

REPORT ON MACHINERY.

Port of Belfast

MON 21 FEB 1893

Received at London Office

No. in Survey held at Belfast
Reg. Book.Date, first Survey April 25th 1897 Last Survey July 17th 1898(Number of Visits 35)

on the

Steel screw steamer "Winifreda"Tons $\left\{ \begin{array}{l} \text{Gross } 6833 \\ \text{Net } 4423 \end{array} \right.$

Master.

Built at BelfastBy whom built Harland & Wolff Ltd.When built 1894-8Engines made at BelfastBy whom made Harland & Wolff Ltd.when made 1894-8Boilers made at BelfastBy whom made Harland & Wolff Ltd.when made 1894-8Registered Horse Power 772Owners J. Leyland & Co. Ltd.Port belonging to LiverpoolNom. Horse Power as per Section 28 772

ENGINES, &c.—

Description of Engines

Triple Expansion

No. of Cylinders

ThreeDiameter of Cylinders 32 : 54 : 90 Length of Stroke 66 Revolutions per minute 68 Diameter of Screw shaft as per rule 17.92Diameter of Tunnel shaft as per rule 16.22 Diameter of Crank shaft journals 18 1/4 Diameter of Crank pin 18 1/4 Size of Crank webs 13 1/8 x 24 1/2Diameter of screw 20" 3 Pitch of screw 25" 0 No. of blades 4 State whether moveable Yes Total surface 118No. of Feed pumps ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work Weirs feed pumps onlyNo. of Bilge pumps Two Diameter of ditto 5 Stroke 36 Can one be overhauled while the other is at work YesNo. of Donkey Engines Five Sizes of Pumps See other side No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Three 3 1/2 In Holds, &c. No 1. One 3 1/2 No 2. One 3 1/2No 3. One 3 1/2 No 4. One 3 1/2 No 5. Two 3 1/2 No 6. One 3 1/2 No 7. One 3 1/2 Tunnies well 2 1/2No. of bilge injections 1 sizes 10 1/2 Connected to condenser, or to circulating pump Cir. p. Is a separate donkey suction fitted in Engine room & size Yes 3 1/2Are 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 NoneAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger valves. Smaller cocks.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 BelowAre 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 YesThat 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 YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from Deck levelBOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 12416 Natural draughtNo. and Description of Boilers Two double & two single ended Working Pressure 190 lb Tested by hydraulic pressure to 380 lbDate of test 1.12.97 Can each boiler be worked separately Yes Area of fire grate in each boiler 99' 0" E. No. and Description of safety valves toeach boiler Three Cockburn's O.E. Area of each valve 15.03' 0" E. Pressure to which they are adjusted 195 lb Are they fittedTwo S.E. 11.04' 0" E. 195 lb Yes Smallest distance between boilers or uptakes and bunkers or woodwork 1' 3" Mean diameter of boilers 15' 3"Pitch of easing gear Yes Material of shell plates Steel Thickness 1 1/32 Description of riveting: circum. seams Keble & double long. seams Steel strapsLength 17' 6" Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" & 5" Top of plates or width of butt straps 1" 10 1/4 x 1 1/2 x 1 1/2Percentages of strength of longitudinal joint 89.7 Working pressure of shell by rules 214 lb Size of manhole in shell 16" x 12"Size of compensating ring 2' 7" x 2' 3" x 1 1/2" No. and Description of Furnaces in each boiler 6 Morrison Material Steel Outside diameter 48 1/4Length of plain part top bottom ✓ Thickness of plates 5/8" Description of longitudinal joint Welded No. of strengthening rings ✓Working pressure of furnace by the rules 208 Combustion chamber plates: Material Steel Thickness: Sides 19/32 Back 19/32 Top 11/16 Bottom 3/4Pitch of stays to ditto: Sides 8" x 7 1/8" Back 8" x 7 1/8" Top 8" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 190 lbMaterial of stays Steel Diameter at smallest part 1 3/8" 1 1/2" 1 5/8" Area supported by each stay 63 x 72 Working pressure by rules 190 lb End plates in steam space:Material Steel Thickness 1" Pitch of stays 17 1/2" x 16" How are stays secured Double nuts & large washers Working pressure by rules 190 lb Material of stays SteelDiameter at smallest part 2 3/4" Area supported by each stay 280 Working pressure by rules 210 Material of Front plates at bottom SteelThickness 15/16 Material of Lower back plate Steel Thickness 15/16 Greatest pitch of stays As appx Working pressure of plate by rules 190Diameter of tubes 3" Pitch of tubes 4 1/4" Material of tube plates Sal Thickness: Front 7/8 & 15/16 Back 3/4 O.E. Mean pitch of stays 8 1/2"Pitch across wide water spaces 14 1/4" Working pressures by rules 190 lb Girders to Chamber tops: Material W. I. Depth andThickness of girder at centre 6 1/2" x two 7/8" suspended O.E. 42 O.E. Distance apart 9" max Number and pitch of Stays in each 4 at 8" O.E.Working pressure by rules 192 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler workedseparately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivetPitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓Fitted 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 ✓

DONKEY BOILER— Description *None*

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 boilers can enter the donkey boiler _____

Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____

Description of riveting long. seams _____ Diameter 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 _____ 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 uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *Two bottom end & two top end bolts & nuts for connecting rods. 2 Main bearing bolts & nuts. 8 Coupling bolts for crank shaft & 8 for turn. sh. 2 pr. blades & 6 studs. 11 & 12 piston rings. 8 valves for Weir's feed pump. 2 bilge pump valves. A.P. bucket & rod. foot & head valves. Centrif. fan & shaft. 10 safety valve springs. Valve spindle. 2 feed escape springs. Bolts & nuts various parts. The foregoing is a correct description, Boiler & condenser tubes. 100 Assorted bolts & nuts, etc.*

Harland & Wolff & Co. Manufacturer.

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

Dates of Survey while building: During progress of work in shops— April 23rd 1897. May 14. 21. June 3. 21. July 26. August 13. 17. 24. 27. During erection on board vessel— Sept 1. 15. 21. 30. Oct 1. 18. 26. 28. 29. Nov 11. 16. 23. Dec 1. 3. 6. 7. 8. 13. Total No. of visits 35. Jan 3. 5. 6. 20. 24. May 10. 17. 1898

Donkey Pumps: *Weir's duplex feed 12 1/2 x 9 1/2 x 2.6. Maudslays duplex 9 x 6 1/2 x 9 (E.R. & Co.) No 9 Pulsometer for ballast & bilge. No 6 Pulsom. for winch condenser. Clarke Chapman & Co's dup. 8 x 5 x 10 for fire. A Railton & Campbell's feed filter, & a 40 ton Luggins evaporator are fitted. The furnaces are fitted with Henderson's self-cleaning fire bars.*

These engines & boilers have been made & fitted under special survey & in accordance with the approved tracings of the boilers. The workmanship is good throughout. The main steam pipes have been tested as required by the Rules & found satisfactory.

The electric lighting installation is by Messrs W.A. Allen, Son & Co & the report will be sent in the course of a few days.

The boiler tracings are enclosed herewith.

The machinery in my opinion renders the vessel eligible for the notation + Lm C 2.98.

It is submitted that this vessel is eligible for THE RECORD.

+ Lm C. 2.98 Elec Light.

Certificate (if required) to be sent to

The amount of Entry Fee. £ 3 : 0 :
Special .. £ 58 : 12 :
Donkey Boiler Fee .. £
Travelling Expenses (if any) £

When applied for, 18th Feb. 1898
When received, 22.2.98

A. L. Jones
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES, 22 FEB 1898

Assigned

+ Lm C. 2.98
Elec Light.



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