

REPORT ON MACHINERY. 3423

No. 3423

Port of Belfast

Received at London Office

17 MAY. 88

No. in Survey held at Belfast

Reg. Book.

Date, first Survey 20th July 1886 Last Survey 12th May 1888

(Number of Visits 85) Net 2102

14 Tons on the Screw Steamer "Lucia"

Gross 3223

Master C. H. Season Built at Belfast By whom built Harland & Wolff When built 1887-8

Engines made at Belfast By whom made Harland & Wolff when made 1887-8

Boilers made at Belfast By whom made Harland & Wolff when made 1887-8

Registered Horse Power 320 Owners City of Liverpool S.N.B. Port belonging to Liverpool

2. ENGINES, &c.—

Description of Engines Triple Expansion 3 cyl: + 3 cranks

Diameter of Cylinders 24 1/2, 37, 64 Length of Stroke 48 No. of Rev. per minute 65 Point of Cut off, High Pressure 35 1/2 Low Pressure 27

Diameter of Screw shaft 13 1/2 Diam. of Tunnel shaft 12 1/2 Diam. of Crank shaft journals 13 1/2 Diam. of Crank pin 13 1/2 size of Crank webs 18 1/2 x 10

Diameter of screw 16-9 Pitch of screw 16-3 to 19-0 No. of blades four state whether moveable yes total surface 71.2 Sq. ft.

No. of Feed pumps Two diameter of ditto 3 1/2 Stroke 28 Can one be overhauled while the other is at work yes

No. of Bilge pumps Two diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work yes

Where do they pump from Feed from hotwell + Bilge from all bilges in holds + Machinery spaces

No. of Donkey Engines Three Size of Small 3 1/2, Medium 4, Large 5 Where do they pump from Sea, ballast tanks, hotwell all bilges, distiller, boilers & exhaust tank.

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections One and sizes 5" Are they connected to condenser, or to circulating pump Circulating pump.

How are the pumps worked by levers & links from the two after engines.

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Cocks & valves.

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 beck discharge How are they protected boxed in with wood.

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock 3rd November 1887 before launching.

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from upper deck

3. BOILERS, &c.—

Number of Boilers Two Description circular, oblique ended, multitubular Whether Steel or Iron Steel.

Working Pressure 155 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 19th March 1888.

Description of superheating apparatus or steam chest None fitted.

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately yes

No. of square feet of fire grate surface in each boiler 74.25 Description of safety valves Lockburn's Sp. 7 No. to each boiler Two

Area of each valve 9.62 Are they fitted with easing gear yes No. of safety valves to superheater and are screen fitted on bunker walls area of each valve ✓

Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 12 1/2" Diameter of boilers 11-9"

Length of boilers 17-0" description of riveting of shell long. seams Double & lap seams Double & lap Thickness of shell plates 1 1/8"

Diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 6 3/4" Lap of plating 18 1/2 x 1 1/8" B. traps

Percentage of strength of longitudinal joint 83 % working pressure of shell by rules 163 lbs size of manholes in shell 15 x 12"

Use of compensating rings Rect. plate steel 27 x 24 1/2 x 1" No. of Furnaces in each boiler four

Outside diameter 3-7" length, top 6-11" bottom 6-11" thickness of plates 9/16" description of joint Butt if rings are fitted ✓

Greatest length between rings ✓ working pressure of furnace by the rules 163 lbs combustion chamber plating, thickness, sides 9/16" top 9/16"

Pitch of stays to ditto, sides 7 1/2 x 7 1/2" back 7 1/2 x 7 1/2" stays are fitted with nuts or riveted heads Butt working pressure of plating by rules 162

Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 176 lbs plates in steam space, thickness 7/8"

Pitch of stays to ditto 16 x 14" how stays are secured Double nuts & rivets working pressure by rules 184 lbs with 240 lb diameter of stays at smallest part 2 3/4" Iron working pressure by rules 160 lbs Front plates at bottom, thickness 1 1/8" Back plates, thickness ✓

Greatest pitch of stays ✓ working pressure by rules ✓ Diameter of tubes 3 1/2" S.W.C. pitch of tubes 4 1/8 x 4 1/2" thickness of tube 6"

Plates, front 7/8" back 25" how stayed Stay tubes pitch of stays 9 x 9 1/2" width of water spaces 6" but boxes & shell

Diameter of Superheater or Steam chest ✓ length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. of rivet holes ✓

Pitch of rivets ✓ working pressure of shell by rules ✓ diameter of flue ✓ thickness of plates ✓ If stiffened with rings ✓

Distance between rings ✓ working pressure by rules ✓ end plates of superheater, or steam chest; thickness ✓ how stayed ✓

Superheater or steam chest; how connected to boiler ✓

DONKEY BOILER— Description *Cylindrical single ended Multitubular (see form attached)*
Made at *Belfast* by whom made *Victor Coates & Co* when made *1887* where fixed *on upper deck*
Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *22* fire grate area _____ description of safety
valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
enter the donkey boiler *No.* diameter of donkey boiler _____ length _____ description of riveting _____
Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
per centage of strength of joint _____ thickness of crown plates _____ stayed by _____
Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____
Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____
Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 propeller blades; 1 air pump rod, bucket & head
valve seat with valves; 1 circulating pump rod bucket & valves; 2 slide valve
spindles; 1 pair of crank pin brasses; 1 set of feed & bilge pump valves with sea
6 pump ring bolts; 1 set of coupling bolts; 2 main bearing bolts; 1 set of con. rod top &
The foregoing is a correct description, {bot. end bolts; 8 studs & nuts for propeller blades; an
Harland & Wolff Manufacturer. {assorted quantity of bolts nuts & iron bars &c &c.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The boilers and other parts of the machinery have been constructed &
fitted in vessel in accordance with the plans approved of by the
Committee, the Secretary's letters dated 28th June, 1886; & 16th June, 1887,
in accordance with or equivalent to the Rules of the Society for
the Special Survey on New Machinery and to the Satisfaction
the undersigned;
The steel ^{used} in the construction of the Boilers has been tested as
required by the Rules.*

*The Boilers when tested under hydraulic and Machinery in
steam pressures, gave entire Satisfaction.*

*The safety valves were adjusted under steam to 155 lbs. on
main, & 60 lbs. on Auxiliary boiler.*

*The material used in the construction of Machinery and
the workmanship throughout are good & Satisfactory.*

*The Machinery is in my opinion eligible for the Notification
L.M.C. 5-88 and I would respectfully recommend that
the same be the favourable consideration of the Committee
and be entered in the Society's Register Book.*

*This is submitted that
this vessel is eligible
to have the notification
L.M.C. 5-88 recorded
J.M. 24 17/5/88*

The amount of Entry Fee _____
Special _____
Donkey Boiler Fee _____
Certificate (if required) _____
To be sent as per margin. _____
(Travelling Expenses, if any, £ _____)

Committee's Minute
+ L.M.C. 5/88

FRIDAY 18 MAY 1888

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