

Rpt. 4.

REPORT ON MACHINERY.

No. 23069

And 4888

Received at London Office FRI. JAN 18 1907

Port of Sunderland

No. in Survey held at Sunderland

Date, first Survey January 10th 1906 Last Survey 30 Nov 1906

Reg. Book. S. S. O. A. Knudsen

(Number of Visits 77) (Gross 3532.05) (Net 2269.96)

Master Built at Stockton

By whom built Messrs. Craig Taylor & Co

Tons When built 1906

Engines made at Sunderland

By whom made Messrs. J. Dickinson & Sons

when made 1906

Boilers made at Sunderland

By whom made Messrs. J. Dickinson & Sons

when made 1906

Registered Horse Power Owners Knut Knudsen Esq

Port belonging to Nangesund

Nom. Horse Power as per Section 28 307

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines

Inverted triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 24 1/2, 40, 66 Length of Stroke 45 Revs. per minute 70 Dia. of Screw shaft 13 7/8 Material of screw shaft Iron

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 Yes 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4-9

Dia. of Tunnel shaft 12 1/2 Dia. of Crank shaft journals 12 1/2 Dia. of Crank pin 12 7/8 Size of Crank webs 23 1/2 x 8 1/2 Dia. of thrust shaft under collars 12 7/8 Dia. of screw 17-0 Pitch of Screw 16-0 No. of Blades 4 State whether moveable no Total surface 82

No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 22 1/2 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 22 1/2 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 6x4x6 + 8x10x10 No. and size of Suctions connected to both Bilge and Donkey pumps 4 of 3 1/2

In Engine Room 4 of 3 1/2 In Holds, &c. Two each hold 3 1/2 diam

No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 4

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 Yes

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 Yes

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 10-12-06 of Stern Tube 23-11-06 Screw shaft and Propeller 23-11-06

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record 6)

Manufacturers of Steel Messrs. J. Spencer & Sons

Total Heating Surface of Boilers 4600 Is Forced Draft fitted no No. and Description of Boilers 2 S.E. Cylindrical built

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 20-10-06 No. of Certificate 2537

Can each boiler be worked separately Yes Area of fire grate in each boiler 71 No. and Description of Safety Valves to each boiler 2 spring Area of each valve 8.29 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 15.9 7/16 Length 10.6 Material of shell plates steel

Thickness 1 3/32 Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.v. lap

long. seams E. r. d. & s. Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 5/16 Lap of plates or width of butt straps 20 1/2

Per centages of strength of longitudinal joint rivets 92-6 Working pressure of shell by rules 181.5 lbs Size of manhole in shell 16 x 12

Size of compensating ring 8 3/4 x 1 9/32 No. and Description of Furnaces in each boiler 4 plain Material steel Outside diameter 40 1/4

Length of plain part top 8 1/2 bottom 8 1/2 Thickness of plates crown 49/64 bottom 49/64 Description of longitudinal joint weld No. of strengthening rings 1

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1

Pitch of stays to ditto: Sides 10 x 9 Back 10 x 9 Top 9 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lbs

Material of stays steel Area at smallest part 2.03 Area supported by each stay 90 Working pressure by rules 203 lbs End plates in steam space: Material steel Thickness 1 3/32 Pitch of stays 18 x 17 1/2 How are stays secured d.n.w. Working pressure by rules 184 lbs Material of stays steel

Area at smallest part 5.57 Area supported by each stay 18 x 17 1/2 Working pressure by rules 184 lbs Material of Front plates at bottom steel

Thickness 7/8 Material of Lower back plate steel Thickness 27/32 Greatest pitch of stays 13 1/2 x 10 Working pressure of plate by rules 184 lbs

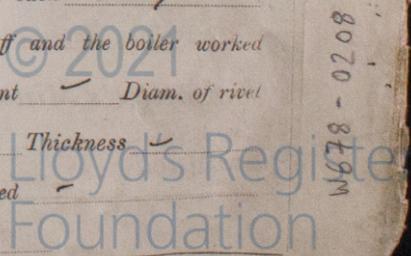
Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1 3/32 Back 7/8 Mean pitch of stays 9

Pitch across wide water spaces 13 1/4 Working pressures by rules 244 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 6 1/2 x 2 Length as per rule 24 19/32 Distance apart 9 Number and pitch of stays in each 2-9

Working pressure by rules 182 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 Yes

OF THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

8070-8796



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:— *Propeller, 2 top end, 2 bottom end, 2 main bearings and 1 set of coupling bolts Feed & bilge pump & valves, set of safety valve springs, 1 main and donkey feed check valves*

The foregoing is a correct description,
J. & S. Sons, Limited.
A. P. Johnson Manufacturer.

Dates of Survey while building: During progress of work in shops— Director 1906: Jan. 10, 24, 30, Feb. 5, 12, 15, 20, 26, Mar. 2, 6, 16, 20, 26, Apr. 6, 10, 30, May 3, 16, 21, 25, 31, June 11, 14, July 1, 13, 16, 19, 25, Aug. 1, 5, 9, 13, 15, 16, 24, 29, Sept. 1, 5, 6, 10, 11, 12, 13, 14, 17, 19, 20, 21, 24, 28, Oct. 1, 2, 6, 11, 15, 17, 18, 20, 23, 24, 30, Nov. 1, 5, 9, 13, 15, 16, 23, 26, 27, 28, 29, 30, Dec. 1, 10, 13, 1907: Jan. 3, 4, 7

Total No. of visits *77* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *2.10.06* Slides *10.9.06* Covers *19.9.06* Pistons *19.9.06* Rods *11.9.06*

Connecting rods *6.9.06* Crank shaft *10.9.06* Thrust shaft *16.9.06* Tunnel shafts *14.9.06* Screw shaft *12.9.06* Propeller *27.10.06*

Stern tube *2.10.06* Steam pipes tested *27.11.06* Engine and boiler seatings *27.11.06* Engines holding down bolts *27.11.06*

Completion of pumping arrangements *30.11.06* Boilers fixed *27.11.06* Engines tried under steam *30.11.06*

Main boiler safety valves adjusted *30.11.06* Thickness of adjusting washers *P.F. 1/2", P.A. 1/2", S.F. 1/2", S.R. 1/2"*

Material of Crank shaft *steel* Identification Mark on Do. *343 B* Material of Thrust shaft *steel* Identification Mark on Do. *5262 J.M.*

Material of Tunnel shafts *steel* Identification Marks on Do. *3056, 3057, 3058* Material of Screw shafts *Iron* Identification Marks on Do. *348 B*

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 workmanship and materials used are both of good quality, the Engines have been tried under steam and worked satisfactorily*

We beg to recommend that this vessel is eligible in our opinion to have the record in the Register Book

**LMC. 1-07.*

It is submitted that this vessel is eligible for THE RECORD. +LMC1-07

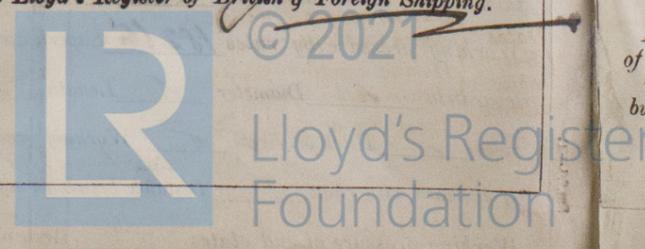
J. W. Milner 18/1/07

The amount of Entry Fee..	£ 3	When supplied for.	12.12.1906
Special	£ 35	When received.	15.1.1907
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

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

Committee's Minute **TUES. JAN 22 1907**

Assigned *+LMC 1-07*



MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to Committee's Minute.