

REPORT ON MACHINERY.

No. 7016

Port of Belfast

MON. DEC. 4 - 1911

Received at London Office

No. in Survey held at Belfast

Date, first Survey Jan 19 1911

Last Survey 27th Nov. 1911

Reg. Book.

on the T. S. S. "Waimana"

(Number of Visits 78)

Master Built at Belfast By whom built Wothman, Clark & Co Ltd

Tons { Gross Net }
When built 1911

Engines made at Belfast By whom made Wothman Clark & Co Ltd (N-309)

when made 1911

Boilers made at Do By whom made Do

when made 1911

Registered Horse Power Owners Shaw, Farrell & Albion Co Ltd

Port belonging to Southampton

Nom. Horse Power as per Section 28 943 Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Triple Expansion No. of Cylinders 6 each No. of Cranks 6 each

Dia. of Cylinders 23 1/2", 30", 66 1/2" Length of Stroke 48" Revs. per minute 88 Dia. of Screw shaft 14" Material of 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

in 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

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

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5'-1 1/2"

Dia. of Tunnel shaft 13 1/2" Dia. of Crank shaft journals 13.4" Dia. of Crank pin 14 1/8" Size of Crank webs 19 1/2" x 9 1/2" Dia. of thrust shaft under

collars 14 1/8" Dia. of screw 16'-9" Pitch of Screw 19'-6" No. of Blades 3 State whether moveable Yes Total surface 77.5 sq ft

No. of Feed pumps 2 Diameter of ditto 5 3/4" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 7 Sizes of Pumps Pluse ou mer No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room & bilge room 4-3 1/2"; 2-2 1/2"; 2-3 1/2" In Holds, &c. N^o 1-2-3 1/2"; N^o 2-2-3 1/2"; N^o 3-2-3 1/2"

N^o 4-2-3 1/2"; 1-2 1/2"; N^o 5-2-3 1/2"; 1-2 1/2"; N^o 6-1-2 1/2"; Jannet Wells 2-2 1/2"

No. of Bilge Injections 2 sizes 10" Connected to condenser, or to circulating pump Yes 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 Both

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 bilge pipes How are they protected 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

Dates of examination of completion of fitting of Sea Connections 25.8.11 of Stern Tube 30.8.11 Screw shaft and Propeller 11.9.11

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Engine Room top platform

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Wm. Bairdmore & Steel Co of Scotland

Total Heating Surface of Boilers 14,000 sq ft Forced Draft fitted Yes No. and Description of Boilers 5 Single Ended

Working Pressure 205 lbs Tested by hydraulic pressure to 410 lbs Date of test 19.8.11 No. of Certificate 444

Can each boiler be worked separately Yes Area of fire grate in each boiler 70 sq ft No. and Description of Safety Valves to

each boiler Double opening loaded Area of each valve 11.0 sq ft Pressure to which they are adjusted 210 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15'-6" Length 12'-0" Material of shell plates Steel

Thickness 1 5/8" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. & T. A.

long. seams T. R. O. B. S. Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 2 3/4"

Per centages of strength of longitudinal joint rivets 90 plate 84.5 Working pressure of shell by rules 240 lbs Size of manhole in shell 16" x 12"

Size of compensating ring W. E. Mills No. and Description of Furnaces in each boiler 4 Harrison Material Steel Outside diameter 43 1/4"

Length of plain part top 5 1/8" bottom 5 1/8" Thickness of plates crown 5 1/8" bottom 5 1/8" Description of longitudinal joint weld No. of strengthening rings 5

Working pressure of furnace by the rules 235 Combustion chamber plates: Material Steel Thickness: Sides 4 1/64" Back 5 1/16" Top 4 1/16" Bottom 1 3/16"

Pitch of stays to ditto: Sides 8 1/4" x 8" Back 9 1/2" x 8 1/2" Top 8 1/4" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 207

Material of stays Steel Area at smallest part 2.65 sq ft Area supported by each stay 65 sq ft Working pressure by rules 285 End plates in steam space:

Material Steel Thickness 1 5/8" Pitch of stays 19 1/2" x 15 1/2" How are stays secured D. N. & W. L. Working pressure by rules 209 lbs Material of stays Steel

Area at smallest part 6.66 sq ft Area supported by each stay 262.5 sq ft Working pressure by rules 263 Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13 1/2" x 8" Working pressure of plate by rules 214

Diameter of tubes 2 1/2" Pitch of tubes 3 3/8" x 3 5/8" Material of tube plates Steel Thickness: Front 1" Back 1 3/16" Mean pitch of stays 7 3/32"

Pitch across wide water spaces 13 1/2" Working pressures by rules 210 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 9 1/2" x 20 3/4" Length as per rule 32 1/2" Distance apart 8 1/4" Number and pitch of stays in each 3 @ 7 1/2"

Working pressure by rules 214 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked

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

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

If stiffened 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

2100-9 FORM

Lloyd's Register Foundation

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description	Made at	By whom made	When made	Where fixed		
		Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
		Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
		If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
		Material of shell plates	Thickness	Range of tensile 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 Plates
		Working pressure of shell by rules	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	
		Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by			
		Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts & nuts; 2 connecting rod bottom end bolts & nuts; 2 main bearing bolts; 2 sets of coupling bolts; 1 set of feed and bilge pump valves; a quantity of assorted bolts & nuts; iron of various sizes; spare propeller shaft; 2 propeller blades; 1 propeller boss; 1 third crank shaft; 1 pair of crank pin & cross head bushes

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED

M. H. Bell Manufacturer.

Dates of Survey while building
 During progress of work in shops - - Jan 19. 24. 26. 10. 22. 27. March 2. 6. 8. 16. 23. 28. 30. 31. April 3. 6. 14. 24. 26 etc up to the 11th Sept
 During erection on board vessel - - Sept 13. 18. 21. 25. 29. Oct. 2. 3. 4. 7. 12. 18. 23. 28. 30. Nov. 1. 6. 7. 9. 13. 15. 16. 20. 22. 25. 26. 27
 Total No. of visits 78

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 22. 2. 11 Slides 19. 6. 11 Covers 19. 6. 11 Pistons 3. 7. 11 Rods 24. 6. 11
 Connecting rods 19. 6. 11 Crank shaft 23. 5. 11 Thrust shaft 9. 8. 11 Tunnel shafts 3. 5. 11 Screw shaft 12. 6. 11 Propeller 30. 6. 11
 Stern tube 9. 8. 11 Steam pipes tested 2. 10. 11 Engine and boiler seatings 11. 9. 11 Engines holding down bolts 3. 10. 11
 Completion of pumping arrangements 20. 11. 11 Boilers fixed 28. 10. 11 Engines tried under steam 27. 11. 11
 Main boiler safety valves adjusted 9. 11. 11 Thickness of adjusting washers S.A. {A 1/4" P 5/16" CA} S 1/16" PA {F 1/2" SF} F 1/4" PF {F 9/32" A 1/4" PF} F 9/32"
 Material of Crank shaft Steel Identification Mark on Do. 309 Material of Thrust shaft Steel Identification Mark on Do. 309
 Material of Tunnel shafts Steel Identification Marks on Do. 309 Material of Screw shafts Steel Identification Marks on Do. 309
 Material of Steam Pipes WHT Iron Test pressure 615 lbs per sq"

General Remarks (State quality of workmanship, opinions as to class, &c. Donkey Engines: 2 General Service 9 1/2" x 7" x 21"
 1 Fresh Water 4" x 4" x 5"; 1 Ballast 10" x 12" x 12"; 2 Water 13 1/2" x 10" x 24"; 1 Refrigerating Pump 8" x 9" x 10"

The machinery of this vessel has been built under special survey: the material and workmanship being good, and satisfactorily tested under steam

It is submitted that above vessel is eligible for a record of + L.M.C. 11. 11 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 11. 11.

F.D.

J.W.D.
4/12/11

Certificate (if required) to be sent to the Surveyors (The Surveyors are requested not to write on or below the space for Committee's Minute).

The amount of Entry Fee... £ 3-0-0
 Special ... £ 67-3-0
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 29-11-1911
 When received, 7.12.1911

A. J. Thomas, Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. DEC. 5-1911

Assigned

MACHINERY CERTIFICATE WRITTEN



© 2019 Lloyd's Register Foundation