

REPORT ON MACHINERY.

Port of Belfast

MON. 5 DEC 1892

Received at London Office

No. in Survey held at Belfast Date, first Survey March 9th Last Survey Novem^r 30th 1891
Reg. Book. (Number of Visits 34)

18 sup on the Steel screw steamer "Sagamore" Tons { Gross 5035
Net 3280

Master Sam^l Walters Built at Belfast By whom built Harland & Wolff, Lim When built 1892

Engines made at Belfast By whom made Harland & Wolff, Lim when made 1892-11

Boilers made at Belfast By whom made Harland & Wolff Lim when made 1892

Registered Horse Power 593 Owners Sagamore Steamship Co, Lim Port belonging to Liverpool
(Geo Warren & Co, Mgrs)

Nom. Horse Power as per Section 28 592

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

Diameter of Cylinders 31 : 49 : 79 Length of Stroke 60 Revolutions per minute 68 Diameter of Screw shaft as per rule 15.02
as fitted 16 1/2

Diameter of Tunnel shaft as per rule 14.27 Diameter of Crank shaft journals 16 1/2 Diameter of Crank pin 16 1/2 Size of Crank webs 11 x 22
as fitted 15 1/2 shaped

Diameter of screw 19 ft Pitch of screw 21 " 0 " No. of blades 4 State whether moveable yes Total surface 95 sq. ft.

No. of Feed pumps one Diameter of ditto 6 " Stroke 30 " Can one be overhauled while the other is at work ✓

No. of Bilge pumps two Diameter of ditto 5 " Stroke 30 " Can one be overhauled while the other is at work yes

No. of Donkey Engines six Sizes of Pumps see other side No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 " suction In Holds, &c. No 1 hold, for 3 " suction No 2 hold, one 3 "

No 3 hold, three 3 " suction No 4 hold, two 3 " bilge suction No 5 hold, one 3 " suction aft hold well 3 " suction

No. of bilge injections 1 sizes 12 ins Connected to condenser, or to circulating pump circ. p. Is a separate donkey suction fitted in Engine room & size yes 2 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 valves & 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 Ballast & bilge pipes How are they protected strong 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock examined before launching Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from main deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 10500

No. and Description of Boilers Two double ended & one single ended Working Pressure 160 Tested by hydraulic pressure to 320

Date of test 16.8.92 Can each boiler be worked separately yes Area of fire grate in each boiler 112 do. end 50 sup. end No. and Description of safety valves to

each boiler two, Cockburn's Area of each valve 15.03 d. s. e. 6.49 s. e. pressure to which they are adjusted 165 lbs Are they fitted

with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" guard plate clean diameter of boilers 15.6 do. end 14.0 sup. end

Length 17' 0" 10' 0" Material of shell plates steel Thickness 1 3/8 d. s. 1 1/4 s. e. Description of riveting: circum. seams ends double long seams double straps
others treble

Diameter of rivet holes in long. seams 1 3/8 " Pitch of rivets 9 " outside rows Lap of plates or width of butt straps 20 1/2 " x 1 1/16 d. s. e.

Per centages of strength of longitudinal joint 88.9 d. e. 97.8 s. e. Working pressure of shell by rules 182 d. e. 181 s. e. Size of manhole in shell 16 " x 12 "

Size of compensating ring 31 x 27 x 1 1/4 d. s. e. No. and Description of Furnaces in each boiler 6 corrugated, d. s. e. Material steel Outside diameter 49 1/2 d. s. e. 44 s. e.

Length of plain part top 179 d. s. e. bottom 171 s. e. Thickness of plates 9 " d. s. e. 7 1/2 " s. e. Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 171 s. e. Combustion chamber plates: Material steel Thickness: Sides 9/16 Back 7/16 Top 5/8 d. s. e. 3/4 s. e. Bottom 3/4 "

Pitch of stays to ditto: Sides 8 1/4 d. s. e. 8 s. e. Back 8 1/4 " x 7/4 " Top 8 1/4 " x 7 3/4 s. e. If stays are fitted with nuts or riveted heads nuts inside & working pressure by rules 161
at back, riveted outside shell.

Material of stays steel Diameter at smallest part 1 3/8 " Area supported by each stay 40 d. s. e. 64 s. e. Working pressure by rules 169 d. s. e. 187 s. e. End plates in steam space:

Material steel Thickness 1 1/16 d. s. e. 1 1/8 s. e. Pitch of stays 187 17 d. s. e. 183 9 17 s. e. How are stays secured nuts & washers Working pressure by rules 196 d. s. e. 173 s. e. Material of stays steel

Diameter at smallest part 2 7/8 " Area supported by each stay 324 " Working pressure by rules 160 Material of Front plates at bottom steel

Thickness 7/8 " Material of Lower back plate steel Thickness 7/8 " Greatest pitch of stays as approx Working pressure of plate by rules 160

Diameter of tubes 3 1/4 " Pitch of tubes 4 1/2 " Material of tube plates steel Thickness: Front 7/8 " Back 3/4 " Mean pitch of stays 9 "

Pitch across wide water spaces 14 1/2 " Working pressures by rules 160 Girders to Chamber tops: Material iron Depth and

thickness of girder at centre (two) 6 x 7/8 d. s. e. susp. 40 1/2 d. s. e. 26 3/8 s. e. Length as per rule 40 1/2 d. s. e. 26 3/8 s. e. Distance apart 8 1/2 d. s. e. 8 1/4 s. e. Number and pitch of Stays in each 4 @ 8 1/4 d. s. e. 2 @ 7 3/4 s. e.

Working pressure by rules 160 d. s. e. 164 s. e. 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

Notes: Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓

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 ✓



DONKEY BOILER— Description *Single ended auxiliary main boiler used.*

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 meeting 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:— *Propeller blades with set studs 4 nuts ft same. Piece crank shaft complete. Steel coupling shaft clamp. Set piston rings: 2 HP piston valve rings. Pair crank pin brasses. 2 cr. pin bolts: 2 cross head bolts: 2 main bearing bolts. Set coupling bolts. 14 P. eccentric shaft 4 bolts. 1 Interm. ditto: 2 valve spindles. Air pump rod. Centrif. spindle & fan: 24 junk ring bolts 4 nuts: Set escape valve springs: set feed valves: 2 main check valves & one donkey check. 30 boiler tubes. 3 main boiler safety valve springs & one aux. boiler spring. Two half sets fire bars etc. etc. Assorted iron & bolts 4 nuts.*

The foregoing is a correct description,
Harland & Wolff Ltd Manufacturer.
for W.A.

General Remarks (State quality of workmanship, opinions as to class, &c. *The following pumps are fitted*)

No 8 Pulsometer Ballast Pump for pumping in & out of tanks.

Cameron's pump 12" x 6" x 9" pumping from bilges, tanks or sea, & discharging overboard on deck or into boilers.

Two Weir's feed pumps 10" x 8" x 24" pumping from hotwell or sea into boilers.

Carruthers' duplex pump 6" x 4" x 6" pumping from F.W. tanks or sea into boilers.

Deane's pump 6" x 4" x 6" pumping from bilges, F.W. tanks or sea into tanks or on deck.

Drysdale 5" Centrifugal pump for wench condenser.

Harland & Wolff Ltd
for W.A.

These engines & boilers have been built and fitted under special survey & in accordance with the approved tracings of the boilers herewith returned. The engines were run for several hours under full steam on the 30th Nov with good results; the safety valves of each boiler are adjusted to lift at 165 lbs per sq. in.

The Electric Lighting installation is fitted by Messrs J.H. Holmes & Co; particulars will be forwarded on the usual form shortly.

The machinery in my opinion renders the vessel eligible for the record + **L.M.C. 11.92** in the Register Book

It is submitted that this vessel is eligible for the RECORD
 + L.M.C. 11.92
 C.W.S.
 5.12

Certificate (if required) to be sent to _____

The amount of Entry Fee... £ 3 : 0 : 0 When applied for.
 Special £ 49 : 12 : 0 2nd Dec 1892
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : :
 RECEIVED CERTIFICATE 7/12/92

[Signature]

A. Jones

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

Committee's Minute

WRITTEN.
 TUES. 6 DEC 1892

Assigned

+ L.M.C. 11.92



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