

## REPORT ON MACHINERY.

No. 19630

WED. 4 DEC 1907

Port of *Hull*

Received at London Office

19

No. in Survey held at

*Hull*

Date, first Survey

*June 22<sup>nd</sup>*

Last Survey

*13<sup>th</sup> Nov*

1907

Reg. Book.

(Number of Visits *26*)54<sup>th</sup> on the*Steel S. S. Botanic*

Master

Built at

*Hull*

By whom built

*Messrs*

Engines made at

By whom made

*Earle's & Co*

when made

*1907*

Boilers made at

By whom made

when made

*1907*

Registered Horse Power

*89*

Owners

*City Steam Fishing Co. Ltd.*

Port belonging to

*Hull*

Nom. Horse Power as per Section 28

*88-49*

Is Refrigerating Machinery fitted for cargo purposes

*No*

Is Electric Light fitted

*No*

## ENGINES, &amp;c.—Description of Engines

*Triple Expansion*

No. of Cylinders

*3*

No. of Cranks

*3*

Dia. of Cylinders

*13" ~ 22" ~ 37"*

Length of Stroke

*27"*

Revs. per minute

*105*

Dia. of Screw shaft

as per rule *7-8"*as fitted *8-4"*

Material of screw shaft

*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

*length*

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 1/2"*

Dia. of Thrust shaft

as per rule *7-9"*as fitted *7-5"*

Dia. of Crank shaft journals

as per rule *7-3 1/2"*as fitted *7-7 1/2"*

Dia. of Crank pin

*7 3/4"*

Size of Crank webs

*14 1/2" x 4 1/2"*

Dia. of thrust shaft under

collars

*7 3/4"*

Dia. of screw

*9" ~ 6"*

Pitch of Screw

*11" ~ 9"*

No. of Blades

*4*

State whether moveable

*No*

Total surface

*29 sq ft*

No. of Feed pumps

*2*

Diameter of ditto

*2 1/2"*

Stroke

*14"*

Can one be overhauled while the other is at work

*Yes*

No. of Bilge pumps

*2*

Diameter of ditto

*2 1/2"*

Stroke

*14"*

Can one be overhauled while the other is at work

*Yes*

No. of Donkey Engines

*Two*

Sizes of Pumps

*one 5" centrifugal, one 6" x 3" x 6"*

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

In Engine Room

*One 2" and one 3"*

In Holds, &amp;c.

*One each 2" to aft slush well to**forward slush well, to below fish room, to aft Comp. & ejector suction from all parts*

No. of Bilge Injections

*1*

sizes

*3 1/2"*

Connected to condenser, or to circulating pump

*Yes*

Is a separate Donkey Suction fitted in Engine room &amp; size

*Yes 3"*

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

*0*

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

*9.11.07*

of Stern Tube

*9.11.07*

Screw shaft and Propeller

*9.11.07*

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 *Messrs Beardmore & Messrs Colville*

Total Heating Surface of Boilers

*1463 sq ft*

Is Forced Draft fitted

*No*

No. and Description of Boilers

*One cyl. Muesir*

Working Pressure

*200 lbs*

Tested by hydraulic pressure to

*400 lbs*

Date of test

*26.10.07*

No. of Certificate

*1607*

Can each boiler be worked separately

Area of fire grate in each boiler

*41 sq ft*

No. and Description of Safety Valves to

each boiler

*Two Spring*

Area of each valve

*4.9 sq in*

Pressure to which they are adjusted

*205 lbs*

Are they fitted with easing gear

*Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork

*7 1/2"*

Mean dia. of boilers

*13" ~ 6"*

Length

*10" ~ 3"*

Material of shell plates

*Steel*

Thickness

*1 3/16"*

Range of tensile strength

*24 ~ 32 tons*

Are the shell plates welded or flanged

*No*

Descrip. of riveting: cir. seams

*L.O.*

long. seams

*O.B.S.I.C.*

Diameter of rivet holes in long. seams

*1 1/4"*

Pitch of rivets

*8 7/8"*

Lap of plates or width of butt straps

*18 1/2"*

Per centages of strength of longitudinal joint

rivets *88.44*plate *85.6*

Working pressure of shell by rules

*200 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

*3 plain*

Material

*Steel*

Outside diameter

*3' ~ 2"*

Length of plain part

top *6' ~ 5"*

bottom

Thickness of plates

orow *4.9*bottom *6.4*

Description of longitudinal joint

*Welded*

No. of strengthening rings

*0*

Working pressure of furnace by the rules

*202 lbs*

Combustion chamber plates: Material

*Steel*

Thickness: Sides

*3 1/2"*

Back

*3 1/2"*

Pitch of stays to ditto: Sides

*9 1/2" x 8"*

Back

*10" x 8 1/2"*

Top

*8 1/2" x 7 1/2"*

If stays are fitted with nuts or riveted heads

*Nuts*

Working pressure by rules

*207 lbs*

Material of stays

*Steel*

Diameter at smallest part

*1 3/4"*

Area supported by each stay

*102 sq in*

Working pressure by rules

*211 lbs*

End plates in steam space:

Material

*Steel*

Thickness

*1 3/16"*

Pitch of stays

*18" x 17"*

How are stays secured

*O. Nuts*

Working pressure by rules

*206 lbs*

Material of stays

*Steel*

Diameter at smallest part

*2 3/8"*

Area supported by each stay

*306 sq in*

Working pressure by rules

*211 lbs*

Material of Front plates at bottom

*Steel*

Thickness

*3 1/32"*

Material of Lower back plate

*Steel*

Thickness

*1 5/16"*

Greatest pitch of stays

*13" x 3 1/4"*

Working pressure of plate by rules

*226 lbs*

Diameter of tubes

*3 1/4"*

Pitch of tubes

*4 1/4" ~ 4 3/4"*

Material of tube plates

*Steel*

Thickness: Front

*3 1/32"*

Back

*7/8"*

Mean pitch of stays

*9 3/8"*

Pitch across wide water spaces

*14"*

Working pressures by rules

*208 lbs*

Girders to Chamber tops: Material

*Steel*

thickness of girder at centre

*9 1/2" x 1 3/4"*

Length as per rule

*2' 9 1/2"*

Distance apart

*8 1/2"*

Number and pitch of stays in each

*3 ~ 7 1/2"*

Working pressure by rules

*227 lbs*

Superheater or Steam chest; how connected to boiler

Can the superheater



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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air, circulating, feed and bilge pump valves, and a quantity of assorted bolts nuts etc

The foregoing is a correct description,

*F. J. Palethorpe* Manufacturer.

Dates of Survey while building	{	During progress of work in shops - -	1907:—Jun 12. 26. 30. Aug 23. 30. Sep 4. 9. 12. 19. 24. Oct 7. 8. 9. 10. 18. 26.
		During erection on board vessel - -	Oct 28. 31 Nov 1. 4. 5. 8. 9. 11. 12. 13.
		Total No. of visits	26

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts—	Cylinders 10. 10. 07	Slides 18. 10. 07	Covers 24. 9. 07	Pistons 10. 10. 07	Rods 18. 10. 07
Connecting rods 18. 10. 07	Crank shaft 24. 9. 07	Thrust shaft 24. 9. 07	Tunnel shafts —	Screw shaft 7. 10. 07	Propeller 24. 9. 07
Stern tube 24. 9. 07	Steam pipes tested 31. 10. 07	Engine and boiler seatings 26. 10. 07	Engines holding down bolts 5. 11. 07		
Completion of pumping arrangements 12. 11. 07	Boilers fixed 5. 11. 07	Engines tried under steam 13. 11. 07			
Main boiler safety valves adjusted 5. 11. 07	Thickness of adjusting washers $\frac{5}{16}$ $\frac{11}{32}$				

Material of Crank shaft Steel	Identification Mark on Do. 1963ATG	Material of Thrust shaft Steel	Identification Mark on Do. 109GAH
Material of Tunnel shafts —	Identification Marks on Do. —	Material of Screw shafts Steel	Identification Marks on Do. 109GAH
Material of Steam Pipes Solid drawn Copper	Test pressure 400 lbs per sq inch		

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boiler of this vessel have been constructed under special survey in accordance with the Rules, the materials and workmanship are good. The boiler tested by hydraulic pressure, and with the engines placed on board, and tested under steam, they are now in good order, and safe working condition and respectfully submitted, as being eligible in my opinion to be classed, with the notation of \* L.M.C. 11.07 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 11.07

The amount of Entry Fee..	£ 1 : : :	When applied for,	3/12/1907
Special .. .. .	£ 13 : 7 : :	When received,	15/2/1908
Donkey Boiler Fee .. .. .	£ . : : :		
Travelling Expenses (if any) £	. : : :		

Committee's Minute

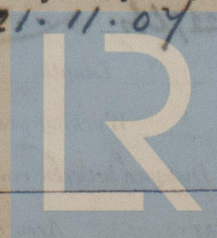
FRI. 6 DEC 1907

Assigned

+ L.M.C. 11.07

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

21. 11. 07



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Lloyd's Register  
Foundation

MACHINERY CERTIFICATE  
WRITTEN.