

REPORT ON MACHINERY.

No. 6187

Port of Belfast

Received at London Office WED. 10 OCT 1906

No. in Survey held at Belfast

Date, first Survey 15 March

Last Survey 2 Oct 1906

Reg. Book.

on the S.S. Star of Japan

(Number of Visits 56)

Master F. Ulyatt

Built at Belfast

By whom built Wortman Clark & Co

Tons Gross 6235

Net 3999

When built 1906

Engines made at Belfast

By whom made

- when made 1906

Boilers made at

By whom made

when made

Registered Horse Power

Owners Star Line L.P. Conry

Belonging to Belfast

Nom. Horse Power as per Section 28 601

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 27"-46"-78"

Length of Stroke 54"

Revs. per minute 65

Dia. of Screw shaft

as per rule 16.18

Material of S. 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 68"

Dia. of Tunnel shaft

as per rule 14.55

Dia. of Crank shaft journals

as per rule 15.88

Dia. of Crank pin 15.5"

Size of Crank webs 29 1/2 x 10 1/2

of thrust shaft under collars 15 1/2"

Dia. of screw 19.6

Pitch of Screw 19.6

No. of Blades 4

State whether moveable Yes

Total surface 110 sq. ft.

No. of Feed pumps 2

Diameter of ditto 5"

Stroke 27"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 6"

Stroke 27"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 6

Sizes of Pumps

10 1/2 x 8 x 21
7 x 5 x 6
8 x 10 x 14
4 x 4 x 5
3 1/2 x 2 1/2 x 4

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

In Engine Room 4-3 1/2"

No. of Bilge Injections 1

sizes 9"

Connected to condenser, or to circulating pump Yes

Is a separate Donkey Suction fitted in Engine room & size Yes - 3 1/2"

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 Both

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 Fore hold suction

How are they protected Wood 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 21-8-06 of Stern Tube 21-8-06 Screw shaft and Propeller 21-8-06

Is the Screw Shaft Tunnel watertight Stated to be

it fitted with a watertight door Yes worked from Top platform E. Room

BOILERS, &c.—(Letter for record S.)

Manufacturers of Steel Lucas, Menzies, Vetterli & Co. Glasgow & Co. Clyde

Total Heating Surface of Boiler 8356 sq. ft.

Forced Draft fitted Yes

No. and Description of Boilers 4 Single End Cylind.

Working Pressure 200 lbs

Tested by hydraulic pressure to 400 lbs

Date of test 27-8-06

No. of Certificate 385

Can each boiler be worked separately Yes

Area of fire grate in each boiler 52 sq. ft.

No. and Description of Safety Valves to each boiler 2- Direct Spring

Smallest distance between boilers or uptakes and bunkers or woodwork About 20"

Mean dia. of boilers 13'-9"

Length 11'-6" Material of shell plates Steel

Thickness 1 1/2"

Range of tensile strength 28-32 tons are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Lap Riv.

long. seams Butt Riv.

Diameter of rivet holes in long. seams 1 1/2"

Pitch of rivets 9 1/2"

Lap of plates or width of butt straps 20 1/2"

Per centages of strength of longitudinal joint rivets 88%

plate 85%

Working pressure of shell by rules 229 lbs

Size of manhole in shell 16" x 12"

Size of compensating ring McNeill's

No. and Description of Furnaces in each boiler 3-Morrison's

Material Steel

Outside diameter 43 1/4"

Length of plain part top 7'-3 1/2"

Thickness of plates bottom 7'-6 1/4"

Description of longitudinal joint Weld

No. of strengthening rings 5

Working pressure of furnace by the rules 226 lbs

Combustion chamber plates: Material Steel

Thickness: Sides 3/2"

Back 3/4"

Top 3/2"

Bottom 7/8"

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

Back 8 1/2 x 7 1/2"

Top 8 x 6 1/2"

If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 204 lbs

Material of stays Steel

Diameter at smallest part 1 1/2"

Area supported by each stay 66 sq. in.

Working pressure by rule 209 lbs

plates in steam space: Material Steel

Material Steel

Thickness 1 1/2"

Pitch of stays 6 1/2 x 15"

How are stays secured Nuts & Washers

Working pressure by rule 202 lbs

Material of Front plates at bottom Steel

Diameter at smallest part 2 7/8"

supported by each stay 44 7/8 sq. in.

Working pressure by rule 203 lbs

Material of Lower back plate Steel

Thickness 1"

Material of Lower back plate Steel

Thickness 3/2"

Greatest pitch of stays 15 1/2"

Working pressure of plate by rule 206 lbs

Material of tube plates Steel

Diameter of tube 2 1/2"

Pitch of tube 3 1/4 x 3 5/8"

Material of tube plates Steel

Thickness: Front 1"

Back 1 1/8"

Mean pitch of stays 7 1/2 x 7 1/4"

Pitch across wide water spaces 1 3/4"

Working pressures by rules 209 lbs

Girders to Chamber tops: Material Steel

Depth and thickness of girder at centre 8 3/4 x (7/8 x 2)

Length as per rule 30 1/2"

Distance apart 8 x 7"

Number and pitch of stays in each 3-6 3/4"

Working pressure by rules 212 lbs

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

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 of end plates

Area of safety valves to superheater

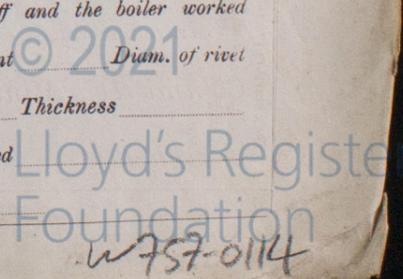
Working pressure by rules

End plates: Thickness

How stayed

Are they fitted with easing gear

Working pressure of end plates



W 757-0114

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 _____

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: 2 Propeller blades; pair Cranks pin bushes; pair Cross head bushes; fan spindle for live pump; air pump rod; 2 slide valve spindles; set rings & springs H.P. piston; set rings H.P. piston valves; breakdown coupling; 2 safety valve springs; 3 escape valves set and all gear to Lloyd's Rules additional.

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO. LIMITED.
Manufacturer.

Dates of Survey while building: During progress of work in shops - 1906. March 15, 22, 28. April 2, 11, 19, 24, 27, 30. May 3, 10, 18, 22, 24, 30, 30. During erection on board vessel - June 1, 5, 12, 13, 15, 30, 22, 26, 26, 29 up to 2 October 1906. Total No. of visits 56

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

Dates of Examination of principal parts—Cylinders 25-4-06 Covers to Pistons Rods

Connecting rods 9-7-06 Crank shaft 30-7-06 Thrust shaft do Tunnel shafts do Screw shaft do Propeller do

Stern tube 2-8-06 Steam pipes tested 10-8-06 Engine and boiler seatings 21-8-06 Engines holding down bolts 28-9-06

Completion of pumping arrangements 31-8-06 Boilers fixed 30-8-06 Engines tried under steam 2-10-06

Main boiler safety valves adjusted 28-9-06 Thickness of adjusting washers 11-14-06 / 32

Material of Crank shaft S. Steel Identification Mark on Do. LLOYD'S P.M. Material of Thrust shaft do Identification Mark on Do. do

Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. do

Material of Steam Pipes W. Iron Test pressure 500 lbs

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. It has been securely fitted on board, and on trials under steam in Belfast Lough, it worked satisfactorily. In my opinion it is eligible for record + L.M.C. 10-06 with Forced Draft & Electric Light & Repair Machinery.

It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 10-06 F.D. ELEC. LIGHT. REF. MCHY.

Handwritten signatures and dates:
R.S. 10.10.06
P.J. Beveridge
10/10/06
12/10/06

The amount of Entry Fee. . . £ 3 : 0 :
Special £ 50 : 1 :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : :

When applied for. 8-10-1906
When received. 12/10/06

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

Committee's Minute FRI. 12 OCT 1906

Assigned

+ L.M.C. 1006
F.D. Elec. Light
Ref. Mch



MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to this office

The Surveyors are requested not to write on or below the space for Committee's Minute.