

REPORT ON MACHINERY.

No. 6376

SAT. 26 OCT 1907

Port of Belfast

Received at London Office

No. in Survey held at Belfast Date, first Survey 24th Aug 1906 Last Survey 19th Oct 1907

Reg. Book. on the SS. Proquois (Number of Visits 76) Tons { Gross 9201 Net 5442

Master J. W. Scott Built at Belfast By whom built Hawland & Moffatt L^{rs} When built 1907

Engines made at Belfast By whom made Hawland & Moffatt L^{rs} when made 1907

Boilers made at Belfast By whom made Hawland & Moffatt L^{rs} when made 1907

Registered Horse Power 748 Owners Anglo American Oil Coy L^{rs} Port belonging to Belfast

Nom. Horse Power as per Section 748 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Quadruple Expansion of Cylinders 8 No. of Cranks 8

Dia. of Cylinders 21-30-43 1/2-62 length of Stroke 42 Revs. per minute 85 Dia. of Screw shaft 11.97 as per rule 12.03 Material of screw shaft Steel as fitted 13.25

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 57

Dia. of Tunnel shaft 12 1/2 as per rule 12.5 Dia. of Crank shaft journals 12.5 as per rule 11.97 Dia. of Crank pin 12 1/2 Size of Crank webs 18 x 8 1/2 Dia. of thrust shaft under collars 12 1/2 Dia. of screw 16-8 Pitch of Screw 15-8 No. of Blades 4 State whether moveable Yes Total surface 79 sq ft.

No. of Feed pumps 2 Diameter of ditto 6 Stroke 6 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 6 Stroke 6 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 In Engine Room 4-3 1/2 x 2-2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 2-2 1/2 (Drain pots in two ducts)

No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 2-4"

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 None

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 Both

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 Oil and air fuel suction How are they protected Strong wood casing

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 26-6-07 of Stern Tube 12-6-07 Screw shaft and Propeller 26-6-07

Is the Screw Shaft Tunnel watertight No tunnel Is it fitted with a watertight door Yes worked from Engine room

BOILERS, &c.—(Letter for record 9) Manufacturers of Steel P. Salville & Sons L^{rs}

Total Heating Surface of Boilers 18760 sq ft forced Draft fitted Yes No. and Description of Boilers 4 Single End Cyl.

Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 7-5-07 No. of Certificate 896

Can each boiler be worked separately Yes Area of fire grate in each boiler 75 1/2 sq ft. No. and Description of Safety Valves to each boiler Two Westinghouse pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or between a boiler and bunkers or woodwork 18" Mean dia. of boilers 16-1" Length 11-0" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 29-32 tons are the shell plates welded or flanged No Descrip. of riveting: cir. seams Top & Bottom

long. seams Butt diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 2 1/4"

Per centages of strength of longitudinal joint rivets 100.4 Working pressure of shell by rules 246 lbs Size of manhole in shell 16 x 12"

plate 82.8 No. and Description of Furnaces in each boiler 4 Mann. cast material Outside diameter 45 1/2"

Length of plain part top 4" bottom 10" Thickness of plates crown 3 1/2" bottom 3 1/2" Description of longitudinal joint Weld No. of strengthening rings 0

Working pressure of furnace by the rule 236 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back 5" Top 3 1/2" Bottom 3"

Pitch of stays to ditto: Sides 8 1/2 x 7 1/2" Back 7 1/2 x 7 1/2" Top 8 1/2 x 7 1/2" If stays are fitted with nuts or riveted heads Nuts in side Working pressure by rules 229 lbs

Material of stays Steel Diameter at smallest part 1 1/2 to 1 3/4" Area supported by each stay 64 1/2 sq in. Working pressure by rules 218 lbs End plates in steam space:

Material Steel Thickness 1 1/4" Pitch of stays 14 x 15 1/2" How are stays secured Nuts Working pressure by rules 216 lbs Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 24 1/2 sq in. Working pressure by rules 239 lbs Material of Front plates at bottom Steel

Thickness 4 1/2" Material of Lower back plate Steel Thickness 4 1/2" Greatest pitch of stays 12 3/4" Working pressure of plate by rule 218 lbs

Diameter of tube 2 1/2" Pitch of tubes 3 1/4 x 3 1/4" Material of tube plate Steel Thickness: Front 5" Back 13" Mean pitch of stays 4 1/2 x 4 1/2"

Pitch across wide water spaces 13 1/2" Working pressures by rules 349 lbs Material Steel Depth and thickness of girder at centre 10 1/2 x (8 x 2) Length as per rule 35" Distance apart 8 1/2" Number and pitch of stays in each 3-7 1/2"

Working pressure by rules 221 lbs Superheater or Steam chest; how connected to boiler Yes 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

Lloyd's Register Foundation

W389-0029

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 Say _____
 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: *2 Bronze propeller blades for each propeller; one propeller shaft, set piston rings such engine, 2 sets crank pin bushes each set 2 sets top end bushes, 1 section crank shaft, 2 slide valve rods & guides and block, 1 air pump rod; 7 impellers for capacity pump set 2 and all plan to Lloyd's Rules Extra.*

The foregoing is a correct description,
G.W. Cunningham & Co. Ltd.

Dates of Survey while building: During progress of work in shops - *1906, Aug 24, 30 Sept 6, 14, 19, 26 Oct 4, 8, 10, 11, 17, 19, 24, 30, Nov 2, 9*
 During erection on board vessel - *18, 16, 19, 22, 27 Dec 7, 11, 17, 1907, Jan 4, 8, up to Oct 19.*
 Total No. of visits *4/6*

Is the approved plan of main boiler forwarded herewith *Yes*
 " " " " donkey " " " *Yes*
 Dates of Examination of principal parts—Cylinders *13-11-06* Pistons _____ Rods _____
 Connecting rods *22-3-07* Crank shaft *11-11-06* Thrust shaft *10-10-06* Tunnel shafts _____ Screw shaft *23-5-07* Propellers _____
 Stern tube *16-5-07* Steam pipes tested *24-4-07* Engines and boiler seatings *9-7-07* Engines holding down bolts *6-8-07*
 Completion of pumping arrangements *11-10-07* Boilers fixed *9-7-07* Engines tried under steam *19-10-07*
 Main boiler safety valves adjusted *19-10-07* Thickness of adjusting washers *10-12-07*
 Material of Crank shaft *S. Steel* Identification Mark on Do. *LLOYDS* Material of Thrust shaft *W* Identification Mark on Do. *W*
 Material of Tunnel shafts *None* Identification Marks on Do. _____ Material of Screw shafts *W* Identification Marks on Do. *W*
 Material of Steam Pipes *N. Iron & Solid drawn steel* Test pressure *645 lbs & 675 lbs*

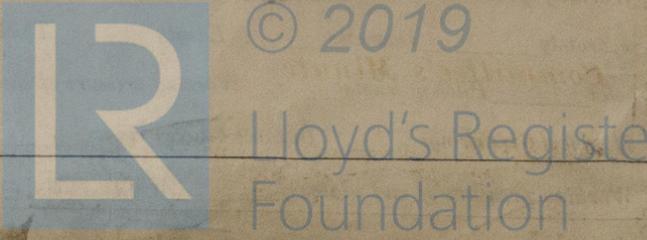
General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The workmanship and the materials used, are of good description throughout, and on trial in Belfast Lough, the machinery worked satisfactorily. An arrangement for using oil fuel for the main boilers, was partly fitted, but was not completed. It is understood that the use of oil fuel, is not contemplated at present. In my opinion, this vessel is eligible for record + L.M.C. 10-07, with notification 'Forced Draft & Electric Light'

It is submitted that
 this vessel is eligible for
THE RECORD. L.M.C. 10.07.
ELEC LIGHT.
F.D.

The amount of Entry Fee.. £ *2-0-0*
 Special £ *57-8-0*
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *23-10-07*
 When received, *26-10-07*

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

Committee's Minute
 Assigned
 + L.M.C. 1007
 F.D. Elec. Light



Certificate (if required) to be sent to _____

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

MACHINERY CERTIFICATE WRITTEN