

REPORT ON MACHINERY

No. 22846
FRI. 12 AUG 1910

Received at London Office

Date of writing Report 4.8.10 When handed in at Local Office 4.8.10 Port of Hull
 No. in Survey held at Hull Date, First Survey Sep. 1st 09 Last Survey July 30 - 1910
 Reg. Book. 86 on the Steel S.S. Accrington (Number of Visits 97)
 Master Built at Hull By whom built Charles S & E Co Ltd Tons Gross 1629
 Engines made at Hull By whom made Messrs when made 1910
 Boilers made at Hull By whom made Charles C Ltd. when made 1910
 Registered Horse Power Owners Great Central Railway Port belonging to Grimby
 Nom. Horse Power as per Section 28 309 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 22 - 25 - 60 Length of Stroke 42 Revs. per minute 90 Dia. of Screw shaft 12 Material of screw shaft 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 One length 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 5'-0"
 Dia. of Tunnel shaft 11.1 as per rule 11.1 Dia. of Crank shaft journals 11.65 as per rule 11.65 Dia. of Crank pin 12.5 Size of Crank webs 18 1/2 x 8 Dia. of thrust shaft under collars 12.125 Dia. of screw 14'-0" Pitch of Screw 16'-9" No. of Blades 4 State whether moceable Yes Total surface 62 sq ft
 No. of Feed pumps Two Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Four Sizes of Pumps 2 Worthington 9" x 6" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 2 1/2" One 3" In Holds, &c. One 2 1/2" in fore peak, One 5 1/2" in aft peak, Two 2 1/2" in 7° hold, Two 2 1/2" in 8° hold, Two 7 1/2" in 4° hold, Three 2 1/2" in 3° hold, One 2 1/2" tunnel well, One 7 1/2" in aft peak tank.
 No. of Bilge Injections 1 sizes 7 1/2" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size Yes 3"
 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 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 tank hold suction 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 29.4.10 of Stern Tube 29.4.10 Screw shaft and Propeller 29.4.10
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record (a)) Manufacturers of Steel Messrs W. Bearamore & Co
 Total Heating Surface of Boilers 5540 sq ft Is Forced Draft fitted No No. and Description of Boilers Two Cyl. Multi. Single Ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 26.5.10 No. of Certificate 1743
 Can each boiler be worked separately Yes Area of fire grate in each boiler 72 sq ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 14.19 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 16'-0" Length 11'-8 5/8" Material of shell plates Steel
 Thickness 1 1/16" Range of tensile strength 29-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D.
 long. seams O.A.S.R. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 2 1/8"
 Per centages of strength of longitudinal joint rivets 92.5 plate 84.9 Working pressure of shell by rules 211 lbs Size of manhole in shell 20" x 15 1/2"
 Size of compensating ring 7" x 1 1/2" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 4'-4"
 Length of plain part top bottom Thickness of plates crown 2 1/8" bottom 3 1/2" Description of longitudinal joint Welded No. of strengthening rings
 Working pressure of furnace by the rules 205 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"
 Pitch of stays to ditto: Sides 8" x 8 1/2" Back 7" x 8 1/4" Top 8" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 255 lbs
 Material of stays Iron Diameter at smallest part 1 1/2" Area supported by each stay 78.75 sq in Working pressure by rules 194 lbs End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 15" x 15" How are stays secured D. Nuts Working pressure by rules 267 lbs Material of stays Iron
 Diameter at smallest part 2 1/16" Area supported by each stay 225 sq in Working pressure by rules 207 lbs Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 15" x 12" Working pressure of plate by rules 186 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 3/8" Mean pitch of stays 9"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 201 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2" x 13 1/4" Length as per rule 2'-11" Distance apart 4 1/2" Number and pitch of stays in each Three 8"
 Working pressure by rules 290 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

W1037-0013

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. 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 _____ 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:— *Two each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air feed, and bilge pump valves, a quantity of assorted bolts and nuts, valve spindle, top and bottom end connecting rod brasses etc etc*

The foregoing is a correct description,
F. J. Salethorpe Manufacturer.

Dates of Survey while building
 During progress of work in shops - - - - -
 During erection on board vessel - - - - -
 Total No. of visits **97**

SECRETARY: 1909 - Sept. 9. 14. 15. 16. 22. 29. Oct. 7. 9. 16. 21. 22. 28. 30. Nov. 2. 5. 12. 15. 17. 19. 23. 25. Dec. 4. 7. 11. 14. 16. 23. 24. 30. = 1910: - Jan. 5. 6. 8. 14. 18. 20. 25. 27. Feb. 3. 8. 10. 14. Mar. 2. 4. 7. 9. 14. 16. 21. 23. Apr. 4. 7. 18. 14. 21. 22. 27. May. 4. 10. 23. 24. 26. 27. 30. Jun. 2. 6. 7. July. 1. 4. 5. 7. 12. 19. 22. 23. 27. 28. 29. 30. Aug. 4.

Is the approved plan of main boiler forwarded herewith *Rpl 22659*

Dates of Examination of principal parts—Cylinders *14. 1. 10* Slides *25. 1. 10* Covers *18. 1. 10* Pistons *23. 1. 10* Rods *22. 2. 10*
 Connecting rods *25. 1. 10* Crank shaft *25. 11. 09* Thrust shaft *1. 4. 10* Tunnel shafts *19. 7. 10* Screw shaft *21. 4. 10* Propeller *6. 6. 10*
 Stern tube *21. 4. 10* Steam pipes tested *4. 7. 10* Engine and boiler seatings *4. 7. 10* Engines holding down bolts *22. 7. 10*
 Completion of pumping arrangements *23. 7. 10* Boilers fixed *22. 7. 10* Engines tried under steam *23. 7. 10*
 Main boiler safety valves adjusted *23. 7. 10* Thickness of adjusting washers *Port Blt for valve 1 3/32 aft valve 1 1/32 Star Blt. for valve 1 3/32 aft valve 1 3/32*
 Material of Crank shaft *Steel* Identification Mark on Do. *154.D.F.C* Material of Thrust shaft *Steel* Identification Mark on Do. *154.D.F.C*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *154.D.F.C* Material of Screw shafts *Iron* Identification Marks on Do. *154.D.F.C*
 Material of Steam Pipes *Steel* Test pressure *360 lbs per square inch*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boilers of this vessel have been constructed under special survey in accordance with the Society's Rules, the materials and workmanship are good. The boilers tested by hydraulic pressure, and with the engines secured on board and tested under steam. They are now in good order and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of L.M.C. 8. 10 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 8. 10.**

The amount of Entry Fee .. £ 3 : : :
 Special .. £ 25 : 9 : :
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, 11.8 - 10
 When received, 16.8 10/6

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

Committee's Minute TUE. 16 AUG 1910
 Assigned + L.M.C. 8. 10



MACHINERY CERTIFICATE
 WRITTEN