

REPORT ON MACHINERY.

No. 6240
TUES. JAN 8 1907

Port of *Belfast*

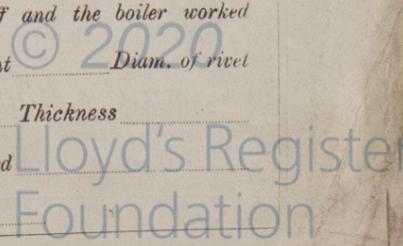
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No. in Survey held at *Belfast* Date, first Survey *May 25 1906* Last Survey *2 Jan 1907*
 Reg. Book. on the *S.S. "Aberni"* (Number of Visits *46*)
 Master *J. O. Power* Built at *Belfast* By whom built *Harland & Wolff L^o* Tons { Gross *3730* Net *2324*
 Engines made at *Belfast* By whom made *Harland & Wolff L^o* when made *1907*
 Boilers made at *Belfast* By whom made *Harland & Wolff L^o* when made *1907*
 Registered Horse Power *528* Owners *African Steamship Coy L^o* Port belonging to *London*
 Nom. Horse Power as per Section 28 *528* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *26-44-74* Length of Stroke *40* Revs. per minute *76* Dia. of Screw shaft *14.98* Material of *S. Steel*
 as fitted *15.5* screw shaft)
 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 *✓* If two
 liners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *63"*
 Dia. of Tunnel shaft *13.7* as per rule *14.38* Dia. of Crank shaft journals *14.75* as fitted *14.75* Dia. of Crank pin *15* Size of Crank webs *21 x 10 3/4* Dia. of thrust shaft under
 collars *14 1/2* Dia. of screw *17-8* Pitch of Screw *16-0* No. of Blades *4* State whether moveable *Yes* Total surface *84 1/2 sq ft.*
 No. of Feed pumps *2* Diameter of ditto *4 1/2* Stroke *28* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4* Stroke *28* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *4* Sizes of Pumps *1 1/2 x 10 1/2 x 18* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *3-3 1/2* *1 1/2 x 12 x 13* Holds, &c. *4-3 1/2 4 4-3*
1 1/2 x 10 x 10
 No. of Bilge Injections *1* sizes *8* Connected to condenser, or to circulating pump *Pumps* Is a separate Donkey Suction fitted in Engine room & size *Yes - 3 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 *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 *Below*
 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 *Fore hold suction* How are they protected *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 *12-19-06* of Stern Tube *12-18-06* Screw shaft and Propeller *12-10-06*
 Is the Screw Shaft Tunnel watertight *State do* Is it fitted with a watertight door *Yes* worked from *Upper deck*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *R. Colville Lons.*
 Total Heating Surface of Boilers *7395 sq ft* Is forced Draft fitted *Yes* No. and Description of Boilers *3 Single End Cylind^o*
 Working Pressure *205 lbs* Tested by hydraulic pressure to *410 lbs* Date of *19-10-06* No. of Certificate *1387*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *57 1/2 sq ft* No. and Description of Safety Valves to
 each boiler *2 - Direct Spring* Area of each valve *8' 2 1/2 sq ft* Pressure to which they are adjusted *205 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers *on uptakes* and bunkers *on woodwork* *5 ft* Mean dia. of boilers *14'-5"* Length *11'-9"* 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 *Lap Double*
 long. seams *Butt Double* Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *9 1/2"* Lap of plates or width of butt straps *22 1/4"*
 Per centages of strength of longitudinal joint rivets *94.4* Working pressure of shell by rules *236 lbs* Size of manhole in shell *16" x 12"*
 plate *84.2* Size of compensating ring *McNeil* No. and Description of Furnaces in each boiler *3 - Brown's Compound Steel* outside diameter *46 7/8"*
 Length of plain part top *9"* bottom *9"* 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 rules *211 lbs* combustion chamber plates: Material *Steel* Thickness: Sides *19-21/32* Back *19-21/32* Top *19-21/32* Bottom *7/8"*
 Pitch of stays to ditto: Sides *7 1/4" x 7 1/8"* Back *7 1/4" x 7 1/8"* Top *9 1/4" x 7 1/8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *209 lbs*
 Material of stay *Steel* Diameter at smallest part *1 5/8"* Area supported by each stay *5 7/8"* Working pressure by rules *232 lbs* end plates in steam space:
 Material *Steel* Thickness *1 1/8"* Pitch of stays *18 1/2" x 15 1/4"* How are stays secured *Nuts* Working pressure by rules *238 lbs* Material of stays *Steel*
 Diameter at smallest part *2 1/8" x 2 1/8"* supported by each stay *28 3/4" x 2 1/8"* Working pressure by rules *225 lbs* Material of Front plates at bottom *Steel*
 Thickness *1 5/8"* Material of Lower back plate *Steel* Thickness *1 5/8"* Greatest pitch of stays *12 3/4"* Working pressure of plate by rules *413 lbs*
 Diameter of tube *2 1/2"* Pitch of tubes *3 3/4" x 3 3/4"* Material of tube plates *Steel* thickness: Front *15/16"* Back *13/16"* Mean pitch of stays *7 1/2" x 7 1/2"*
 Pitch across wide water spaces *13 3/4"* Working pressures by rules *388 lbs* Chamber tops: Material *Iron* Depth and
 thickness of girder at centre *9" x (8 x 2)* Length as per rule *29 1/2"* Distance apart *8' 9 1/4"* Number and pitch of stays in each *3-7 1/2"*
 Working pressure by rules *215 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

If not, state whether, and when, one will be sent. If a Report also sent on the Hull of the Ship?



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 plate _____ Stayed by _____

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

SPARE GEAR. State the articles supplied:— 1 Propeller Shaft: set piston rings & springs for each cylr: H.P. & L.P. slide valve & spindles: pair crank pin bushes
Impeller for Cent. Air Pump: air pump rod & bucket: 20 Condenser tubes: escape valve & springs set: 2 call gear to L. & R. Rules extra.

The foregoing is a correct description,

Manufacturer.

Harland & Wolff Ltd

Dates of Survey while building: During progress of work in shops - 1906. May 21, 29, 31, June 8, 11, 14, 19, 25, July 6, Aug 3, 9, 14, 24, 30
During erection on board vessel - Sept: 6, 8, 14, 19, 26, Oct: 4, 8, 9, 10, 11, Nov: 5, 2, Jan 2 1907
Total No. of visits 4/6

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 11-6-06 Slides _____ Covers to Pistons _____ Rods _____

Connecting rods 13-17-06 Crank shaft 6-7-06 Rust shaft _____ Tunnel shaft to Screw shaft 10-10-06 Propeller 30-8-06

Stern tube 30-8-06 Steam pipes tested 22-11-06 Engine boiler seatings 28-11-06 Engines holding down bolts 28-11-06

Completion of pumping arrangements 6-12-06 Boilers fixed 28-11-06 Engines tried under steam 6-12-06

Main boiler safety valves adjusted 6-12-06 Thickness of adjusting washers $\frac{9}{16}$ to $\frac{15}{32}$

Material of Crank shaft S. Steel Identification Mark on Do. Lloyd's Material of Thrust shaft do Identification Mark on Do. do

Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. do

Material of Steam Pipes Solid drawn steel Test pressure 620 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 materials and the workmanship are of good description, and on trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record A.L.M.C. 1-07, with notification Forced Draft & Electric Light.

It is submitted that this vessel is eligible for THE RECORD

A.L.M.C. 1-07. F.D. ELEC. LIGHT.

R.S.
8.1.07
Pub
8.1.07

The amount of Entry Fee. . . £ 3 : 0 :
Special £ 46 : 8 :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : :

When applied for, 5-1-07

When received, 11/1/07

R. J. Pennington
Engineer/Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. JAN 11 1907

Assigned

+ L.M.C. 1. 07
F.D. Elec. Light

MACHINERY CERTIFICATE WRITTEN.



Lloyd's Register Foundation

Certificate (if required) to be sent to this office

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