

REPORT ON MACHINERY.

No. 55487.

Port of Newcastle

Received at London Office 31. 5 OCT 1908

No. in Survey held at Newcastle.

Date, first Survey 11th Sep 07 Last Survey 1st Oct 1908

eg. Book.

on the 55 Toyo Maru

(Number of Visits 46)

Master J.A. Prowse

Built at Newcastle

By whom built Armstrong Whitworth & Co.

Gross 5135
Tons Net 3149
When built 1908

Engines made at Newcastle.

By whom made Wallsend Slipway & Eng'g Co.

when made 1908

Wheels made at do.

By whom made do

when made 1908

Registered Horse Power

Owners C. J. Bowring & Co. Ltd

Port belonging to Liverpool

m. Horse Power as per Section 28 438

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

GINES, &c.—Description of Engines

Tri C. P. S.

No. of Cylinders 3.

No. of Cranks 3

No. of Cylinders 26. 43. 72

Length of Stroke 48

Revs. per minute 65

Dia. of Screw shaft as per rule 14 1/2

Material of screw shaft 5

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

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

been the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes

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

Length of stern bush 5' 1"

No. of Tunnel shaft as per rule none

Dia. of Crank shaft journals as per rule 13.65

Dia. of Crank pin 14

Size of Crank web 28 1/2

Dia. of thrust shaft under

ars 14

Dia. of screw 18.6

Pitch of Screw 14.6

No. of Blades 4

State whether moveable f

No. of Feed pumps 2

Diameter of ditto 7.92

Stroke 18

Can one be overhauled while the other is at work Yes

Total surface 108 1/2

No. of Bilge pumps 2

Diameter of ditto 4.2

Stroke 24

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

Sizes of Pumps 7.42, 7.6, 8.2 x 6

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

In Holds, &c. No. 1. one 2" 7/2 one 2 1/2"

Engine Room 4 of 32

No. of Bilge Injections 1

sizes 7

Connected to condenser, or to circulating pump C.P.

Is a separate Donkey Suction fitted in Engine room & size Yes 32

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

all connections with the sea direct on the skin of the ship Yes

Are they Valves or Cocks Both

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

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

at pipes are carried through the bunkers none

How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

es of examination of completion of fitting of Sea Connections 29. 7. 08 of Stern Tube 29. 7. 08 Screw shaft and Propeller 29. 7. 08

the Screw Shaft Tunnel watertight none

Is it fitted with a watertight door

worked from

MLERS, &c.—(Letter for record R.)

Manufacturers of Steel

Spencer & Sons

Heating Surface of Boilers 7425

Is Forced Draft fitted No.

No. and Description of Boilers 3 S.E.

Working Pressure 180 lb

Tested by hydraulic pressure to 360

Date of test 17. 1. 08

No. of Certificate 7661

each boiler be worked separately Yes

Area of fire grate in each boiler 64 1/2

No. and Description of Safety Valves to

boiler 2 Spring

Area of each valve 8.29

Pressure to which they are adjusted 185

Are they fitted with easing gear Yes

Test distance between boilers or uptakes and bunkers or woodwork about 2'

Mean dia. of boilers 16 1/2

Length 10.9

Material of shell plates S

thickness 13/32

Range of tensile strength 29.33

Are the shell plates welded or flanged Both

Descrip. of riveting: cir. seams 8. x 1 1/4

seams 7. butt

Diameter of rivet holes in long. seams 12

Pitch of rivets 10

Lap of plates or width of butt straps 21 3/4

Percentages of strength of longitudinal joint rivets 93

plate 853

Working pressure of shell by rules 209

Size of manhole in shell 16 x 12

of compensating ring McNeil's

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

Material S

Outside diameter 4.1 1/4

th of plain part top 9

Thickness of plates crown 5/8

Description of longitudinal joint Weld.

No. of strengthening rings

Working pressure of furnace by the rules 202

Combustion chamber plates: Material S

Thickness: Sides 5/8

Back 5/8

Top 5/8

Bottom 13/32

of stays to ditto: Sides 8 x 4 1/2

Back 4 1/2 x 4 1/2

Top 4 1/2 x 4 1/2

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 219

Material of stays S

Diameter at smallest part 1.6

Area supported by each stay 61 1/2

Working pressure by rules 195

End plates in steam space:

Material S

Thickness 13/32

Pitch of stays 16 1/2 x 15 1/2

How are stays secured d. nuts

Working pressure by rules 212

Diameter at smallest part 2 1/4

Area supported by each stay 252

Working pressure by rules 188

Material of Front plates at bottom S

Thickness 1

Material of Lower back plate S

Thickness 5/8

Greatest pitch of stays 14

Working pressure of plate by rules 188

Diameter of tubes 3

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

Material of tube plates S

Thickness: Front 13/32

Back 3/4

Mean pitch of stays 8 1/4 x 8 1/6

across wide water spaces 14

Working pressures by rules 235

Girders to Chamber tops: Material S

Depth and

ness of girder at centre 8 1/2 x 12

Length as per rule 31 3/4

Distance apart 7 1/2

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

Working pressure by rules 183

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

Material 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

Reinforced 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 _____ 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:— 1 Set connecting rod bolts & nuts, two main bearing bolts & nuts, 1 set coupling bolts & nuts, 1 set feed & bilge pump valves, propeller & shaft.

The foregoing is a correct description,

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.

Manufacturer.

Dates of Survey while building _____

During progress of work in shops— _____

During erection on board vessel— _____

Total No. of visits _____

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

Dates of Examination of principal parts—Cylinders *24.7.08* Slides *24.7.08* Covers *24.7.08* Pistons *13.11.07* Rods *13.11.07*

Connecting rods *13.11.07* Crank shaft *19.12.07* Thrust shaft *19.12.07* Tunnel shafts *17.12.07* Screw shaft *17.12.07* Propeller *13.1.08*

Stern tube *28.7.08* Steam pipes tested *3rd Oct 08* Engine and boiler seatings *31.8.08* Engines holding down bolts *31.8.08*

Completion of pumping arrangements *1.10.08* Boilers fixed *31.8.08* Engines tried under steam *1.10.08*

Main boiler safety valves adjusted *1.10.08* Thickness of adjusting washers *P.F. 5.5. ST 32.5.52. AB 8.5.3.*

Material of Crank shaft *S* Identification Mark on Do. *R.J.T.F* Material of Thrust shaft *S* Identification Mark on Do. *R.J.T.F*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *S* Identification Marks on Do. *R.J.T.F*

Material of Steam Pipes *W.S.* Test pressure *540*

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers built under special survey. Materials and workmanship good. Engines & boilers examined under steam & found satisfactory. In my opinion this vessel is eligible for the record of L.M.C. 10/08

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10.08.

Fitted for liquid fuel. Electric light.

J.W.D.

5.10.08

The amount of Entry Fee.. £ 3 : : When applied for. _____

Special .. £ 41 : 18 : : _____

Donkey Boiler Fee .. £ : : : When received, _____

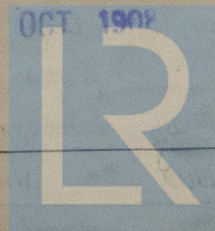
Travelling Expenses (if any) £ : : : *2 OCT 1908*

Committee's Minute

Assigned

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

FRI. 9 OCT 1908



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MACHINERY CERTIFICATE WRITTEN 10-08