/32"

Working pressure of furnace by the rules 172 lb Combustion chamber plates: Material steel Thickness: Sides 2 1/32" Back 9/16" Top 9/16" Bottom 2 1/32"

Pitch of stays to ditto: Sides 7 3/4" Back 7 3/8" Top 7 7/8" If stays are fitted with nuts or riveted heads nut Working pressure by rules 176 lb

Material of stays steel Diameter at smallest part 1 1/2" Area supported by each stay 7 3/8" x 7 1/2" Working pressure by rules 245 lb End plates in steam space:

Material steel Thickness 1" Pitch of stays 15 3/4" How are stays secured all nut Working pressure by rules 190 lb Material of stays steel

Diameter at smallest part 2 19/32" Area supported by each stay 15 3/4" Working pressure by rules 191 lb Material of Front plates at bottom steel

Thickness 27/32" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 12" Working pressure of plate by rules 170 lb

Diameter of tubes 3 3/4" Pitch of tubes 4 3/4" Material of tube plates steel Thickness: Front 27/32" Back 19/16" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14" Working pressures by rules 170 lb Girders to Chamber tops: Material iron Depth and thickness of girder at centre 7 3/4" x 13 1/4" Length as per rule 29 3/16" Distance apart 7 1/8" Number and pitch of Stays in each 7 1/2"

Working pressure by rules 187 lb Superheater or Steam chest; how connected to boiler - 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 holes -

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

If 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 -



HVL44-0277

DONKEY BOILER— Description No Donkey Boiler

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

SPARE GEAR. State the articles supplied:— The top end bolts. Two bottom end bolts. Two main bearing bolts. One set coupling bolts. One set feed pump valves. One set bridge pump valves. One set chest valves. Safety valve spring etc
The vessel efficient with mast and sail as a steamer.

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

During progress of work in shops - 1897: Mar 17, 26 Apr 7, 15, 28 May 4, 14, 21, 25. June 3, 11, 18, 25, 29 July 5, 7, 9, 12, 20
During erection on board vessel - Aug 6, 7
Total No. of visits 21

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

The Machinery and Boiler of this Steam Steamer have been constructed under special survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notification + L.M.C. 8.97. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.97.

J.S.
24. 8. 97

The amount of Entry Fee. £ 1 : - : -
Special £ 9 : 12 : -
Donkey Boiler Fee £ - : - : -
Travelling Expenses (if any) £ - : - : -
When applied for, 23/8/97
When received, 30/8/97

Committee's Minute FEB 27 AUG 1897

Assigned + L.M.C. 8.97

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



Vertical text on the right margin including 'Signature', 'No. of Engines', 'Under T', 'Closed-i', 'Space', 'Peep', 'Forec', 'Round', 'Other', 'Deductio', 'Na', 'No. of Ov', 'Name, R', 'Dated', 'W B & L (439w)'

Vertical text on the left margin: Certificate (if required) to be sent to Hull