

REPORT ON MACHINERY.

Port of Belfast

WED. 27 MAR 1895
Received at London Office

No. in Survey held at Belfast
Reg. Book.

Date, first Survey June 28th 1894 Last Survey March 21st 1895

(Number of Visits 36)

on the Steel screw steamer "Star of New Zealand"

Tons { Gross 4712
Net 3037

Master John Simpson Built at Belfast

By whom built Workman Clark & Co. Ltd.

When built 1895

Engines made at Belfast

By whom made Workman Clark & Co. Ltd.

when made 1895

Boilers made at "

By whom made "

when made "

Registered Horse Power 500

Owners "Star of New Zealand" S.S. Co. Ltd.

Port belonging to Belfast

Nom. Horse Power as per Section 28 394

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

Diameter of Cylinders 26 1/2 : 44 : 73 Length of Stroke 48 Revolutions per minute 65 Diameter of Screw shaft as per rule 13.2
as fitted 14"

Diameter of Tunnel shaft as per rule 12.5.6 Diameter of Crank shaft journals 14" Diameter of Crank pin 14" Size of Crank webs 20 1/2 x 9 1/2
as fitted 13 1/2"

Diameter of screw 14.6" Pitch of screw 18.6" No. of blades 4 State whether moveable yes Total surface 90 sq. ft.

No. of Feed pumps two Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work yes

No. of Bilge pumps two Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes

No. of Donkey Engines three Sizes of Pumps E.R. donkey 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
weirs duplex 7 x 9 x 21 Ballast duplex 7 x 9 x 9 In Holds, &c. No 1 hold, two 3 1/2". No 2 hold, two 3 1/2".
No 3 hold, two 3 1/2". No 4 hold, one 3 1/2". Tunnel well suction 3 1/2"

In Engine Room three 3 1/2"

No. of bilge injections 1 sizes 7/8" Connected to condenser, or to circulating pump circ. p. 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 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 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 none; (carried inside tanks) How are they protected -

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible 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 before launch Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from upper E. R. Gratings.

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 6270

No. and Description of Boilers Three single-ended Working Pressure 180 lb Tested by hydraulic pressure to 360

Date of test 19/1/95 Can each boiler be worked separately yes Area of fire grate in each boiler 50.8 sq. ft. No. and Description of safety valves to each boiler Two Adams patent Area of each valve 8.29 sq. in. Pressure to which they are adjusted 185 lb Are they fitted with casing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork several feet Mean diameter of boilers 13.3"

Length 11.6" Material of shell plates steel Thickness 1 1/4" Description of riveting: circum. seams middle triple ends double. long. seams double straps

Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" x 4 1/2" Top of plates or width of butt straps 19 3/16" x 3 1/32"

Per centages of strength of longitudinal joint 89.25 Working pressure of shell by rules 193 Size of manhole in shell 16 x 12"
plate 85.5

Size of compensating ring 2.4" x 2.0" x 7/8" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 41"

Length of plain part top - Thickness of plates crown 1 1/32" Description of longitudinal joint welded No. of strengthening rings -
bottom - bottom 1/32"

Working pressure of furnace by the rules 199 Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 7 3/4" x 6" Back 7 3/4" Top 7 3/4" x 6" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays steel Diameter at smallest part 1 3/8" x 1 1/2" Area supported by each stay 60.772 sq. in. Working pressure by rules 196 End plates in steam space: Material steel Thickness 1 1/16" Pitch of stays 15 1/4" x 14 3/4" How are stays secured double nuts small washers Working pressure by rules 230 Material of stays steel

Diameter at smallest part 2 3/8" Area supported by each stay 225 sq. in. Working pressure by rules 182 Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 23/32" Greatest pitch of stays as appr. Working pressure of plate by rules 180

Diameter of tubes 2 1/2" Pitch of tubes 3 7/8" x 3 7/8" Material of tube plates steel Thickness: Front 7/8" Back 3/4" Mean pitch of stays 7 1/2"

Pitch across wide water spaces 14" double 7/8" x 10" Working pressures by rules 180 lb Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 5/8" x 1 1/2" Length as per rule 26 1/2" Distance apart 7 3/4" Number and pitch of Stays in each Three at 6"

Working pressure by rules 205 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 casing gear -

DONKEY BOILER— Description *No donkey boiler.*

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. _____
Plates _____
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 steel propeller blades. Two top & two bottom-end bolts & nuts. Two main bearing bolts & nuts. 2 eccentric strap bolts & nuts. 6 coupling bolts & nuts. 12 cond. tubes. 2 feed & 2 bilge pump valves. 2 Cy. escape valves & pump. Feed escape valve & pump. 2 safety valve & pump. Pair crank pin bushes. Pair piston rod bushes. Pump rod. 2 S.V. spindles. 6 propeller studs & nuts. 12 pump ring bolts & nuts. 2 Cr. pump guards & studs. Manufacturer. 2 A.P. guards & nuts. Studs for glands & covers. 100 fine bars. Assorted bolts etc.*

The foregoing is a correct description,

THE WORKMAN, CLARK & CO., LIMITED

W. H. Bell

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery has been built under special survey; the boilers in accordance with the approved tracing, & of steel tested as required at the Steel Works. The workmanship is good throughout. The boilers & each length of main steam pipe have been tested by water to double the working pressure. Forced draught is supplied to the furnaces on the Howden system. The vessel ran a satisfactory trial trip in the Belfast Lough on the 21st inst. Accompanying this report are photo prints of boilers, & engine room pumping arrangements; tracing of hold pumping arrangements, & certificate for shaft forgings. The machinery in my opinion renders the vessel eligible for the notification + L.M.C. 3.95 to be recorded.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3-95

W.A. 27.3.95

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 3 : 0 : When applied for,
Special £ 39 : 14 : *23rd Mar 1895*
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : 5 : When received, *2/4/95*

W.A.

A. L. Jones

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

Committee's Minute

FRIDAY 29 MAR 1895

Assigned

+ L.M.C. 3, 95



© 2019 Lloyd's Register Foundation

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