

REPORT ON MACHINERY.

No. 10763

Received at London Office. THE AUG 10 1920

Date of writing Report 19 When handed in at Local Office 7.8.20 Port of Middlesbrough
No. in Survey held at Middlesbrough, Hpl & Gls Date, First Survey 1st October 1914 Last Survey 5th August 1920
Reg. Book. on the Steel screw steamer ROBINANTE ex War Project (S.S.N. 14) (Number of Visits 38)
Master G. J. Battista Built at Haxton Hill on Te By whom built Furness S. B. Co Ltd When built 1920
Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd (7.189) when made 1920
Boilers made at Reupers. By whom made Babcock & Wilcox (No. 410) when made 1920
Registered Horse Power Owners Societa di Navigazione Port belonging to Latina
Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

See Hartlepool Report No. 15419.

TURBINE ENGINES, &c.—Description of Engines Double reduction geared turbines No. of Turbines Two
Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 5 3/4" Diameter of Pinion Shaft 1 1/2" pinion 5 3/4" between helices.
Diameter of Journals 1 1/2" 4 1/2" Distance between Centres of Bearings 1 1/2" pinion 12 1/2" between helices.
Diameter of Wheel Shaft 1 1/2" 4 1/2" Distance between Centres of Bearings 1 1/2" pinion 13 3/4" Diameter of Pitch Circle 1 1/2" pinion 13 3/4" Diameter of Pitch Circle of Wheel 1 1/2" pinion 13 3/4" Diameter of Tunnel Shaft 1 1/2" pinion 13 3/4" as per rule 13 3/4" as fitted 13 3/4"
Width of Face 1 1/2" 4 1/2" Diameter of Thrust Shaft under Collars 1 1/2" 4 1/2" Diameter of Propeller 14' 9" Pitch of Propeller 16' 6"
No. of Screw Shafts 6 one Diameter of same as per rule 15 1/8 (continuous line) as fitted 15 1/8 (continuous line) 14' 9" Pitch of Propeller 16' 6"
No. of Blades 4 State whether Moveable No. Total Surface 100 sq ft Diameter of Rotor Drum, H.P. 20 1/2" L.P. 24 1/2" as per rule 24 1/2" as fitted 24 1/2" as per rule 24 1/2" as fitted 24 1/2"
Thickness at Bottom of Groove, H.P. Solid L.P. Solid Astern Discs Revs. per Minute at Full Power, Turbine 3500 Propeller 78

PARTICULARS OF BLADING.

H. P. P.C.D. 24"				L. P. P.C.D. 36"				ASTERN { NO 28 1/2" LP 36"			
1ST EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	1ST EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	1ST EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
2ND	3 1/4" x 1 1/4"	24 1/2" x 25 1/2"	2	2ND	3 1/4"	38 3/4"	1	2ND	3 1/4"	38 3/4"	1
3RD	1 1/2"	25 1/2"	1	3RD	3 1/8"	39 1/8"	1	3RD	1 1/2"	25 1/2"	1
4TH	1 1/4"	25 1/4"	1	4TH	4 3/4"	40 3/4"	1	4TH	1 1/4"	25 1/4"	1
5TH	2"	26"	1	5TH	6 1/8"	42 1/8"	1	5TH	2"	26"	1
6TH	2 1/2"	26 1/2"	1	6TH	4 1/2"	43 1/2"	1	6TH	2 1/2"	26 1/2"	1
7TH	2 1/2"	26 1/2"	1	7TH	4 1/2"	43 1/2"	1	7TH	2 1/2"	26 1/2"	1
8TH				8TH	4 3/4"	43 3/4"	1	8TH			

No. and size of Feed pumps 2 @ 11 1/2" x 8" x 24"

No. and size of Bilge pumps 1 @ 4" x 8" x 12" and 1 @ 10 1/2" x 14" x 24"

No. and size of Bilge suction in Engine Room 1 @ 3 1/2" and 2 @ 2 1/2" in engine room well.

In Holds, &c. The Holds, 6 @ 3 1/2" deep tank 2 @ 3 1/2"

After Holds, 4 @ 3 1/2", Tunnel well 1 @ 2 1/2" centrifugal

No. of Bilge Injections 1 sizes 1 1/4" Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine Room & size 1 @ 8" 2 @ 3 1/2"

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line Below

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected Close ceiling

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door worked from Shellin deck

See Gas-gas Report No. 39384.

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel James D. Colville & Sons Ltd.

Total Heating Surface of Boilers 9636 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Three Babcock & Wilcox

Working Pressure 200 Tested by hydraulic pressure to 250 Date of test 25/2/20 No. of Certificate 6090

Can each boiler be worked separately Yes Area of fire grate in each boiler 85 3/4 sq ft No. and Description of Safety Valves to each boiler 2 direct spring

Smallest distance between boilers or uptakes and bunkers or woodwork 5' 3" Mean dia. of boilers 4'-0" Length 15'-1 1/2" Material of shell plates S

Thickness 9/16" Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. lap

long. seams T.R.S.B. Diameter of rivet holes in long. seams 29/32 Pitch of rivets 3-534 Lap of plates or width of butt straps 1/4"

Per centages of strength of longitudinal joint rivets 46.7 Working pressure of shell by rules 238 Size of manhole in shell 15" x 11"

Size of compensating ring 28 1/4" x 22 1/4" x 1 1/2" No. and Description of Furnaces in each Boiler None Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space

Material S Thickness 13/16 Pitch of stays How are stays secured Working pressure by rules 240 Material of stays

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of lower back plate S Thickness 17/32 Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes 1 1/2" of tubes 2 1/8" x 25 1/8" Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter

Thickness of shell plates 3/4" Material S Description of longitudinal joint Diameter of rivet holes Pitch of rivets

Working pressure of shell by rules Crown plates: Thickness How stayed

SUPERHEATER. Type *No.* 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 *✓*

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

SPARE GEAR. State the articles supplied:— *2 Bolts & nuts (or studs & nuts) for each size of rotor, pinion and gear wheel bearings; one set of coupling bolts for each size used; 1/20 of total number of bolts & nuts (or studs & nuts) for turbine & gear case joints; 2 Thermometers for oil circulating system; one set of bearing bushes for rotor, pinion and wheel shafts; one set of packing for each gland; sufficient pads for Mitchell Thrust block; one set of pads for Mitchell type turbine adjusting block; 1/4 set of fuel pump valves; 1/2 set of lubricating pump valves; spare lubricating pump complete; one escape water spring for each size used; a quantity of assorted bolts & nuts, studs, bars & plates; one cast iron propeller and additional spare parts for M.S. class as per specification*

The foregoing is a correct description, *✓*

For Builders Signature *Mr Hpl Rpt No 15719 & Gls Rpt No 39387* Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1919. Oct 21. Nov 21. Dec 19. Jan 14. 16. 23. 26. Feb 3. 17. 18. 19. 24. 25. Mar 1. 10. 19. 24. 31. Apr 1. 15. 16. 27. 29. May 3. 11. 12. 17. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 1920. Jan 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Feb 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Mar 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Apr 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. May 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Jun 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Jul 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Aug 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Sep 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Oct 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Nov 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Dec 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. Total No. of visits *38*

Is the approved plan of main boiler forwarded herewith *no*

" " " donkey " " " *✓*

Dates of Examination of principal parts—Casing *21/6/18 to 13/3/19* Rotors *16/8/18 to 25/4/19* Blading *6/9/18 to 25/4/19* Gearing *May 1918 to Sep*

Rotor shaft *16/8/18 to 25/4/19* Thrust shaft *10/10/18* Tunnel shafts *17/10/19* Screw shaft *7/8/19* Propeller *8/4/20*

Stern tube *26/1/20* Steam pipes tested *12/5/20* Engine and boiler seatings *14/2/20* Engines holding down bolts *27/4/20*

Completion of pumping arrangements *14/5/20* Boilers fired *31/3/20* Engines tried under steam

Main boiler safety valves adjusted *14/5/20* Thickness of adjusting washers *P: B? P 37/64 S. 9/32 C. B? P 47/64 S. 17/32 S B? P 17/32*

Material and tensile strength of Rotor shaft *Steel 32.66 tons* Identification Mark on Do. *HP 9022, LP 49*

Material and tensile strength of Pinion shaft *high speed nickel chrome steel 48.56 tons* Identification Mark on Do. *19 J*

Material of Wheel shaft *Steel* Identification Mark on Do. *(Lloyds No. 108 4/1919)* Material of Thrust shaft *Steel* Identification Mark on Do. *(Lloyds No. 94 10.10.18)*

Material of Tunnel shafts *S* Identification Marks on Do. *6/32 AB* Material of Screw shafts *S* Identification Marks on Do. *3869-8*

Material of Steam Pipes *Lap welded steel* Test pressure *600 lbs*

Is an installation fitted for burning oil fuel *No.* Is the flash point of the oil to be used over 150°F. *o*

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

Is this machinery a duplicate of a previous case *No.* If so, state name of vessel *s/s "Roana"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under Special Survey, see Hpl Rpt No 15739 & Gls Rpt No 39710, and has been satisfactorily fitted on board by Messrs Richardson Westgarth & Co. The materials and workmanship are good. The engines, boilers and auxiliary machinery have been examined under full working conditions and found satisfactory, and renders the vessel eligible in our opinion to have the notation of * L.M.C.-8.20 in the Register Book subject to the Water Tube boilers being surveyed annually.*

This vessel is fitted with electric light and wireless

The amount of Entry Fee ... £ *60-7-7* When applied for, *12/7/20* Special ... £ : : When received, *31/8/20* Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ : : *Robt Jameson Wm Morrison & Co. Ld* Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute *FRI. AUG. 13 1920* Assigned *J. M. C. 8.20 H.D. (Master Tube Boilers)*

