

## REPORT ON MACHINERY.

No. 23325

MON. 24 JUN 1907

Port of Sunderland

Received at London Office 19

No. in Survey held at Sunderland Date, first Survey 16<sup>th</sup> January of Last Survey 15<sup>th</sup> June 1907Reg. Book. on the Steel Screw Steamer "KNOTTINGLY"(Number of Visits 36)Gross 824.34Net 416.70When built 1904Master J. W. Walker Built at Sunderland By whom built J. Brown & Sons Ltd.Engines made at Sunderland By whom made N.E. Marine Eng<sup>y</sup> Co. Ltd. when made 1904Boilers made at Sunderland By whom made N.E. Marine Eng<sup>y</sup> Co. Ltd. when made 1904Registered Horse Power 128 Owners Wetherall & Co. Port belonging to GoogleNom. Horse Power as per Section 28 128 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yesENGINES, &c.—Description of Engines Triple Expansion (Inverted type) No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 16 $\frac{1}{2}$  - 26 $\frac{1}{2}$  - 45 Length of Stroke 33 Revs. per minute 84 $\frac{1}{2}$  Dia. of Screw shaft as per rule 9 $\frac{1}{2}$  as fitted 10 $\frac{1}{8}$  Material of crank pin screw shaftIs the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight in the propeller boss — 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 fil. and cadernell gland Length of stern bush 4-11Dia. of Tunnel shaft as per rule 8.6 as fitted 8.6 Dia. of Crank shaft journals as per rule 8.6 as fitted 8.6 Dia. of Crank pin 8 $\frac{5}{8}$  Size of Crank webs 25 $\frac{1}{2}$  x 12 Dia. of thrust shaft under collars 8 $\frac{5}{8}$  Dia. of screw 11-6 Pitch of Screw 13-6 No. of Blades four State whether moveable no Total surface 45 $\frac{1}{2}$ No. of Feed pumps Two Diameter of ditto 2 $\frac{3}{4}$  Stroke 15 Can one be overhauled while the other is at work yesNo. of Bilge pumps Two Diameter of ditto 3 Stroke 15 Can one be overhauled while the other is at work yesNo. of Donkey Engines Two Sizes of Pumps 6 $\frac{1}{2}$  x 9 $\frac{1}{2}$  and 5 $\frac{1}{2}$  x 3 $\frac{1}{2}$  x 5 $\frac{1}{2}$  No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room one 3 $\frac{3}{4}$  dia one 2 $\frac{1}{2}$  dia In Holds, &c. Two 2 $\frac{1}{2}$  in size in Main Hold + foreholdNo. of Bilge Injections one size 3 $\frac{1}{2}$  Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 2 $\frac{1}{2}$ 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 noneAre all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks bothAre 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 aboveAre 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 yesWhat pipes are carried through the bunkers Main Hold + forehold How are they protected wood casingAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesDates of examination of completion of fitting of Sea Connections 25/5 of Stern Tube 22/5 Screw shaft and Propeller 11/6Is the Screw Shaft Tunnel watertight no tunnel Is it fitted with a watertight door — worked from Machinery aft.BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons Ltd., & Reighton & Co. Ltd.Total Heating Surface of Boilers 2100 $\frac{1}{2}$  Is Forced Draft fitted no No. and Description of Boilers Two single ended Cyl. Mult.Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 22/2/04 No. of Certificate 2580Can each boiler be worked separately yes Area of fire grate in each boiler 26.5 $\frac{1}{2}$  No. and Description of Safety Valves to each boiler Two, direct spring Area of each valve 3.14 $\frac{1}{2}$  Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 3-4 (Rule Mean dia. of boilers 11.4 $\frac{5}{16}$ ) Length 9-0 Material of shell plates steelThickness 24 $\frac{1}{2}$  / 32 Range of tensile strength 28 $\frac{3}{4}$  to 32 lbs. Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap 5 R.long. seams 5 R. - T.R. Diameter of rivet holes in long. seams 31 $\frac{1}{32}$  Pitch of rivets 4 $\frac{1}{4}$  Lap of plates or width of butt straps 14 $\frac{3}{4}$ Per centages of strength of longitudinal joint rivets 89.5 Working pressure of shell by rules 163.3 lbs. Size of manhole in shell end plate 16 x 12Size of compensating ring flanged No. and Description of Furnaces in each boiler Two plain Material steel Outside diameter 38 $\frac{3}{4}$ Length of plain part top 5-0 $\frac{1}{8}$  bottom 5-0 $\frac{1}{8}$  Thickness of plates crown 5 $\frac{1}{8}$  bottom 5 $\frac{1}{8}$  Description of longitudinal joint Weld No. of strengthening rings —Working pressure of furnace by the rules 163.5 lbs. Combustion chamber plates: Material steel Thickness: Sides 11 $\frac{1}{16}$  Back 3 $\frac{1}{4}$  Top 11 $\frac{1}{16}$  Bottom 13 $\frac{1}{16}$ Pitch of stays to ditto: Sides 4 $\frac{1}{2}$  x 12 $\frac{1}{8}$  Back 11 $\frac{1}{4}$  x 10 $\frac{1}{2}$  Top 4 $\frac{1}{2}$  x 12 $\frac{1}{8}$  If stays are fitted with nuts or riveted heads nuts Working pressure by rules 164.16 lbs.Material of stays steel Diameter at smallest part 1 $\frac{1}{16}$  / 1 $\frac{1}{8}$  / 1 $\frac{1}{4}$  / 1 $\frac{1}{2}$  / 1 $\frac{3}{4}$  / 2 Area supported by each stay 91.19, 154 Working pressure by rules 164 lbs. End plates in steam space:Material steel Thickness 1 $\frac{3}{16}$  Pitch of stays 24 $\frac{1}{2}$  x 15 $\frac{1}{4}$  How are stays secured 57 $\frac{1}{2}$  + 11 Working pressure by rules 160.3 lbs. Material of stays steelDiameter at smallest part 2.8 Area supported by each stay 373.6 Working pressure by rules 165 lbs. Material of Front plates at bottom steelThickness 3 $\frac{1}{4}$  Material of Lower back plate steel Thickness 4 $\frac{1}{8}$  Greatest pitch of stays 14 $\frac{3}{4}$  x 10 $\frac{1}{2}$  Working pressure of plate by rules 161.4 lbs.Diameter of tubes 3 $\frac{1}{4}$  Pitch of tubes 4 $\frac{3}{4}$  x 4 $\frac{1}{2}$  Material of tube plates steel Thickness: Front 3 $\frac{1}{4}$  Back 3 $\frac{1}{4}$  Mean pitch of stays 10 $\frac{1}{8}$ Pitch across wide water spaces 14 $\frac{1}{2}$  Working pressures by rules 192 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 x 13 $\frac{1}{4}$  Length as per rule 27 $\frac{1}{2}$  Distance apart 12 $\frac{1}{8}$  Number and pitch of stays in each Two 4 $\frac{1}{2}$ Working pressure by rules 166 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 —

2021

Lloyd's Register

F0150-0199



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No donkey Boiler

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:— One set of coupling bolts & nuts, two each top end, bottom end & main bearing bolts & nuts, one set each feed & bilge pump valve, one propeller & mounted drum etc.

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING CO. LTD.

Walter Beath Surveyor

Dates of Survey while building { During progress of work in shops - 27. Jan. 16. 23. 25. 29. Feb. 4. 5. 7. 14. 21. 22. 26. 28. March 12. 19. 25. April 10. 11. 15. 23. 26. 29. May 3. 6. 7. 9. }  
 { During erection on board vessel - 11. 13. 16. 28. 29. 30. June 4. 7. 10. 15. }  
 Total No. of visits 36

Is the approved plan of main boiler forwarded herewith ☒ Yes

Dates of Examination of principal parts—Cylinders 26/11/1907 Slides 19/11/1907 Covers 7/5/1907 Pistons 7/5/1907 Rods 7/5/1907

Connecting rods 16/5/1907 Crank shaft 2/2/1907 Thrust shaft 11/5/1907 Tunnel shafts none Screw shaft 26/11/1907 Propeller 7/5/1907

Stern tube 1/4/1907 Steam pipes tested 2/6/1907 Engine and boiler seatings 2/5/1907 Engines holding down bolts 4/6/1907

Completion of pumping arrangements 10/6/1907 Boilers fixed 27/5/1907 Engines tried under steam 10/6/1907

Main boiler safety valves adjusted 10/6/1907 Thickness of adjusting washers all 5/16

Material of Crank shaft steel Identification Mark on Do. 423 D Material of Thrust shaft steel Identification Mark on Do. 49517

Material of Tunnel shafts None Identification Marks on Do. — Material of Screw shafts iron Identification Marks on Do. 424 AB

Material of Steam Pipes Copper rolled brass 3 1/2 Bore 18 in. 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 Boiler & Steam pipes have been tested by hydraulic pressure in accordance with the Rules, the Machinery worked satisfactorily & the safety valves have been adjusted under steam to their working pressure & easing gear fitted

It is submitted that this vessel is eligible for THE RECORD.

L. M. C. 6. 07

Elec Light

R.S. 26-6-07

This Vessel is Eligible in my opinion to have the notation \* L M C 6. 07 in the Register Book, Machinery fitted aft & Electric Light

The amount of Entry Fee.. £ 2 : - : - : When applied for, 22. June 1907

Special .. £ 19 : 4 : - : When received, 27. 6. 07

Donkey Boiler Fee .. £ : : : 8. 7. 07

Travelling Expenses (if any) £ : : : 19. 0. 00

Committee's Minute

Assigned

FRI. 28 JUN 1907

+ L M C 6. 07  
Elec Light

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

MACHINERY CERTIFICATE WRITTEN.



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Lloyd's Register Foundation

Sunderland

Certificate (if required) to be sent to