

## REPORT ON MACHINERY.

No. 28838

Date of writing Report 23-8-15

When handed in at Local Office

23-8-15 Port of Hull

Received at London Office

TUE. 28. SEP. 1915

No. in Survey held at Hull

Date, First Survey Mar. 11/15

Last Survey

19-8-1915

Reg. Book.

Lupt 4 on the steel screw steamer Willorox

(10112)

(Number of Visits 27)

Master

Built at Leby

By whom built Cochrane &amp; Sons Ltd

Tons Gross 327

Net 171

When built 1915-8

Engines made at Hull

By whom made C. D. Holmes &amp; Co Ltd

when made 1915-8

Boilers made at Hull

By whom made C. D. Holmes &amp; Co Ltd

when made 1915-8

Registered Horse Power

Owners Orient Steam Fishing Co Ltd

Port belonging to Grimsby

Nom. Horse Power as per Section 28 90

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

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

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 13 1/2 - 23 - 37

Length of Stroke 26

Revs. per minute

Dia. of Screw shaft as per rule 7.96

Material of screw shaft Iron

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 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

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush 2-11 1/2

Dia. of Tunnel shaft as per rule 7.15

Dia. of Crank shaft journals as per rule 7.5

Dia. of Crank pin 7 3/4

Size of Crank webs 5 x 14 1/2

Dia. of thrust shaft under

collars 7 3/4

Dia. of screw 9-7 1/2

Pitch of Screw

11-0

No. of Blades 4

State whether moveable no

Total surface 33 1/2

No. of Feed pumps one

Diameter of ditto 2 3/4

Stroke 14 3/4

Can one be overhauled while the other is at work yes

69.7

No. of Bilge pumps one

Diameter of ditto 2 3/4

Stroke 14 3/4

Can one be overhauled while the other is at work yes

No. of Donkey Engines two + 3 extra

Sizes of Pumps 6 1/2 x 6 deep; 6 3/2 x 6 1/2

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

In Engine Room two 2" dia

also connected to yacht

In Holds, &amp;c. one 2" dia in each compartment

No. of Bilge Injections one

size 3 1/2

Connected to condenser, or to circulating pump pump

Is a separate Donkey Suction fitted in Engine room &amp; size 3" extra

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 Forward suction

How are they protected strong wooden casings

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 11-5-15

of Stern Tube 11-5-15

Screw shaft and Propeller 11-5-15

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

OILERS, &amp;c.—(Letter for record S)

Manufacturers of Steel Stewarts &amp; Lloyds

Total Heating Surface of Boilers 1502 1/2

Is Forced Draft fitted no

No. and Description of Boilers one single ended

Working Pressure 200 lbs

Tested by hydraulic pressure to 400 lbs

Date of test 21-5-15

No. of Certificate 3082

Can each boiler be worked separately

Area of fire grate in each boiler 44 1/4

No. and Description of Safety Valves to

each boiler Two spring loaded

Area of each valve 4.9

Pressure to which they are adjusted 205

Are they fitted with easing gear yes

Smallest distance between boilers on uptakes and bunkers on woodwork 6" lagged

Mean dia. of boilers 168

Length 10-8

Material of shell plates S

Thickens 1 1/4

Range of tensile strength 28-32 1/2

Are the shell plates welded or flanged no

Descrip. of riveting: cir. seams double

long. seams J.R.D.B.I

Diameter of rivet holes in long. seams 1 7/32

Pitch of rivets 8 3/32

Lap of plates or width of butt straps 17 1/2

Per centages of strength of longitudinal joint

rivets 85.7

plate 84.9

Working pressure of shell by rules 200

Size of manhole in shell 16 x 12

Size of compensating ring 7 x 1 1/4

No. and Description of Furnaces in each boiler 3 Plain

Material S

Outside diameter 41

Length of plain part top 27 1/2

Thickness of plates crown 1 1/16

Description of longitudinal joint welded

No. of strengthening rings one ft

Working pressure of furnace by the rules 201

Combustion chamber plates: Material S

Thickness: Sides 3/4

Back 3/4

Top 3/4

Bottom 1 1/8

Pitch of stays to ditto: Sides 9 x 8 3/4

Back 9 1/2 x 8 1/2

Top 8 3/4 x 8 3/4

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 246

Material of stays S

Diameter at smallest part 2 40

Area supported by each stay 99

Working pressure by rules 218

End plates in steam space:

Material S

Thickness 1 1/4

Pitch of stays 18 x 17

How are stays secured D.H. &amp; U.

Working pressure by rules 241

Material of stays S

Diameter at smallest part 7 5/8

Area supported by each stay 306

Working pressure by rules 255

Material of Front plates at bottom S

Thickness 1 1/8

Material of Lower back plate S

Thickness 1 1/8

Greatest pitch of stays 16 x 8 1/2

Working pressure of plate by rules 270

Diameter of tubes 3 1/2

Pitch of tubes 5 x 5 1/2

Material of tube plates S

Thickness: Front 1 1/2

Back 1

Mean pitch of stays 12

Pitch across wide water spaces 14 1/2

Working pressures by rules 216

Girders to Chamber tops: Material S

Depth and

Thickness of girder at centre 10 1/2 x 1 1/2

Length as per rule 38 1/3

Distance apart 8 1/2

Number and pitch of stays in each three 8 1/4

Working pressure by rules 202

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

yes

yes

yes

yes

yes

yes

yes

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Lloyd's Register Foundation



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

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 impeller, one impeller shaft, one set of feed, bilge & air pump valves, one set of donkey pump valves, one train & one donkey check valve, Two safety valve springs 3 escape valve springs, one set of piston studs & nuts, & a quantity of iron bolts & nuts of various sizes.*

The foregoing is a correct description,

*J. Arthur Holmes*

DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1915: - Mar 11. 24 31 Apr 9. 24. May 6. 7. 11. 18. 21. 27. Jun 3. 8. 14. 16. 25. 29. Jul 8. 14. 16. 19.  
During erection on board vessel - - 22. 26. 27 Aug 5. 16. 19.  
Total No. of visits 27

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

" " " donkey " " " *✓*

Dates of Examination of principal parts - Cylinders 27-5-15 Slides 8-6-15 Covers 3-6-15 Pistons 4-6-15 Rods 25-6-15  
Connecting rods 25-6-15 Crank shaft 14-6-15 Thrust shaft 29-6-15 Tunnel shafts *✓* Screw shaft 6-5-15 Propeller 11-5-15  
Stern tube 11-5-15 Steam pipes tested 19-7-15 Engine and boiler seatings 11-5-15 Engines holding down bolts 19-7-15  
Completion of pumping arrangements 19-8-15 Boilers fixed 19-7-15 Engines tried under steam 19-8-15  
Main boiler safety valves adjusted 27-7-15 Thickness of adjusting washers *7 1/32 9 1/4*

Material of Crank shaft *Iron* Identification Mark on Do. *1466 J.G.H.* Material of Thrust shaft *Iron* Identification Mark on Do. *6857 J.G.H.*

Material of Tunnel shafts *✓* Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. *1449 J.G.H.*

Material of Steam Pipes *copper (solid drawn)* Test pressure *400 lbs.*

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this society, the boiler & steam pipes have been tested as above & found sound & tight. The machinery has been properly fitted & secured on board & on completion was tried under steam under full working conditions & found to work satisfactorily, the safety valves have been adjusted under steam & tested for accumulation which did not exceed 20 lbs. In my opinion the vessel is eligible for the vessel + L.M.C. 8, 15.*

Please return plan of boiler for dealing with sister vessels.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 8.15.

The amount of Entry Fee ... £ 1 : 0 :  
Special ... £ 13 : 10 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ - : 8 - 2

When applied for,

27-9-1915

When received,

30/9/1915 1/10/15

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

Committee's Minute FRI. 1-OCT. 1915

Assigned

*LMC 8.15*

MADE BY CERTIFIED  
NOTES



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