

REPORT ON MACHINERY.

No. 24761

Port of *Sunderland*

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No. in Survey held at *Sunderland* Date, first Survey *6 July 1910* Last Survey *1st March 1911*Reg. Book. on the *Steel Screw Steamer "Hockwold"* (Number of Visits)Master *Hansen* Built at *Sunderland* By whom built *S.P. Austin & Co. Ltd* Tons { Gross *1472* Net *854* When built *1911*Engines made at *Sunderland* By whom made *Thames Iron Co. Ltd* when made *1911*Boilers made at *do* By whom made *do* when made *1911*Registered Horse Power Owners *W. Long & Son Ltd.* Port belonging to *London*Nom. Horse Power as per Section 28 *170* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *no*ENGINES, &c.—Description of Engines *Vertical Triple* No. of Cylinders *3* No. of Cranks *3*Dia. of Cylinders *19"-31"-51"* Length of Stroke *36"* Revs. per minute *73* Dia. of Screw shaft as per rule *11.07* Material of *Steel* as fitted *11.4* screw shaftIs 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 tightin the propeller boss *yes* If the liner is in more than one length are the joints burned *no* If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *yes* If twoliners are fitted, is the shaft lapped or protected between the liners *yes* Length of stern bush *3'-9"*Dia. of Tunnel shaft as per rule *9.58* Dia. of Crank shaft journals as per rule *10.06* Dia. of Crank pin *10.4* Size of Crank webs *6 1/2 x 15 1/2* Dia. of thrust shaft undercollars *10 1/4* Dia. of screw *14'-0"* Pitch of Screw *14'-6"* No. of Blades *4* State whether moveable *no* Total surface *61.4*No. of Feed pumps *2* Diameter of ditto *3'* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*No. of Bilge pumps *2* Diameter of ditto *3 1/2* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*No. of Donkey Engines *3* Sizes of Pumps *2 BALLAST FEED 7x9x9 6x4x6* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *3 - 2 1/2* DUPLEX In Holds, &c. *2 in each 3 dia. 1-3 tunnel*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 2 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 *no*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 *no*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 *28.9.10* of Stern Tube *31-1-11* Screw shaft and Propeller *3.2-11*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 *Spencer & Son & Co. Newcastle*Total Heating Surface of Boilers *2634.4* Is Forced Draft fitted *no* No. and Description of Boilers *1 S.P. horizontal*Working Pressure *180 lb* Tested by hydraulic pressure to *360 lb* Date of test *1-9-10* No. of Certificate *2858*Can each boiler be worked separately *yes* Area of fire grate in each boiler *60.4* No. and Description of Safety Valves toeach boiler *two direct spring* Area of each valve *8.290* Pressure to which they are adjusted *185 lb* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *2 ft.* Mean dia. of boilers *16'-3 1/2* Length *10'-9"* Material of shell plates *steel*Thickness *1 3/32* Range of tensile strength *28 1/2 to 32* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *DR Lap*long. seams *DR Lap* Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *9 in* Lap of plates or width of butt straps *19 1/2*Per centages of strength of longitudinal joint rivets *84.8* Working pressure of shell by rules *181* Size of manhole in shell *End 16 x 12*Size of compensating ring *plate drilled* No. and Description of Furnaces in each boiler *4 Deighton* Material *steel* Outside diameter *41 1/2*Length of plain part top *1.4* Thickness of plates crown *2* Description of longitudinal joint *weld* No. of strengthening rings *no*Working pressure of furnace by the rules *182* Combustion chamber plates: Material *Steel* Thickness: Sides *25 1/2* Back *25 1/2* Top *25 1/2* Bottom *25 1/2*Pitch of stays to ditto: Sides *8 1/2 x 2 1/8* Back *11 1/8 x 9 1/8* Top *8 1/2 x 2 1/8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *180*Material of stays *steel* Diameter at smallest part *1.63* Area supported by each stay *104.5* Working pressure by rules *180.4* End plates in steam space:Material *steel* Thickness *1 3/8* Pitch of stays *23 1/2 x 20 1/2* How are stays secured *DR & W* Working pressure by rules *182* Material of stays *steel*Diameter at smallest part *3.29* Area supported by each stay *487* Working pressure by rules *181* Material of Front plates at bottom *steel*Thickness *1 3/16* Material of Lower back plate *steel* Thickness *3 1/2* Greatest pitch of stays *4 1/2 x 9 1/2* Working pressure of plate by rules *187*Diameter of tubes *3 1/4* Pitch of tubes *4 5/8 x 4 5/8* Material of tube plates *steel* Thickness: Front *13 1/16* Back *13 1/16* Mean pitch of stays *10 1/4*Pitch across wide water spaces *4 1/2* Working pressures by rules *215* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *8 x 2 1/2* Length as per rule *29 1/2* Distance apart *12 1/8* Number and pitch of stays in each *2-8 1/4*Working pressure by rules *182* Superheater or Steam chest; how connected to boiler *yes* Can the superheater be shut off and the boiler workedseparately *no* 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description *Attached*
 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:— *Propeller, 2 each bolts & nuts for top & bottom beds & main bearings, set of Coupling bolts & nuts, valves for all pumps, bolts nuts & various assorted*

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

Dates of Survey while building
 During progress of work in shops— 1910 Jul 6, 8, 13, 14, 20, 23 Aug 8, 9, 11, 12, 15, 22, 25, 29 Sep 1, 5, 9, 12, 13, 23, 28 Oct 3
 During erection on board vessel— 1911 Jan 31, Feb 3, 6, 8, 16, Mar 1
 Total No. of visits (28) Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 29-8-10 Slides 3-10-10 Covers 3-10-10 Pistons 3-10-10 Rods 3-10-10
 Connecting rods 3-10-10 Crank shaft 2-7-10 Thrust shaft 5-9-10 Tunnel shafts 12-9-10 Screw shaft 9-9-10 Propeller 9-9-10
 Stern tube 3-10-10 Steam pipes tested 3-2-11 Engine and boiler seatings 28-9-10 Engines holding down bolts 6-2-11
 Completion of pumping arrangements 8-2-11 Boilers fixed 6-2-11 Engines tried under steam 8-2-11
 Main boiler safety valves adjusted 8-2-11 Thickness of adjusting washers $1\frac{13}{32}$ & $\frac{7}{16}$
 Material of Crank shaft *cast steel* Identification Mark on Do. 504 H.S. Material of Thrust shaft *cast steel* Identification Mark on Do. 1497 AT
 Material of Tunnel shafts α Identification Marks on Do. 1472-3 H.S. 1483-4 AT.P. Material of Screw shafts α Identification Marks on Do. 1479 AT
 Material of Steam Pipes *length Copper seamless 5 dia x 6 H.S.* Test pressure 400 lb.

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

The machinery of this vessel has been constructed under special survey, the material and workmanship found good and efficient, fitted and tested in accordance with the rules and eligible in my opinion for classification with record of + LMC 3-11

It is submitted that
 this vessel is eligible for
 THE RECORD + LMC 3.11.

The amount of Entry Fee.. £ 2 : : When applied for,
 Special £ 25 : 10 : 12-3-11
 Donkey Boiler Fee £ : : When received,
 Travelling Expenses (if any) £ : : 17-3-11

Committee's Minute

TUE. 21 MAR 1911

Assigned

MACHINERY CERTIFICATE
 GRANTED



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