

REPORT ON MACHINERY.

No. 79152.

Received at London Office.....

Writing Report 4th May 1925 When handed in at Local Office 4th May 1925 Port of NEWCASTLE-ON-TYNE
 Survey held at Scotwood & Walker Date, First Survey 18th Sept. 1919 Last Survey 2nd May 1925
 Book. Steel Iron Screw Turbine Steamer Ascania (Number of Visits 390)
 on the Steel Iron Screw Turbine Steamer Ascania Tons { Gross 13900
 Net 13900
 Built at Newcastle By whom built Armstrong Whitworth & Co When built 1924
 Engines made at Scotwood By whom made Sir H. G. Armstrong Whitworth & Co when made 1925
 Boilers made at Clarnick By whom made do do when made 1925
 Rated Horse Power for 1640 Owners Cunard S S Co Ltd Port belonging to Liverpool
 Indicated Horse Power at Full Power 8500 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engine Iron screw D.R. General Turbine No. of Turbines 4
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 7" Diameter of Pinion Shaft HP 5" LP 6" Second 15"
 Diameter of Journals HP 5" LP 6" Distance between Centres of Bearings 36 1/4" 36 1/4" 79 1/2" Diameter of Pitch Circle 5 8.998 x 12.64"
 Diameter of Wheel Shaft 20" Distance between Centres of Bearings 89 1/2" Diameter of Pitch Circle of Wheel HP 7.058" LP 64.058"
 Diameter of Face HP 21" LP 20" Diameter of Thrust Shaft under Collars 15 3/4" Rule 15.7" Diameter of Tunnel Shaft as per rule 14.46"
 Screw Shafts 2 Continuous as per rule 16" Diameter of same as fitted 16 1/4" Diameter of Propeller 18.0" Pitch of Propeller 18.9"
 Blades 4 State whether Moveable yes Total Surface 98.8 sq ft Diameter of Rotor Drum, H.P. 17" L.P. 35" Astern 36"
 Stress at Bottom of Groove, H.P. Solid L.P. Solid Astern Solid Revs. per Minute at Full Power, Turbine 3193 LP 2171 Propeller 90

DETAILS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
Impulse	<u>3 1/4" x 1 3/4"</u>	<u>33 3/4" x 34 3/4"</u>	<u>2</u>	<u>2 1/2"</u>	<u>36"</u>	<u>4</u>	<u>1 1/6" 2 1/6" 3 1/6" 4 1/6" 5 1/6"</u>	<u>3</u>	
Reaction	<u>1 1/5"</u>	<u>19 1/4"</u>	<u>6</u>	<u>3 1/4"</u>	<u>37 1/2"</u>	<u>4</u>	<u>1 1/4"</u>	<u>38 1/2"</u>	<u>2</u>
"	<u>1 1/2"</u>	<u>20"</u>	<u>6</u>	<u>4 1/2"</u>	<u>39 1/2"</u>	<u>4</u>	<u>2 1/8"</u>	<u>40 1/2"</u>	<u>2</u>
"	<u>2"</u>	<u>21"</u>	<u>6</u>	<u>3"</u>	<u>51"</u>	<u>2</u>	<u>3"</u>	<u>42"</u>	<u>1</u>
"	<u>2 3/8"</u>	<u>22 1/2"</u>	<u>6</u>	<u>3 7/8"</u>	<u>52 1/2"</u>	<u>2</u>	<u>3"</u>	<u>42"</u>	<u>1</u>
"	<u>3 1/2"</u>	<u>24"</u>	<u>6</u>	<u>4 1/2"</u>	<u>54"</u>	<u>1</u>	<u>3"</u>	<u>42"</u>	<u>1</u>
"				<u>5 3/8"</u>	<u>55 1/2"</u>	<u>1</u>			
"				<u>6 1/8"</u>	<u>57 3/4"</u>	<u>1</u>			
"				<u>6 1/2"</u>	<u>60"</u>	<u>3</u>			

Size of Feed pumps Two, Clarke Chapman 13 1/2" x 10" x 21"
 Size of Bilge pumps Two 6 3/4" diam x 13" stroke, one duplex 8" x 8" x 9", one 10" x 12" x 12", 12" x 12" Emergency
 Size of Bilge suction in Engine Room Four 3 1/2"

In Holds, &c. Two 3 1/2" in No. 1, 2, 3 and 4 holds, Three
 Bilge Injections 2 sizes 13 1/2" Connected to condenser, or to circulating pump C. Pump Is a separate Donkey Suction fitted in Engine Room & size one 6"
 All the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes
 All connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both
 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
 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
 Pipes are carried through the bunkers none How are they protected yes
 All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 The Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Main deck level

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons Ltd
 Heating Surface of Boilers 19440 sq ft Forced Draft fitted yes No. and Description of Boilers 2 DE and 2 S. Ended
 Working Pressure 220 lbs Tested by hydraulic pressure to 380 lbs Date of test 25/9/23 No. of Certificate 2776
 Each boiler worked separately yes Area of fire grate in each boiler 9.62 sq ft No. and Description of Safety Valves to Oil burning
 Boiler 2 Area of each valve 9.62 sq ft Pressure to which they are adjusted 223 lbs Are they fitted with easing gear yes
 Least distance between boilers on uptakes and bunkers or woodwork 4'-6" dia. of boilers 17'-6" Length 11'-6" Material of shell plates Steel
 Thickness 1 1/32" Range of tensile strength 30 to 34 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams lap
 Seam Double strap 5 units Diameter of rivet holes in long. seams 1 2/32" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 5/8"
 Percentages of strength of longitudinal joint 89.0 Working pressure of shell by rules 223 lbs Size of manhole in shell 16" x 12"
 Plates 84.2
 No. and Description of Furnaces in each Boiler Four Horizontal SE Material Steel Outside diameter 48 7/8"
 Thickness of plates 8-3 1/4" Thickness of plates 11/16" Description of longitudinal joint Welded No. of strengthening rings None
 Working pressure of furnace by the rules 221 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 13/16"
 of stays to ditto Sides 9 7/8" x 8" Back 7 7/8" x 10" Top 9 7/8" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 223 lbs
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 790" Working pressure by rules 224 lbs End plates in steam space Steel
 Thickness 1 1/4" Pitch of stays 18" x 17 7/8" How are stays secured Nuts Working pressure by rules 230 lbs Material of stays Steel
 Diameter at smallest part 7.060" Area supported by each stay 317 1/4" Working pressure by rules 244 lbs Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 13 3/4" Working pressure of plate by rules 223 lbs
 Diameter of tubes 2 3/4" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 1" Back 15/16" Mean pitch of stays 9"
 across wide water spaces 13 3/4" Working pressures by rules 266 lbs Girders to Chamber tops: Material Steel Depth and 22 1/2"
 girder at centre 9" x 1 1/2" Length as per rule 30 3/32" Distance apart 8" Number and pitch of stays in each Two 9 7/8"
 Working pressure by rules 290 lbs Steam dome: description of joint to shell None % of strength of joint yes Diameter yes
 Thickness of shell plates yes Material yes Description of longitudinal joint yes Diameter of rivet holes yes Pitch of rivets yes
 Working pressure of shell by rules yes Crown plates: Thickness yes How stayed yes

SUPERHEATER. 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 Flasing Gear fitted ✓

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied: Propeller shaft, Thrust shaft, full set of gearing for one gear case, one set of bearing bushes equal to those in one case, one set of bushes for turbines equal to those in one HP & one LB, a set of turbine carbon segments for HP Glands, 5th blading with packing & shrouding complete, 50 oil cooler tubes, 2 bolts & nuts for each size rotor bearing, 2 each bolts & nuts for main gear wheel & 1st reduction pinion bearings, one set main shaft coupling bolts, propeller blades and studs & nuts for one blade, 50 Condenser tubes & 100 ferrules, 7 escape valve springs, one set main thrust block pads, 12 pad pieces for turbine thrusts, 10th turbine bolts studs & nuts, 1 set of springs for HP glands, 3 feed check valves, complete set of spare burners, Spare gear is supplied for the following: my pump, Turb fuel, Turb circulating, Dist acting fuel, Ballast & bilge pump oil fuel & transfer pump also bolts & nuts etc
The foregoing is a correct description.
SIR W. & ARMSTRONG, WHITWORTH & CO. LIMITED. Manufacturer.

Howd Howson

1919 1920
Sept. 18. Nov. 11. 18. 20. 24. Dec. 2. 9. 11. 19. Jan. 5. 9. 12. 16. 21. 28. 30. Feb. 6. 9. 10. 13. 18. 27. Mar. 5. 9. 15. 31. Apr. 7. 9. 14. 20. 22. 27. May. 3. 4. 10. 13. 14. 17. 18. 21. June 1. 4. 14. 15. 16. 21. 28. July 2. 8. 10. 12. 13. 27. 28. 30. Aug. 3. 5. 11. 12. 13. 17. 19. 23. 31. Sept. 2. 6. 7. 8. 13. 14. 16. 17. 21. 22. 23. 24. 27. 28. 30. Oct. 4. 6. 7. 11. 15. 18. 19. 22. 25. 26. 29. Nov. 1. 3. 10. 11. 15. 16. 18. 19. 22. 26. Dec. 1. 3. 7. 9. 13. 21. 23. 28. Jan. 4. 7. 13. 17. 19. 21. 25. 27. Feb. 10. 16. 18. 21. 23. 28. Mar. 1. 7. 22. 30. May 2. 14. 16. 18. 21. 23. 28. Apr. 4. 9. 11. 18. 24. May 1. 7. 10. 15. 16. 22. 25. June 4. 6. 13. 19. 22. July 6. 12. 17. 25. 31. Aug. 3. 9. 10. 14. 17. 21. 28. Sept. 3. 4. 6. 11. 14. 18. 19. 24. 25. 26. 28. Oct. 1. 3. 5. 8. 10. 12. 16. 19. 22. 24. 26. 29. 31. Nov. 2. 6. 8. 12. 14. 15. 21. 23. 28. 30. Dec. 1. 5. 12. 14. 17. 19. 28. Jan. 3. 7. 10. 16. 22. 23. 24. 30. Feb. 14. 7. 12. 18. 25. Mar. 5. 4. 5. 7. 11. 12. 13. 17. 18. 19. 21. 25. 27. 31. Apr. 2. 3. 4. 10. 11. 16. 23. 28. 29. May 1. 5. 6. 7. 8. 9. 15. 16. 21. 22. 26. 27. June 2. 4. 6. 11. 15. 18. 19. 20. 23. 30. July 2. 7. 10. 16. 23. 30. Aug. 5. 6. 8. 12. 13. 14. 15. 19. 20. 21. 22. 25. 27. 29. Sep. 2. 8. 9. 12. 16. 17. 18. 19. 23. 26. 29. Oct. 1. 2. 6. 9. 14. 15. 17. 20. 21. 23. 26. 27. 29. 30. 31. Nov. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. Dec. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Jan. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Feb. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Mar. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Apr. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. May 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. June 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. July 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Aug. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Sept. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Oct. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Nov. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31. Dec. 1. 2. 3. 4. 6. 7. 10. 12. 13. 14. 17. 19. 20. 21. 24. 25. 26. 27. 28. 29. 30. 31.
Dates of Examination of principal parts—Casings 14/8, 21/8, 16/10, 31/10/23 14/8, 26/10, 31/10/23 " donkey " " None
Rotor shaft 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Thrust shaft 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Tunnel shafts 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Screw shaft 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Propeller 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Steam pipes tested 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Engines and boiler seatings 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Engines holding down bolts 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Completion of pumping arrangements 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Boilers fixed 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Main boiler safety valves adjusted 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Thickens of adjusting washers 14/9, 5/10, 16/10 17/8, 21/8, 28/8 17/8, 21/8, 28/8 13/3, 29/4, 7/7, 10/7 17/8, 14/9, 19/9, 26/9
Material and tensile strength of Rotor shaft S.M. Steel 34.8 tons per sq. in. Identification Mark on Do. 3797D. 920 6M
Material and tensile strength of Pinion shaft Nickel 44.0 " " " Identification Mark on Do. 4664 & 4667 6M
Material of Wheel shaft S.M. Steel Identification Mark on Do. 4661 6M Material of Thrust shaft S.M. Steel Identification Mark on Do. 350 6M
Material of Tunnel shafts S.M. Steel Identification Marks on Do. 372, 386 6M Material of Screw shafts S.M. " Identification Marks on Do. 1069 & 1071 6M
Material of Steam Pipes Steel & Copper Test pressure 660 & 440 lbs per sq. in. respectively
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 a duplicate of a previous case no If so, state name of vessel Ausonia } No Superheater fitted in Ausonia

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality it has been securely fitted on board and a satisfactory full speed trial was run on the 2nd inst in the North Sea.
This vessel was fitted with bickers outside glands on stern bushes but prior to the launch, the bickers had the packing rings removed, so that although the vessel appears to have stern glands fitted, they are of no use as a packing.
The machinery of this vessel is now in my opinion eligible for record
∴ L.M.C. 5.25, fitted for burning oil fuel. F.P. 150°f in the register book.
20 plans in all also minor, forging reports. pipe reports etc now forwarded.

The amount of Entry Fee ... £ 6 : 0 : 0
Special ... £ 141 : 0 : 0
Donkey Boiler Fee ... £
Travelling Expenses (if any) £

George Murdoch
Engineer/Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 8 MAY 1925 TUES. 7 JUL 1925 TUES. 18 AUG 1925

Assigned + L.M.C. 5.25 2D. C.F.
Fitted for oil fuel 5.25 F.P. above 150°f