

## REPORT ON MACHINERY.

No. 15974-2  
WED. MAY 24 1922

Received at London Office

Date of writing Report 23 May 1922 When handed in at Local Office 23 May 1922 Port of WEST HARTLEPOOL  
 No. in Survey held at Hartlepool "ALLEGHANY" Date, First Survey 5 Nov. 1920 Last Survey 22 May 1922  
 Reg. Book. 36248 on the S.S. "ARABIANA" (No 2623) (Number of Visits 115) Gross 3496 Tons Net 1800  
 Master ✓ Built at Middlesbrough By whom built Furness S.B. & Co. Ltd. When built 1922  
 Engines made at Hartlepool By whom made Richardsons Westgarth & Co. Ltd. when made 1922  
 Boilers made at ditto By whom made ditto when made 1922  
 Registered Horse Power 547 Owners Prince Line Ltd. Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 547 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26"-43"-73" Length of Stroke 48" Revs. per minute 73 Dia. of Screw shaft as per rule 14.44 Material of as fitted 15.5 screw shaft as fitted  
 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 yes If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5'-2 1/4"  
 Dia. of Tunnel shaft as per rule 13.07 Dia. of Crank shaft journals as per rule 13.74 Dia. of Crank pin 14 1/2" Size of Crank webs 9x22 1/2" Dia. of thrust shaft under collars 14 1/4" Dia. of screw 17-9" Pitch of Screw 18-0" No. of Blades 4 State whether moveable no Total surface 100 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes 2 Independent main feed pumps  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes 10 1/2" 8x21"  
 No. of Donkey Engines 5 Sizes of Pumps Ballast 9.11x10 duplex General 8.5x8 duplex Sanitary 6.0x6 duplex Oil transfer 7.8x18 duplex Fresh W. 4 1/2-2 1/4x4 duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 of 3 1/2" In Holds, &c. In Hold: 6 of 3 1/2" and 1 of 2 1/2" in duct keel  
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size 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 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  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper grating

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons Ltd.  
 Total Heating Surface of Boilers 8365 sq ft Is Forced Draft fitted yes No. and Description of Boilers 3, single ended  
 Working Pressure 180 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 12.1.22 (1) 25.1.22 (2) No. of Certificate 3609 3610  
 Can each boiler be worked separately yes Area of fire grate in each boiler 62.56 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 12.56 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 about 4 ft Mean dia. of boilers 15-9" Length 12-0" Material of shell plates steel  
 Thickness 1 3/32" Range of tensile strength 28 1/2/32 3/4 Are the shell plates welded or flanged no Descrip. of riveting: cent cir. seams Tree  
 long. seams J.R.D.B.S. Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 3/4"  
 Per centages of strength of longitudinal joint 85.4 Working pressure of shell by rules 184 lbs Size of manhole in shell 13"x16 1/2"  
 Size of compensating ring 2.5x2.6x1 1/2" No. and Description of Furnaces in each boiler 3 Deightons Material Steel Outside diameter 46 13/16"  
 Length of plain part top 21" bottom 32" Thickness of plates 21" 32" Description of longitudinal joint welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 217 Combustion chamber plates: Material Steel Thickness: Sides 19" Back 32" Top 19" Bottom 27"  
 Pitch of stays to ditto: Sides 7 1/2"x8 1/4" Back 8"x8 1/4" Top 8 1/4"x7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184  
 Material of stays steel Area at smallest part 1 3/8" Area supported by each stay 8"x8 1/4" Working pressure by rules 190 End plates in steam space: 25/8/22  
 Material Steel Thickness 1 1/8" Pitch of stays 19 1/8"x16" How are stays secured 2 nuts Working pressure by rules 180 Material of stays steel  
 Area at smallest part 2 3/4" Area supported by each stay 19 1/8"x15" Working pressure by rules 223 Material of Front plates at bottom Steel  
 Thickness 5/8" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13 1/2"x8" Working pressure of plate by rules 196  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4"x3 1/16" Material of tube plates Steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 11 1/4"x7 3/8"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 180 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9"x1 3/4" Length as per rule 30 3/4" Distance apart 8 3/4" Number and pitch of stays in each Three 7 1/2"  
 Working pressure by rules 254 Steam dome: description of joint to shell none % of strength of joint ✓  
 Diameter ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓  
 Pitch of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed ✓

UPERHEATER. Type None Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓  
 Date of Test ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler ✓  
 Diameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓

005443-005452-0174



IS A DONKEY BOILER FITTED? *none*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 con. rod top end bolts & nuts 2 bottom end ditto  
2 main bearing ditto. 1 set coupling ditto. 1 set valves for feed, bilge and  
general donkey pumps. 1/2 set valves for air pump. 1 set rings & springs  
for H.P. piston. 1 pair crank pin bearings. 1 eccentric strap. 1 propeller  
1 propeller shaft. 1 impeller & shaft for circ. pump. 12 condenser tubes.  
2 feed check valves. 2 safety valve springs 20 boiler tubes. Assorted  
bolts, nuts and iron.

The foregoing is a correct description,  
FOR RICHARDSON, WESTGARTH & CO. LIMITED.

*L.S. Mungle*  
GENERAL MANAGER.  
(HARTLEPOOL WORKS)

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1920. Nov 5. 10. 11. 12. 24 1921. Feb 15. Mar 1. 11. 14. 24. Apr 1. 4. 6. 7. 13. 14. 15. 19. 21. 23. 25. Jun 1. 27. 27. Jul 11. 13. 14. 15. 19. 20. 21. 26. Aug 11.  
During erection on board vessel - - 1921. Jan 14. 5. 9. 10. 12. 18. 20. 23. 25. 30. Feb 7. 14. 21. 23. 24. 27. 28. 28. Mar 1. 1. 3. 6. 7. 9. 13. 14. 17. 21. 22. 21. 24. 28. 30. 31. 31.  
Apr 3. 6. 7. 10. 10. 21. May 7. 5. 15. 22. - At Mdb. 1921. Dec 13. 20 1922. Jan 5. 27. Mar 17. 21. Jun 14. 22. 28. July 7. 10. 14. 27. 28. Aug 5. 9. 10.  
Total No. of visits 115. at Mdb 17. Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 28.9.5.14.21 Slides 26.10.21 Covers 26.10.21 Pistons 26.10.21 Rods 26.10.21

Connecting rods 31.10.21 Crank shaft 11.11.21 Thrust shaft 12.1.22 Tunnel shafts 27.4.21 Screw shaft 2.7.22 Propeller 2.7.22

Stern tube 2.2.22 Steam pipes tested 9.3.22 Engine and boiler seatings 24.2.22 Engines holding down bolts 1.3.22

Completion of pumping arrangements 5.8.22 Boilers fixed 13.3.22 Engines tried under steam 5.5.22

Completion of fitting sea connections 20.12.21 Stern tube 21.2.22 Screw shaft and propeller 21.2.22

Main boiler safety valves adjusted 5.5.22 Thickness of adjusting washers Ss 3/8" P 3/8" Cs 13/32" P 13/32" Ps 11/32" P 3/8"

Material of Crank shaft *Ing. Stl* Identification Mark on Do. 6286 Material of Thrust shaft *Ing. Stl* Identification Mark on Do. 6286

Material of Tunnel shafts *Ing. Stl* Identification Marks on Do. 6286 Material of Screw shafts *Stl fast iron* Identification Marks on Do. 6286

Material of Steam Pipes *Iron.* Test pressure 600 lbs.

Is an installation fitted for burning oil fuel *yes* Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel "Persiana"

General Remarks (State quality of workmanship, opinions as to class, &c. This vessels machinery has been built and installed under Special Survey. The materials and workmanship are good. It has been satisfactorily tried under steam at moorings and is eligible to have the record L.M.C. with date, on completion of the survey.

The vessel is returning to Middlesbrough for completion of the survey. There remains to be done the completion of oil fuel pipes and connections from the tanks to the fuel pumps, and testing of same, the completion of bilge suction from holds, and the checking of spare gear on board.

The survey has been satisfactorily completed and the vessel is eligible in our opinion to have the notation of *L.M.C.* 8.22. in the Register Book

The amount of Entry Fee ... £ 6 : 0 : When applied for.

Special ... £ 102 : 7 : 23 May 1922

Donkey Boiler Fee ... £ : : When received.

Travelling Expenses (if any) £ : : 26.5.22 H.M.

Committee's Minute

Assigned

+ L.M.C. 8.22  
C.L. F.D.

*R.D. Shilston*

Engineer Surveyor to Lloyd's Register of Shipping.



© 2020

Lloyd's Register Foundation