

REPORT ON MACHINERY

No. 25967

FRI. JAN. 9-1914

Received at London Office

Date of writing Report 19 1914 When handed in at Local Office 8. / 10 / 14 Port of Sunderland.

No. in Survey held at SUNDERLAND. Date, First Survey 5 August Last Survey 6th Jan 1914
 Reg. Book. on the Steel S.S. "Glenearn" (Number of Visits 28) Gross 4828
 Master Hartnell Built at Sunderland By whom built Bartram & Sons Ltd Tons Net 3032
 Engines made at S'land. By whom made J. Dickinson & Sons Ltd when made 1914
 Boilers made at " By whom made " when made 1914
 Registered Horse Power " Owners McGregor, Gow & Co. Port belonging to London
 Nom. Horse Power as per Section 28 401. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri. C.P.D. No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26. 43. 41" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft as per rule 14.51 Material of W.C. Iron
 as fitted 14.58 screw shaft) W.C. Iron
 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 ✓. 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 ✓ If two
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5ft
 Dia. of Tunnel shaft as per rule 13.03 Dia. of Crank shaft journals as per rule 13.68
 as fitted 13.8 as fitted 13.3 1/2 Dia. of Crank pin 13 3/4 Size of Crank webs 25 x 8 1/2 Dia. of thrust shaft under
 collars 13 3/4 Dia. of screw 14. 6" Pitch of Screw 16. 6" No. of Blades 4. State whether moveable no Total surface 92 sq ft
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 25 1/2" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 25 1/2" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps Ball vertical 2 Duplex 9x10 5x6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 of 3 1/2" In Holds, &c. two 3 1/2" in each hold.
 tunnel 2 1/2"
 No. of Bilge Injections 1 sizes 5 1/2" Connected to condenser, or to circulating pump CP Is a separate Donkey Suction fitted in Engine room & size yes 4"
 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 ✓
 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 above
 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. How are they protected ✓
 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 21. 10. 13 of Stern Tube 6. 11. 13 Screw shaft and Propeller 6. 11. 13
 Is the Screw Shaft Tunnel watertight yes. Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record B) Manufacturers of Steel J. Spencer & Sons Ltd
 Total Heating Surface of Boilers 6483 sq ft. Is Forced Draft fitted no No. and Description of Boilers three ordinary type
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 3. 11. 1913 No. of Certificate 3164.
 Can each boiler be worked separately yes. Area of fire grate in each boiler 60 sq ft No. and Description of Safety Valves to
 each boiler two Spring Area of each valve 8. 3" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet Mean dia. of boilers 15 ft Length 11' 3" Material of shell plates S
 Thickness 1 1/2" Range of tensile strength 28 1/2 / 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2. 7 Lap
 long. seams 7. 7. 2 butt Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 1/16 Lap of plates or width of butt straps 1. 7 1/4"
 Per centages of strength of longitudinal joint rivets 92. 46 Working pressure of shell by rules 188 Size of manhole in shell 16" x 12"
 plate 85. 31 Size of compensating ring 8 5/8 x 1 1/2 No. and Description of Furnaces in each boiler 3 Corrug. Material S Outside diameter 3. 10"
 Length of plain part top 9" Thickness of plates 35" Description of longitudinal joint weld. No. of strengthening rings ✓
 bottom 64 Working pressure of furnace by the rules 185. Combustion chamber plates: Material S Thickness: Sides 5/8 x 3/2 Back 5/8 Top 5/8 x 3/2 Bottom 7/8
 Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 211
 Material of stays S Diameter at smallest part 1. 35" Area supported by each stay 64" Working pressure by rules 181 End plates in steam space:
 Material S Thickness 1 1/4" Pitch of stays 17 x 20 1/2 How are stays secured 2 nuts Working pressure by rules 209 lbs Material of stays S
 Diameter at smallest part 3. 16" Area supported by each stay 348 1/2" Working pressure by rules 235 lbs Material of Front plates at bottom S
 Thickness 1 5/16 Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 14 3/8 x 8" Working pressure of plate by rules 188
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates S Thickness: Front 1 5/16 Back 7/8" Mean pitch of stays 9" x 11 1/4"
 Pitch across wide water spaces 1. 14 Working pressures by rules 180 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7 3/8 x (4 x two) Length as per rule 2. 7 1/2 Distance apart 8" Number and pitch of stays in each 3 @ 5"
 Working pressure by rules 198 lbs 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 easing gear

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 casing 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	
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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— Propeller & propeller shaft, two top and bottom end bolts & nuts. Set of coupling bolts & nuts. 2 main bearing bolts & nuts. Set of feed & bilge pump valves. two sets air & 3 sea br. pump valves. 2 donkey. 2 ballast valves. assorted iron bolts & nuts.

The foregoing is a correct description,
John Dickinson & Sons, Limited.
W. Johnson Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1913. Aug. 5. 6. 27. 29. Sep. 15. 24. Oct. 1. 6. 7. 15. 16. 17. 21. 27. 30. Nov. 3. 4. 5. 6. 7.
 During erection on board vessel --- 10. 12. 14. 17. 25. Dec. 1. 8. Jan. 6.
 Total No. of visits (28) Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 16. 10. 13. Slides 15. 9. 13. Covers 15. 9. 13. Pistons 7. 10. 13. Rods 7. 10. 13
 Connecting rods 7. 10. 13. Crank shaft 15. 10. 13. Thrust shaft 15. 10. 13. Tunnel shafts 15. 10. 13. Screw shaft 27. 10. 13. Propeller 27. 10. 13
 Stern tube 27. 10. 13. Steam pipes tested 10. 11. 13. Engine and boiler seatings 21. 10. 13. Engines holding down bolts 7. 11. 13
 Completion of pumping arrangements 14. 11. 13. Boilers fixed 12. 11. 13. Engines tried under steam 14. 11. 13
 Main boiler safety valves adjusted 14. 11. 13. Thickness of adjusting washers PB $f \frac{13}{32}$ a $\frac{13}{32}$ C.B. $f \frac{13}{32}$ s $\frac{13}{32}$ SB $f \frac{13}{32}$ or $\frac{13}{32}$ full
 Material of Crank shaft S Identification Mark on Do. WC. KH. Material of Thrust shaft S Identification Mark on Do. C.A.B
 Material of Tunnel shafts S Identification Marks on Do. CAB. A.F.D. Material of Screw shafts S. Iron Identification Marks on Do. J.T.P
 Material of Steam Pipes C. Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery & boilers built under special survey. Materials and workmanship good. Engines & boilers examined under full steam & found satisfactory. It is submitted that the Record of L.M.C. 1. 14. be inserted in the Register book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1. 14.

J.P.A.

J.W.D. 9/11/14.
J.E. Findlay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ 3 : : : When applied for, 7. 1. 1914
 Special .. £ 40 : 1 : :
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : : When received, 9. 1. 1914

Committee's Minute
 Assigned
 TUE. JAN. 13. 1914
 + L.M.C. 1. 14

Certificate (if required) to be sent to
 (The Surveyor and Registrar not to write on or below the space for Committee's Minute.)



MACHINERY CERTIFICATE WRITTEN