

Rpt. 4.

REPORT ON MACHINERY.

No. 23409
Ind. No. 5209

THUR. 12 SEP 1907

Port of

Sunderland.

Received at London Office

No. in Survey held at
Reg. Book.

Sunderland

Date, first Survey 2nd June 1907 Last Survey 20th August 1907
(Ind. No. 1655) July (Number of Visits 2) 30th August 1907

84 on the Steel screw steamer BALTIC SEA

Master

J. Stephen

Built at

Stockton

By whom built

Carr Taylor & Co.

Engines made at

Sunderland

By whom made

N.E. Marine Eng^y Co. Ltd.

when made 1904

Boilers made at

Sunderland

By whom made

N.E. Marine Eng^y Co. Ltd.

when made 1904

Registered Horse Power

Owners

Finland-London Steamship Co. Ltd.

Port belonging to

Nom. Horse Power as per Section 28 210

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple Expansion (Inverted)

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders 21-35-54

Length of Stroke 39

Revs. per minute 65

Dia. of Screw shaft

as per rule 12.57

Material of

steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no

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 Rubber cotton. at bearings Length of stern bush 4-3

Dia. of Tunnel shaft as per rule 10.15

Dia. of Crank shaft journals as per rule 10.65

Dia. of Crank pin 10.3

Size of Crank webs 6 1/8 x 6 1/4

Dia. of thrust shaft under

collars 10 3/4

Dia. of screw 15-6

Pitch of Screw 16-0

No. of Blades 4

State whether moveable

no

Total surface

44 sq ft

No. of Feed pumps

Two

Diameter of ditto 3

Stroke 21

Can one be overhauled while the other is at work

yes.

No. of Bilge pumps

Two

Diameter of ditto 3 1/2

Stroke 21

Can one be overhauled while the other is at work

yes.

No. of Donkey Engines

Two

Duplex

Sizes of Pumps 6 x 4 x 9 and 5 x 3 x 4 1/2

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

In Engine Room

Two

3" wings

Two Centre suction

one 3" one 3 1/2"

In Holds, &c.

3, 3" after hold 2, 3" fore hold.

No. of Bilge Injections

yes

sizes 4

Connected to condenser, or to circulating pump

pump

Is a separate Donkey Suction fitted in Engine room & 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 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

none

How are they protected

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

Aug 25/07 of Stern Tube

Aug 14/07

Screw shaft and Propeller 16/8/07

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

top platform

BOILERS, &c.—(Letter for record S.)

Manufacturers of Steel

J. Spencer & Son Ltd.

J. Beighton & Co. Ltd.

Total Heating Surface of Boilers

3248 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

Two, single ended, 14 ft 6 in.

Working Pressure 160 lb.

Tested by hydraulic pressure to 320 lb.

Date of test 25/7/07

No. of Certificate 2642

Can each boiler be worked separately

yes.

Area of fire grate in each boiler

42 sq ft

No. and Description of Safety Valves to

each boiler

Two, direct spring

Area of each valve

4.91 sq in

Pressure to which they are adjusted

165 lb

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork 12" (Rule Mean dia. of boilers 13-7/16) Length 10-0 Material of shell plates steel

Thickness 3/16

Range of tensile strength 28 3/4 to 52 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams Lap DR.

long. seams 5/16-7/8

Diameter of rivet holes in long. seams 1 1/8

Pitch of rivets 4 1/2

Lap of plates or width of butt straps 16

Per centages of strength of longitudinal joint

rivets 86.44

plate 86.5

Working pressure of shell by rules 161.5 lb.

Size of manhole in shell

end plate 16 x 12

Size of compensating ring

flange

No. and Description of Furnaces in each boiler

Three plain

Material steel Outside diameter 38 3/4

Length of plain part

top 5-7/8

Thickness of plates

crown 2 1/2

Description of longitudinal joint

Weld

No. of strengthening rings

Working pressure of furnace by the rules 166 lb.

Combustion chamber plates: Material steel Thickness: Sides 3/4

Back 1/2

Top 3/4

Bottom 1/2

Pitch of stays to ditto: Sides 8 1/2 x 13

Back 9 1/2 x 10

Top 8 1/2 x 13 + 12 If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules 161 lb

Material of stays steel

Diameter at smallest part 1 1/8

Area supported by each stay 10 1/2

Working pressure by rules 161 lb

End plates in steam space:

Material steel

Thickness 1 1/4

Pitch of stays 24 1/2 x 18

How are stays secured

5/16 x 1 1/4

Working pressure by rules 160.1 lb

Diameter at smallest part 2.86

Area supported by each stay 44.0

Working pressure by rules 170 lb

Material of Front plates at bottom

steel

Thickness 3/4

Material of Lower back plate steel

Thickness 2 1/2

Greatest pitch of stays 14 1/2 x 10

Working pressure of plate by rules 162 lb

Mean pitch of stays 10 1/8

Diameter of tubes 3 1/4

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

Material of tube plates steel

Thickness: Front 3/4

Back 3/4

Girders to Chamber tops: Material steel

Depth and

Pitch across wide water spaces 14 1/2

Working pressures by rules 164.9 lb

Distance apart 12, 13

Number and pitch of stays in each

Two 8 1/2

Thickness of girder at centre 8 1/2 x 2

Length as per rule 30 7/8

Working pressure by rules 165 lb

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

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

—

—

—

—

9600-0063

VERTICAL DONKEY BOILER—

Manufacturers of Steel

See separate report.

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 _____
 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 connecting rod top end bolts & nuts 2 bottom end do 2 main bearing bolts & nuts, 1 set of coupling bolts & nuts, 1 set of feed & high pump valves a quantity of assorted bolts & nuts. 1 set of various sizes. 1 spare propeller

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO. LTD.
 Manufacturer.

Dates of Survey while building { During progress of work in shops - } 24 June 24, 28 July 2, 4, 8, 10, 12, 14, 17, 20, 24, 25, 26, 27, 30 Aug 2, 7, 9, 12, 13, 15, 16, 17, 20.
 { During erection on board vessel - } July 16, 26 August 1, 12, 14, 24, 26, 29, 30
 Total No. of visits 24 (Sld) 9 (Indb)

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

Dates of Examination of principal parts—Cylinders 24/31/12/13/ Slides 13/8 15/8 Covers 1/8 Pistons 12/8 Rods 24/7 9/8
 Connecting rods 12/8 9/8 Crank shaft 4/10/17/26/27/30/31/ Thrust shaft 1/8 2/8 12/8 Tunnel shafts 7/8 9/8 Screw shaft 20/7 1/8 Propeller 20/7 1/8
 Stern tube 20/7 31/7 Steam pipes tested 21.8.07 Engine and boiler seatings 12/8/07 Engines holding down bolts 22.8.07
 Completion of pumping arrangements 23.8.07 Boilers fixed 20.8.07 Engines tried under steam 23.8.07
 Main boiler safety valves adjusted 23.8.07 Thickness of adjusting washers P.F. 5/16" P.A. 1/4" S.F. 1/4" S.R. 5/16"
 Material of Crank shaft steel Identification Mark on Do. 468 D 23 Material of Thrust shaft steel Identification Mark on Do. 5202 N W.C.
 Material of Tunnel shafts steel Identification Marks on Do. 4860 RL 733 Material of Screw shafts steel Identification Marks on Do. 465 D AB
 Material of Steam Pipes Copper Test pressure 400 lbs

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

The Machinery of this Vessel has been constructed under special survey the material & workmanship sound & good, the Boilers & Steam pipes have been subjected to hydraulic pressure as required by the Rules, the Machinery worked well at the Moorings & the Safety Valves have been adjusted under steam to their working pressure.

This Vessel is Eligible in. Our opinion to have the Notation LMC 8.07 in the Register Book

It is submitted that this vessel is eligible for THE RECORD LMC 8.07

The amount of Entry Fee. £ 2 : : When applied for, 23.8.1907
 Special .. £ 30 : 10 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : : When received, 31.8.07

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

Committee's Minute

FRI. 13 SEP 1907

Assigned

+ LMC 8.07

MACHINERY CERTIFICATE WRITTEN.



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