

REPORT ON MACHINERY.

No. 71516
FRI OCT 18 1918

Received at London Office

Date of writing Report

19

When handed in at Local Office

9 - OCT 1918

Port of

NEWCASTLE-ON-TYNE

Dtd. 15th Oct. 1918No. in Survey held at Newcastle on Tyne
Reg. Book.

Date, First Survey 14 Jan. 18

Last Survey 21st Sept 10-18

(Number of Visits 45-49

Gross 2353

Net 1343

Master Smales Built at Sunderland By whom built Swan Hunter & Wigham Richardson When built 1918.

Engines made at Newcastle on Tyne By whom made Swan Hunter & Wigham Richardson When made 1918.

Boilers made at Newcastle on Tyne By whom made Swan Hunter & Wigham Richardson When made 1918.

Registered Horse Power Owners (The Admiralty) Port belonging to London

Nom. Horse Power as per Section 28 417 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

MACHINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 25"-41"-68 Length of Stroke 45 Revs. per minute 80 Dia. of Screw shaft as per rule 12.4 Material of screw shaft as fitted 14.5

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

the propeller boss Yes If the liner is in more than one length are the joints burned length 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 5'0"

Dia. of Tunnel shaft as per rule 12.4 Dia. of Crank shaft journals as per rule 13.62 Dia. of Crank pin 13.4 Size of Crank webs 21.8 Dia. of thrust shaft under

collars 13.4 Dia. of screw 15.6 Pitch of Screw 14.0 No. of Blades 4 State whether moveable No Total surface 7.5 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3.5 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3.5 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps 10.5 x 12.5 9.5 x 18 9.5 x 18 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three - 3" dia In Holds, &c. N°1 HOLD 2-3" dia N°2 HOLD 2-3" dia N°3 HOLD 2-3"

N°4 HOLD 2-3" dia N°5 HOLD 1-3" dia TUNNEL WELL 1-2.5" dia

No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump C.P. 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

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 below

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 2/9/18 of Stern Tube 2/9/18 Screw shaft and Propeller 9/9/18

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Pump Room fitted

OILERS, &c.—(Letter for record S.) Manufacturers of Steel J. Spencer & Sons Ltd

Total Heating Surface of Boilers 6025 Is Forced Draft fitted Yes No. and Description of Boilers 2: Cylindrical: Single

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 2/9/18 No. of Certificate 9144

Can each boiler be worked separately Yes Area of fire grate in each boiler 45 sq. ft. No. and Description of Safety Valves to

each boiler 2: Relief Spring Area of each valve 12.56 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 12" Mean dia. of boilers 16.6" Length 11.9" Material of shell plates Steel

Thickness 1.5 Range of tensile strength 28.2 to 33.6 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap on one

long. seams 67.5 Tube Diameter of rivet holes in long. seams 1.3 Pitch of rivets 9.3 4.76 Lap of plates or width of butt straps 20.5

Per centages of strength of longitudinal joint rivets 84.6 Working pressure of shell by rules 192 lb Size of manhole in shell 16" x 12"

Size of compensating ring 2.5 flanged No. and Description of Furnaces in each boiler 4: Deighton's Material Steel Outside diameter 44.5

Length of plain part top 7.6 Thickness of plates crown 9 Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 194 lb Combustion chamber plates: Material Steel Thickness: Sides 2.3 Back 3 Top 2.3 Bottom 2.3

Pitch of stays to ditto: Sides 8.2 x 10.8 Back 10.8 x 9.2 Top 8.2 x 10.8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 194 lb

Material of stays Steel Area at smallest part 2.03 Area supported by each stay 88 Working pressure by rules 207 lb End plates in steam space:

Material Steel Thickness 1.75 Pitch of stays 24 x 22.2 How are stays secured 4.6 nuts Working pressure by rules 188 lb Material of stays Steel

Area at smallest part 9.62 Area supported by each stay 483 Working pressure by rules 212 lb Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Steel Thickness 8 Greatest pitch of stays 13.4 Working pressure of plate by rules 194 lb

Diameter of tubes 2.2 Pitch of tubes 3.8 x 3.8 Material of tube plates Steel Thickness: Front 4 Back 3 Mean pitch of stays 9.8

Pitch across wide water spaces 13.4 Working pressures by rules 190 lb 206 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 x 12 Length as per rule 35.5 Distance apart 10.8 Number and pitch of stays in each 3: 8.2

Working pressure by rules 195 lb Superheater or Steam chest; how connected to boiler none 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

006749-006759-0200

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. *None*. 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:— 2 Conn Rod Top End Bolts Nuts, 2 Conn Rod Bottom End Bolts Nuts, 2 Main Bearing Bolts Nuts, 6 Shaft Coupling Bolts Nuts, 2 Feed Pump valves, 2 Bilge Pump valves, 2 Main Feed Check valves, 2 Donkey Feed Check valves, 1 Feed Pump Escape Valve & Spring, 2 Main Boiler Safety valves & Spring, 12 Cylinder Covers and Steam Chest Cover Studs Nuts, 12 Furnace Ring Studs Nuts, 9 Boiler Tubes, 1 Set Piston Rings, 1 pair P.R. Crosshead & Thrust, 1 pair Crank Pin & Bushes, 1 set Main Bearing Bushes for Centrif. Pump, 1 set Piston Rings for Fan Engine, Ritts for Feed Donkey Pump & Set of Rings for Pump.

The foregoing is a correct description, _____
 FOR _____
 SWAN, HUNTER & WIGMORE _____
 Manufacturer. _____

Dates of Survey while building { During progress of work in shops - - } *L. J. Tweedy* 1918 Jan 14 Feb 5 Apr 5 12 18 May 27 10 14 28 Jun 5 11 15 17 18 20
 { During erection on board vessel - - - } *Jan 1 12 13 14 15 17 12 22 29 30 Aug 7 12 14 15 20 22 26 27 28 Sep 2 5 6 9 10 11 13 17 20 21*
 Total No. of visits *45* *Apr 3 Oct 9/15* 4 visit Is the approved plan of main boiler forwarded herewith *Standard D.*

Dates of Examination of principal parts—Cylinders *5/9/18* Slides *5/9/18* Covers *5/9/18* Pistons *5/9/18* Rods *22/5/18*
 Connecting rods *12/5/18* Crank shaft *See Report* Thrust shaft *6/9/18* Tunnel shafts *6/18* Screw shaft *2/7/18* Propeller *3/1/18*
 Stern tube *12/5/18* Steam pipes tested *20/9/18* Engine and boiler seatings *20/9/18* Engines holding down bolts *20/9/18*
 Completion of pumping arrangements *20/9/18* Boilers fixed *20/9/18* Engines tried under steam *21/9/18*
 Main boiler safety valves adjusted *21/9/18* Thickness of adjusting washers *Part Boiler 1/2 5/16"* *Studs Boiler 1/2 5/16"*
 Material of Crank shaft *Steel* Identification Mark on Do. *3120 N.* Material of Thrust shaft *Steel* Identification Mark on Do. *4753*
 Material of Tunnel shafts *Iron* Identification Marks on Do. *908* Material of Screw shafts *Iron* Identification Marks on Do. *908*
 Material of Steam Pipes *Lap welded wrought iron* Test pressure *520 lb"*

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

The Engines and Boilers of this vessel were built under special survey and the materials and workmanship are good. On completion they were examined under steam and found to work satisfactorily.

The machinery throughout is now in good and efficient condition and eligible in our opinion to have the record of **L.M.C. 10, 18** marked in the Register Book, when the Spare Gear has been checked and the Electric Installation tested.

Spare Gear examined & checked and Electric light installation tested

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10, 18 F.D.

The amount of Entry Fee .. £ : : When applied for, *15 10 18*
 Special .. £ *52 5 9*
 Donkey Boiler Fee .. £ : : When received, *19 10 18*
 Travelling Expenses (if any) £ : : _____

Committee's Minute _____
 Assigned _____
 TUE. 22 OCT. 1918
 + *L.M.C. 10, 18*
F.D.

MACHINERY CERTIFICATE WRITTEN



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NEWCASTLE ON TYNE

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