

REPORT ON MACHINERY.

No. 18248

Port of Hull

Received at London Office

SAT. 25 AUG 1906

No. in Survey held at Hull

Date, first Survey Dec. 11/05

Last Survey 11 Aug

1906

Reg. Book.

1039 on the Screw Steamer "Brutus"

(Number of Visits 26)

Master

Built at Hull

By whom built Barlow, S. & C. Co. Ltd.

Tons Gross 311

Net 119

When built 1906

Engines made at Hull

By whom made Amos & Smith

when made 1906

Boilers made at do

By whom made do

when made 1906

Registered Horse Power

Owners Hullers' Steam Fishing Co. Port belonging to Hull

Nom. Horse Power as per Section 28 96

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 14", 23", 38"

Length of Stroke 27"

Revs. per minute 112

Dia. of Screw shaft

as per rule 8.1"

Material of Steel

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 ✓

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 3'-4"

Dia. of Tunnel shaft as per rule 7.18"

as fitted 7.4"

Dia. of Crank shaft journals as per rule 7.54"

as fitted 8"

Dia. of Crank pin 8"

Size of Crank webs 12 1/2" x 5"

Dia. of thrust shaft under

collars 8"

Dia. of screw 10'-0"

Pitch of Screw 11'-6" to 12'-6"

No. of Blades 4

State whether moveable No

Total surface 30.6 sq. ft.

No. of Feed pumps 2

Diameter of ditto 2 5/8"

Stroke 18"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 2 5/8"

Stroke 18"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines One

Sizes of Pumps 6" x 4 1/4" x 6"

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

In Engine Room One 2 1/4" dia.

In Holds, &c. One 2 1/4" main hold, one 2" fore

hold. Ejector suction from all bilges & discharge on deck.

No. of Bilge Injections 1 sizes 4

Connected to condenser, or to circulating pump Pumps a separate Donkey Suction fitted in Engine room & size Yes 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 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 Hold 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 23/5/06

of Stern Tube 23/5/06

Screw shaft and Propeller 23/5/06

Is the Screw Shaft Tunnel watertight None

Is it fitted with a watertight door ✓

worked from ✓

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel

Zschewalzywerk Schulz Knaudt.

Total Heating Surface of Boilers 1665 sq. ft.

Forced Draft fitted No

No. and Description of Boilers One S.E. cyl. Hull

Working Pressure 185 lbs

Tested by hydraulic pressure to 370 lbs

Date of test 19.6.06

No. of Certificate 1479

Can each boiler be worked separately ✓

Area of fire grate in each boiler 5.5 sq. ft.

No. and Description of Safety Valves to

each boiler Two direct spring

Area of each valve 5.93 sq. in.

Pressure to which they are adjusted 190 lbs

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 5"

Mean dia. of boilers 14'-0"

Length 10'-7 1/2"

Material of shell plates Steel

Thickness 1 5/32"

Range of tensile strength 28-32 tons

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams B.R. Lap

long. seams B.R. S. Rivet

Diameter of rivet holes in long. seams 1 1/32"

Pitch of rivets 8 1/2"

Gap of plates or width of butt straps 18 3/4"

Per centages of strength of longitudinal joint rivets 95.1

plate 85.3

Working pressure of shell by rules 185 lbs

Size of manhole in shell 16" x 12"

Size of compensating ring 40" x 30" x 1 1/2"

No. and Description of Furnaces in each boiler Three plain

Material Steel

Outside diameter 41 1/32"

Length of plain part top 5'-10 1/2"

Thickness of plates crown 4'-9"

bottom 6'-4"

Description of longitudinal joint Welded

No. of strengthening rings ✓

Working pressure of furnace by the rules 192 lbs

Combustion chamber plates: Material Steel

Thickness: Sides 11/16"

Back 11/16"

Top 11/16"

Bottom 11/16"

Pitch of stays to ditto: Sides 8 3/4" x 7 1/2"

Back 8" x 8 1/4"

Top 7 1/8" x 7 3/4"

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 247 lbs

Material of stays Steel

Diameter at smallest part 1 1/2"

Area supported by each stay 55.2

Working pressure by rules 214 lbs

End plates in steam space:

Material Steel

Thickness 1 1/16"

Pitch of stays 18" x 15 1/2"

How are stays secured + screwed into end plates.

Working pressure by rules 191 lbs

Material of stays Steel

Area at smallest part 6.1 sq. in.

Area supported by each stay 279

Working pressure by rules 218 lbs

Material of Front plates at bottom Steel

Thickness 15/16"

Material of Lower back plate Steel

Thickness 15/16"

Greatest pitch of stays 14"

Working pressure of plate by rules 230 lbs

Diameter of tubes 3 1/4"

Pitch of tubes 4 1/2" x 4 3/4"

Material of tube plates Steel

Thickness: Front 15/16"

Back 27/32"

Mean pitch of stays 9 1/4"

Pitch across wide water spaces 14"

Working pressures by rules 195 lbs

Girders to Chamber tops: Material Iron

Depth and

thickness of girder at centre 9 1/2" x 1 3/4"

Length as per rule 2-10

Distance apart 7 3/4"

Number and pitch of stays in each 3 @ 7 1/2"

Working pressure by rules 200 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

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 ✓

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	First 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,

Manufacturer.

Dates of Survey while building	During progress of work in shops—	1905: Dec 11. 1906: Apr 2. 11. 19. May 3. 9. 16. 17. 23. 24. 30.	MANAGER per J.P. Jun 18. 19
	During erection on board vessel—	Jun 21. 26. 28. July 2. 4. 5. 10. 14. 17. 18. 20. 27. Aug 11	
	Total No. of visits	26.	

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

Dates of Examination of principal parts—	Cylinders	30/5/06	Slides	18/6/06	Covers	18/6/06	Pistons	30/5/06	Rods	30/5/06	
Connecting rods	18/6/06	Crank shaft	17/5/06	Thrust shaft	30/5/06	Tunnel shafts	✓	Screw shaft	16/5/06	Propeller	17/5/06
Stern tube	17/5/06	Steam pipes tested	10/7/06	Engine and boiler seatings	23/5/06	Engines holding down bolts	2/7/06				
Completion of pumping arrangements	18/7/06	Boilers fixed	2/7/06	Engines tried under steam	18/7/06						
Main boiler safety valves adjusted	4/8/06	Thickness of adjusting washers	F 1/4" A 1/4"								
Material of Crank shaft	Steel	Identification Mark on Do.	LLoyds 3353 M.H. 3.06	Material of Thrust shaft	Steel	Identification Mark on Do.	LLoyds 2754 K.H. 3.06				
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	Steel	Identification Marks on Do.	LLoyds 5159 J.M. 3.06				
Material of Steam Pipes	Solid drawn copper	Test pressure	370 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 + LMC 8.06 in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD + LMC 8.06.

The amount of Entry Fee.	£ 1 : - :-	When applied for.	24/8/1906
Special	£ 14 . 8 :-	When received.	31.8.1906
Donkey Boiler Fee	£ - : - :-		
Travelling Expenses (if any)	£ - : - :-		

Committee's Minute

TUES. 28 AUG 1906

Assigned

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



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MINISTRY CERTIFICATE
WRITTEN.