

REPORT ON MACHINERY.

No. 21, 113

Received at London Office

WED. 28 APR 1909

Date of writing Report 26.4.1909 When handed in at Local Office

27.4.1909 Port of Hull

No. in Survey held at Reg. Book.

Hull

Date, First Survey

Dec 12/08.

Last Survey

21st Apr

1909

8 Suff on the

Steel Sc. K. Yokohama

(Number of Visits 25)

Gross 291

Net 117

Master

Built at

Hull

By whom built

Earles & Co Ltd

When built 1909

Engines made at

By whom made

when made 1909

Boilers made at

Hull

By whom made

Earles & Co Ltd

when made 1909

Registered Horse Power

Owners Pickering & Haldane S. J. Co

Port belonging to Hull

Nom. Horse Power as per Section 28

89

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 13" ~ 22 1/2" ~ 37"

Length of Stroke 26"

Revs. per minute 111

Dia. of Screw shaft

as per rule 7.82"

Material of Steel

as fitted 8.24"

screw shaft

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 one length

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 fits tightly

If two

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

Length of stern bush 36"

Dia. of Tunnel shaft

as per rule 7"

Dia. of Crank shaft journals

as per rule 7.36"

Dia. of Crank pin 7 1/2"

Size of Crank webs 14" x 4 1/8"

Dia. of thrust shaft under

collars 7 1/2"

Dia. of screw 9'-6"

Pitch of Screw 11' ~ 9 mean

No. of Blades 4

State whether moveable No

Total surface 29.0 sq

No. of Feed pumps 1

Diameter of ditto 3"

Stroke 12"

Can one be overhauled while the other is at work

No. of Bilge pumps 1

Diameter of ditto 3"

Stroke 12"

Can one be overhauled while the other is at work

No. of Donkey Engines Two

Sizes of Pumps one 6" x 4 1/4" x 6"

one Centrif. 4 1/2" x 4 1/2" x 5" pipes

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

In Engine Room one 2", one 3", one 3 1/2"

In Holds, &c. one 2" to fore hold, one 2" to fish

room, one 2" to slush well, Ejector suction from all parts.

No. of Bilge Injections 1

sizes 3 1/2"

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 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 awash

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 16.4.09

of Stern Tube 16.4.09

Screw shaft and Propeller 16.4.09

Is the Screw Shaft Tunnel watertight None

Is it fitted with a watertight door

worked from

BOILERS, &c.—(Letter for record 5)

Manufacturers of Steel Phoenix Akt. Ges. Abt. Heider Verein

Total Heating Surface of Boilers 1490 sq

Is Forced Draft fitted No

No. and Description of Boilers One cyl. Mult.

Working Pressure 200 lbs

Tested by hydraulic pressure to 400 lbs

Date of test 19.3.09

No. of Certificate 1694

Can each boiler be worked separately

Area of fire grate in each boiler 42.5 sq

No. and Description of Safety Valves to

each boiler Two Spring

Area of each valve 4.9 sq

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 5"

Int

Main dia. of boilers 13' ~ 9"

Length 10' ~ 6"

Material of shell plates Steel

Thickness 1 1/4"

Range of tensile strength 28-30

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams L. D.

long. seams D. B. S. Y. R

Diameter of rivet holes in long. seams 1 1/4"

Pitch of rivets 8 1/8"

Lap of plates or width of butt straps 17 3/4"

Per centages of strength of longitudinal joint

rivets 90%

Working pressure of shell by rules 203 lbs

Size of manhole in shell 16" x 12"

Size of compensating ring 30" x 40" x 1 1/4"

No. and Description of Furnaces in each boiler 3 plain

Material Steel

Outside diameter 3' ~ 3 1/4"

Length of plain part

top 5'-9 3/4"

Thickness of plates

crown 49"

bottom 64"

Description of longitudinal joint Welded

No. of strengthening rings 0

Working pressure of furnace by the rules 203 lbs

Combustion chamber plates: Material Steel

Thickness: Sides 23/32"

Back 11/16"

Top 11/16"

Bottom 23/32"

Pitch of stays to ditto: Sides 9 1/4" x 8 1/2"

Back 9 1/4" x 8 1/2"

Top 8 1/2" x 8 1/2"

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 208 lbs

Material of stays Steel

Diameter at smallest part 1 3/4"

Area supported by each stay 106.375

Working pressure by rules 203 lbs

End plates in steam space:

Material Steel

Thickness 1 3/16"

Pitch of stays 18 1/2" x 17"

How are stays secured D. Nuts

Working pressure by rules 200 lbs

Material of stays Steel

Diameter at smallest part 2 1/16"

Area supported by each stay 314.50

Working pressure by rules 206 lbs

Material of Front plates at bottom Steel

Thickness 31/32"

Material of Lower back plate Steel

Thickness 15/16"

Greatest pitch of stays 14 1/2" x 9 1/4"

Working pressure of plate by rules 210 lbs

Diameter of tubes 3 1/2"

Pitch of tubes 5" x 5 1/8"

Material of tube plates Steel

Thickness: Front 31/32"

Back 1/8"

Mean pitch of stays 10 1/8"

Pitch across wide water spaces 14 1/2"

Working pressures by rules 201 lbs

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 10" x 13 1/4"

Length as per rule 36"

Distance apart 8 1/2"

Number and pitch of stays in each 3 — 8 1/2"

Working pressure by rules 221 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

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

W1297-0084

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 of coupling bolts and nuts, one set each feed, bilge, air pump valves, and a quantity of assorted bolts nuts etc.

The foregoing is a correct description.
F. J. Palethorpe Manufacturer.

SECRETARY 1908:— Dec 12. 1909:— Jan 11. 22. 30. Feb 3. 9. 10. 13. 15. 24. Mar 3
 Dates of Survey while building { During progress of work in shops - - }
 { During erection on board vessel - - } Mar 5. 6. 12. 19. 26. 27. 30. 31. Apr 3. 5. 14. 16. 17. 21.
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 24. 2. 09 Slides 3. 3. 09 Covers 9. 2. 09 Pistons 15. 2. 09 Rods 15. 2. 09
 Connecting rods 15. 2. 09 Crank shaft 24. 2. 09 Thrust shaft 24. 2. 09 Tunnel shafts _____ Screw shaft 3. 3. 09 Propeller 3. 3. 09
 Stern tube 3. 3. 09 Steam pipes tested 31. 3. 09 Engine and boiler seatings 26. 3. 09 Engines holding down bolts 5. 4. 09
 Completion of pumping arrangements 17. 4. 09 Boilers fixed 5. 4. 09 Engines tried under steam 17. 4. 09
 Main boiler safety valves adjusted 5. 4. 09 Thickness of adjusting washers $\frac{13}{32}$ & $\frac{14}{32}$

Material of Crank shaft **Steel** Identification Mark on Do. **2215. ATC** Material of Thrust shaft **Steel** Identification Mark on Do. **161GAH**
 Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts **Steel** Identification Marks on Do. **161GAH**
 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, and in conformity with approved plan, the boiler tested by hydraulic pressure, found satisfactory and with the engines fitted and secured onboard, tested under steam and found satisfactory, and being now in good order and safe working condition are respectfully submitted as being eligible in my opinion to be classed with the notation of **1st L.M.C. 4.09** in the Register Book. Attached is letter from Owners agreeing to the fitting of one feed and one bilge pump to the Main Engines.

It is submitted that this vessel is eligible for THE RECORD + LMC 4.09 JWS 28/4/09

The amount of Entry Fee £ 1 : : : When applied for, 27. 4. 09
 Special £ 13 : 4 : : :
 Donkey Boiler Fee £ : : : : :
 Travelling Expenses (if any) £ : : : : : When received, 12. 5. 09

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

Committee's Minute

FRI. 30 APR 1909

Assigned

+ LMC 4.09

MACHINERY CERTIFICATE
 WRITTEN.



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