Rpt. 4.

REPORT ON MACHINERY. No. 61146

Received at London Office TUE. OCT. 10. 1911

Date of writing Report Oct. 5th 1911. When handed in at Local Office OCT 9 1911 to Port of NEWCASTLE ON TYNE.

No. in Reg. Book. 49 Lupp | Survey held at North Shields. | Date, First Survey 7th July | Last Survey 4th Oct 1911 | Number of Visits 13

Master | on the Smiths Dock No 3. | Tons Gross / Net

Built at Middlesbrough | By whom built Smiths Dock Co. Ltd | When built 1911

Engines made at North Shields | By whom made Shields Engineering Co. Ltd | when made 1911

Boilers made at South Shields | By whom made J. T. Wallingham & Co. | when made 1911

Registered Horse Power | Owners Smiths Dock Co. Ltd | Port belonging to Middlesbrough

Nom. Horse Power as per Section 28 243. | Is Refrigerating Machinery fitted for cargo purposes No | Is Electric Light fitted No.

Rec. Sug. £244.

ENGINES, &c.—Description of Engines Compound Surface condensing | No. of Cylinders 2 | No. of Cranks 2

Dia. of Cylinders 10" × 22" | Length of Stroke 16" | Revs. per minute 160 | Dia. of Screw shaft as per rule 4.94 as fitted 5 1/16 | Material of screw shaft S. 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 ✓ | 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 ✓ | Length of stern bush 2'-2"

Dia. of Tunnel shaft as per rule 4.42" as fitted 4 9/16" | Dia. of Crank shaft journals as per rule 4.78" 4.64 as fitted 4 7/8" | Dia. of Crank pin 4 7/8" | Size of Crank web 3 1/16" × 9" | Dia. of thrust shaft under collars 4 7/8" | Dia. of screw 6'-0" | Pitch of Screw 6'-3" | No. of Blades 4 | State whether moveable No | Total surface 14.5 ☐ft

No. of Feed pumps One | Diameter of ditto 1 3/4" | Stroke 8" | Can one be overhauled while the other is at work ✓

No. of Bilge pumps One | Diameter of ditto 1 3/4" | Stroke 8" | Can one be overhauled while the other is at work ✓

No. of Donkey Engines One | Sizes of Pumps 6" × 4" × 6" | No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 1 - 1 1/2" diam. 2 - 2" diam. | In Holds, &c. 1 - 2" diam.

No. of Bilge Injections One sizes 2" | Connected to condenser, or to circulating pump Circulating | separate Donkey Suction fitted in Engine room & size Yes. 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 ✓

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 19/9/11 of Stern Tube 19/9/11 Screw shaft and Propeller 20/9/11

Is the Screw Shaft Tunnel watertight No tunnel | Is it fitted with a watertight door ✓ worked from

BOILERS, &c.—(Letter for record (S) ✓) Manufacturers of Steel John Spencer & Sons Ltd ✓

Total Heating Surface of Boilers 470 ☐ft | Is Forced Draft fitted No | No. and Description of Boilers One, Single ended

Working Pressure 140 lbs. | Tested by hydraulic pressure to 280 lbs | Date of test 2/8/11 | No. of Certificate 8172

Can each boiler be worked separately ✓ | Area of fire grate in each boiler 18 ☐ft | No. and Description of Safety Valves to each boiler One, Spring loaded | Area of each valve 4.9 ☐ | Pressure to which they are adjusted 145 lbs. | Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 6" | Mean dia. of boilers 8'-3" | Length 8'-0" | Material of shell plates Steel

Thickness 2/32" | Range of tensile strength 29/33 Tons. | Are the shell plates welded or flanged No | Descrip. of riveting: cir. seams D.R.LAP. long. seams D.R.D.B.S. | Diameter of rivet holes in long. seams See | Pitch of rivets Report | Lap of plates or width of butt straps Attached

Per centages of strength of longitudinal joint rivets / plate | Working pressure of shell by rules | Size of manhole in shell

Size of compensating ring | No. and Description of Furnaces in each boiler | Material | Outside diameter

Length of plain part top / bottom | Thickness of plates crown / bottom | Description of longitudinal joint | No. of strengthening rings

Working pressure of furnace by the rules | Combustion chamber plates: Material | Thickness: Sides | Back | Top | Bottom

Pitch of stays to ditto: Sides | Back | Top | If stays are fitted with nuts or riveted heads | Working pressure by rules

Material of stays | Diameter at smallest part | Area supported by each stay | Working pressure by rules | End plates in steam space:

Material | Thickness | Pitch of stays | How are stays secured | Working pressure by rules | Material of stays

Diameter at smallest part | Area supported by each stay | Working pressure by rules | Material of Front plates at bottom

Thickness | Material of Lower back plate | Thickness | Greatest pitch of stays | Working pressure of plate by rules

Diameter of tubes | Pitch of tubes | Material of tube plates | Thickness: Front | Back | Mean pitch of stays

Pitch across wide water spaces | Working pressures by rules | Girders to Chamber tops: Material | Depth and thickness of girder at centre | Length as per rule | Distance apart | Number and pitch of stays in each

Working pressure by rules | 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

VERTICAL DONKEY BOILER— Manufacturers of Steel No donkey boiler fitted.

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 Radius of do. Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied :— Two top end bolts and nuts, two bottom end bolts & nuts two main bearing bolts and nuts, set of coupling bolts and nuts, one set of feed and bilge pump valves, one propeller, sheet and bar iron, a quantity of bolts and nuts.

The foregoing is a correct description,

Manufacturer.

FOR THE SHIELDS ENGINEERING & DRY DOCK CO., LIMITED

J. Read

Dates of Survey while building — During progress of work in shops - - : 1911 Jul. 7. 12. 19 31. Aug. 3. 17. 31 Sep. 5. 19. 25. 28. 29. Oct. 4

During erection on board vessel - - :

Total No. of visits 13 Is the approved plan of main boiler forwarded herewith Yes.

donkey " " " " " "

Dates of Examination of principal parts—Cylinders 28/7/11 Slides 17/8/11 Covers 17/8/11 Pistons 18/7/11 Rods 28/7/11

Connecting rods 28/7/11 Crank shaft 1/8/11 Thrust shaft 1/8/11 Tunnel shafts 1/8/11 Screw shaft 1/8/11 Propeller 31/8/11

Stern tube 28/7/11 Steam pipes tested 29/9/11 Engine and boiler seatings 29/9/11 Engines holding down bolts 29/9/11

Completion of pumping arrangements 4/10/11 Boilers fixed 29/9/11 Engines tried under steam 4/10/11.

Main boiler safety valves adjusted 4/10/11. Thickness of adjusting washers 3/8" (one valve)

Material of Crank shaft Cryst Steel Identification Mark on Do. 28/2 Material of Thrust shaft Cryst Steel Identification Mark on Do. 28/2

Material of Tunnel shafts Cryst Steel Identification Marks on Do. 28/2 Material of Screw shafts S. Iron Identification Marks on Do. 28/2

Material of Steam Pipes Solid drawn copper No 10 gauge. Test pressure 300 lbs per □

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

The Boiler and Machinery of this Vessel has been constructed under Special Survey and placed on board in accordance with the Society's Rules. They are now in my opinion in safe working condition and the case is respectfully submitted for the notation ✠L.M.C. 10-11 in the Register Book.

Certificate (if required) to be sent to NEWCASTLE ON TYNE

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

It is submitted that this vessel is eligible for THE RECORD ✠LMC 10.11

J.W.D. 10/10/11

The amount of Entry Fee .. £ 1 : 0 : 0 When applied for, OCT 9 1911

Special .. .. £ 8 : 0 : 0

Donkey Boiler Fee .. .. £ 9 : 0 : 0 When received, 3. 11. 11

Travelling Expenses (if any) £ : :

C. J. Hudson.

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

Committee's Minute TUE. JAN. 2—1912

Assigned three 10. 11

MACHINERY CERTIFICATE WRITTEN.