

# REPORT ON MACHINERY.

Port of Newcastle on Tyne

Received at London Office **FRI. 6 OCT 1905**

No. in Survey held at Newcastle Date, first Survey May 24 Last Survey 2 Oct 1905

Reg. Book. on the Steel S.S. "LESTRIS" (Number of Visits 23)

Master G. Badger Built at Newcastle By whom built Swan Hunter & W Richardson When built 1905

Engines made at Newcastle By whom made Swan Hunter & W Richardson Ltd when made 1905

Boilers made at Do By whom made Do when made 1905

Registered Horse Power 210 Owners Cork S.S. Co. Ltd Port belonging to Cork

Nom. Horse Power as per Section 28 210 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 21-33 1/2-54 Length of Stroke 39 Revs. per minute 73 Dia. of Screw shaft 11-45 Material of screw shaft Steel

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 Yes

Is 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 Yes

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two Yes

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 46

Dia. of Tunnel shaft 10-05 Dia. of Crank shaft journals 10-55 Dia. of Crank pin 10 5/8 Size of Crank webs 16 1/2 x 6 7/8 Dia. of thrust shaft under 10 7/8

blades 10 7/8 Dia. of screw 14-3 Pitch of screw 16-0 No. of blades 4 State whether moveable No Total surface 70 sq ft

No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 22 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/4 Stroke 22 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps B. 6 x 7 1/2 x 6. F. 6 x 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Holds, &c. M H Three 2 1/2 A H. Three 2 1/2

Engine Room Three 2 1/2 In Holds, &c. M H Three 2 1/2 A H. Three 2 1/2

Tunnel Well One 2 1/2

No. of bilge injections 1 sizes 4 Connected to condenser, or to circulating pump CP 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 Yes

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

Are that pipes are carried through the bunkers Ford Bilge Pipes How are they protected Strong Wood Casings

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock White build Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.— (Letter for record 7) Total Heating Surface of Boilers 3564 sq ft Is forced draft fitted No

No. and Description of Boilers 2 Cylindrical S Ends Working Pressure 160 Tested by hydraulic pressure to 320

Year of test 23-8-05 Can each boiler be worked separately Yes Area of fire grate in each boiler 53-5 sq ft No. and Description of safety valves to 2

boiler Two Spring Area of each valve 5-9 Pressure to which they are adjusted 165 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 3-0 <sup>inside</sup> ~~mean~~ dia. of boilers 13-7 Length 10-6 Material of shell plates S

Thickness 1 Range of tensile strength 28 3/4 Are they welded or flanged No Descrip. of riveting: cir. seams d lap long. seams d straps

Diameter of rivet holes in long. seams 1/8 Pitch of rivets 6 15/16 Lap of plates 17 1/2 width of butt straps 17 1/2

Percentages of strength of longitudinal joint 85 Working pressure of shell by rules 160 Size of manhole in shell 16 x 12

Diameter of compensating ring 9 x 1 No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 40 1/2

Thickness of plain part top 29 bottom 28 Thickness of plates crown 3/4 bottom 3/4 Description of longitudinal joint d strap No. of strengthening rings Yes

Working pressure of furnace by the rules 170 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 31/32

No. of stays to ditto: Sides 9 1/4 x 9 Back 10 x 8 Top 9 1/4 x 9 If stays are fitted with nuts or riveted heads nut Working pressure by rules 162

Material of stays Iron Diameter at smallest part 2-03 Area supported by each stay 83-25 Working pressure by rules 182 End plates in steam space: S

Material S Thickness 1 3/32 Pitch of stays 20 3/8 x 17 How are stays secured d n + w Working pressure by rules 161 Material of stays S

Thickness at smallest part 5-56 Area supported by each stay 346-4 Working pressure by rules 160 Material of Front plates at bottom S

Thickness 13/16 Material of Lower back plate S Thickness 3/4 Greatest pitch of stays as per plan Working pressure of plate by rules 2160

Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 5/8 Material of tube plates S Thickness: Front 13/16 Back 13/16 Mean pitch of stays 11 3/4

Distance across wide water spaces 14 1/2 Working pressures by rules 171 Girders to Chamber tops: Material S Depth and 171

Thickness of girder at centre 9 x 1 1/4 Length as per rule 30 3/4 Distance apart 9 Number and pitch of Stays in each 2-9 1/4

Working pressure by rules 168 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked Yes

Material Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet Yes

Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

Reinforced with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

RETAIN

Lloyd's Register Foundation

DONKEY BOILER— No. Description *See attached sheet*

Made at By whom made When made Where fixed  
Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves  
No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boiler  
enter the donkey boiler Dia. of donkey boiler Length Material of shell plates Thickness Range of strength  
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 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 Descript  
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 uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— *Propeller, two top end, two bottom end, two main bearings & one set coupling bolts, two & bilge valves, piston rings, assorted bolts & nuts, a bar of iron & other small gear*

FOR *The foregoing is a correct description,*  
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer.

Dates of Survey while building  
During progress of work in shops— *1905. May 24 June 28. 1622 July 17. 18. 24. 26. Aug. 5. 14. 18. 21. 23. 24. 30. Sep. 5. 6. 7. 13. 25 Oct. 2*  
During erection on board vessel —  
Total No. of visits *23* Is the approved plan of main boiler forwarded herewith *Yes*  
" " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The material & workmanship is good.  
The Mach<sup>y</sup> has been built under special survey  
is eligible in my opinion for classification & the  
record + I.M.C.10.05*

*It is submitted that  
this vessel is eligible for  
THE RECORD H.M.C.10.05. ELEC:LIGHT.*

*Emb.  
6.10.05.  
J.S.  
6.10.05*

*Newcastle*

The amount of Entry Fee... £ *2* : . . . . .  
Special . . . . . £ *30* : *10* : . . . . .  
Donkey Boiler Fee . . . . . £ . . . . .  
Travelling Expenses (if any) £ . . . . .  
When applied for, *4<sup>th</sup> Oct 1905*  
When received, *Howe 4<sup>th</sup> Oct 1905*

*John H Heck*  
Engineer Surveyor to Lloyd's Register of British & Foreign Ships

Committee's Minute *FRI. 6 OCT 1905*  
Assigned *+ L.M.C. 10.05*  
*Elec. light*



MACHINERY CERTIFICATE WRITTEN.