

REPORT ON MACHINERY.

No. 74944

Received at London Office THE 15 NOV. 1921

Date of writing Report 19 When handed in at Local Office 21. 10. 1921 Port of NEWCASTLE ON TYNE

No. in Survey held at Newcastle-on-Tyne Date, First Survey 24 Oct. 1919 Last Survey 18 Oct. 1921
Reg. Book. 16271 on the Steel S.S. FROGNER M.S. 18 (Number of Visits 169)

Master Built at Newcastle By whom built Armstrong Whitworth & Co. Ltd. No. 966 When built 1921

Engines made at Newcastle By whom made Armstrong Whitworth & Co. Ltd. M.S. 18 when made 1921

Boilers made at do. By whom made do. when made 1921

Registered Horse Power Owners Seamley & Co. Port belonging to Christiania

Nom. Horse Power as per Section 28 548 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Inverted Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 27" 44" 74" Length of Stroke 51" Revs. per minute 75 Dia. of Screw shaft as per rule 15.05 Material of screw shaft Steel
as fitted 15 1/4

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 Yes 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 Yes Length of stern bush 66"

Dia. of Tunnel shaft as per rule 13.61 Dia. of Crank shaft journals as per rule 14.29 Dia. of Crank pin 14 3/4 Size of Crank webs 28"x9 1/2" Dia. of thrust shaft under collars 14 3/4 Dia. of screw 18-0" Pitch of Screw 16-9" No. of Blades 4 State whether moveable Yes Total surface 98 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/4" Stroke 25 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 25 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 10 1/2"x12"x10"-12"x9"x2"-12"x9"x2" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4-3 1/2" dia In Holds, &c. Two in each Hold 3 1/2"

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump pump 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 Yes

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 Both

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 Forward Hold Suctions How are they protected Wood Casd

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 Top platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel J. Spencer & Sons

Total Heating Surface of Boilers 8112 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 Single-End Multitubular

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 17.1.21 No. of Certificate 9516

Can each boiler be worked separately Yes Area of fire grate in each boiler 61 sq ft Coal and oil-fired No. and Description of Safety Valves to each boiler 2 Spring-loaded Area of each valve 8.29 sq ft Pressure to which they are adjusted 185 lbs No. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 58 1/2" Mean dia. of boilers 15-6" Length 12-6" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 28/32 T Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams S.R. long. seams T.R. Butt Sharp Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 8 1/16" Lap of plates or width of butt straps 19"

Per centages of strength of longitudinal joint rivets 92.0 plate 85.2 Working pressure of shell by rules 180.0 Size of manhole in shell In End plate 16"x12"

Size of compensating ring Flanged plate No. and Description of Furnaces in each boiler 3 Deighton Material Steel Outside diameter 3'-10 1/8" 4'-1/4" in plan

Length of plain part top } Thickness of plates crown } 9" Description of longitudinal joint weld No. of strengthening rings } bottom } 16" } 1

Working pressure of furnace by the rules 180- Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 21/32" Top 5/8" Bottom 1"

Pitch of stays to ditto: Sides 9 1/4"x8" Back 9 1/2"x8 1/8" Top 8 1/2"x8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays Steel Area at smallest part 1.727 sq ft Area supported by each stay 76 sq ft Working pressure by rules 200 End plates in steam space:

Material Steel Thickness 1 1/4" Pitch of stays 19"x2 1/4" How are stays secured S.R. Working pressure by rules 180 Material of stays Steel

Area at smallest part 7.240 sq ft Area supported by each stay 403.75 Working pressure by rules 200 Material of Front plates at bottom Steel

Thickness 3 1/32" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 15 1/8" Working pressure of plate by rules 220

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4"x3 3/4" Material of tube plates Steel Thickness: Front 3/32" Back 3/4" Mean pitch of stays 9 3/8"

Pitch across wide water spaces 13 5/8" Working pressures by rules 193 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4" x 12 1/4" Length as per rule 34 1/2" Distance apart 8 1/2" Number and pitch of stays in each 3-8"

Working pressure by rules 204 Steam dome: description of joint to shell % of strength of joint

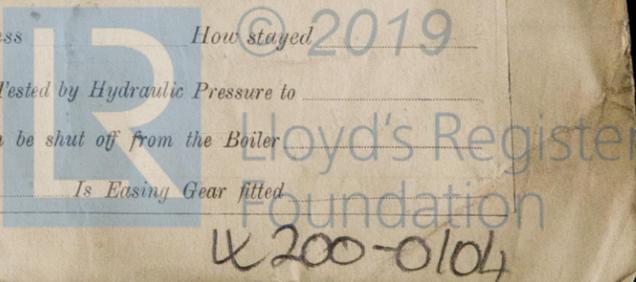
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type 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



U 200-0104

IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 Top End Bolts + nuts. 2 Bottom End Bolts + nuts. 2 main Bearing Bolts
1 set Coupling Bolts - 1 set of feed + Bilge Pump valves - Assorted Bolts nuts + iron. Screw Shaft - one throw of
Crankshaft - 1 Bottom End Bush - 1 Top End Bearing - Two valve spindles - One eccentric strap complete - one Air pump
rod - set of link brasses, set of piston springs, 6 Link ring bolts, 6 Cylinder Cover bolts
36 Condenser tubes - 1/2 set of propeller blades, space for Oil Fuel Installation, Hardened forced draught
sets of valves, springs and piston rings for Auxiliary + Donkey feed pumps, sets of valves for General
Service Ballast pumps, set of safety valve springs

The foregoing is a correct description,

SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED.

T. H. Jackson, Manufacturer.

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

Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " " None

Dates of Examination of principal parts—Cylinders	23.3.21	Slides	7.2.21	Covers	11.11.20	Pistons	7.2.21	Rods	3.5.20
Connecting rods	3.5.20	Crank shaft	11.8.20	Thrust shaft	11.8.20	Tunnel shafts	11.8.20	Screw shaft	4.7.21
Propeller	26.7.21	Stern tube	8.4.21	Steam pipes tested	10.6.21	Engine and boiler seatings	5.4.21	Engines holding down bolts	5.9.21
Completion of pumping arrangements	15.10.21	Boilers fixed	25.5.21	Engines tried under steam	12.10.21	Completion of fitting sea connections	5.4.21	Stern tube	6.6.21
Screw shaft and propeller	26.8.21	Main boiler safety valves adjusted	12.10.21	Thickness of adjusting washers	Int. Bl. P ² / ₃₂ " S ⁵ / ₁₆ ", Cyl. Bl. P ² / ₁₆ " S ³ / ₃₂ ", Sta. Bl. P ¹³ / ₃₂ " S ³ / ₁₆ "	Material of Crank shaft	S.M. Steel	Identification Mark on Do.	T.F. 8.20
Material of Thrust shaft	S.M. Steel	Identification Mark on Do.	T.F. 8.20	Material of Tunnel shafts	S.M. Steel	Identification Marks on Do.	T.F. 8.20	Material of Screw shafts	S.M. Steel
Identification Marks on Do.	R.L.A. 7.20	Material of Steam Pipes	S.D. Steel 5 1/2" 1/2 x No 4. W.G.	Test pressure	540 lbs	Is an installation fitted for burning oil fuel	<input checked="" type="checkbox"/> Yes	Is the flash point of the oil to be used over 150°F.	<input checked="" type="checkbox"/> Yes
Have the requirements of Section 49 of the Rules been complied with	<input checked="" type="checkbox"/> Yes	Is this machinery duplicate of a previous case	No.	If so, state name of vessel	<input checked="" type="checkbox"/>	General Remarks	(State quality of workmanship, opinions as to class, &c. The machinery and Boilers of this vessel have been constructed under Special Survey. The materials and workmanship are sound and good. An oil fuel burning installation of the Hallend-Harden System has been fitted and the Boilers are arranged for coal or oil-burning. The requirements of Section 49 of the Rules and the Secretary's letters of 19 th Sept 1919 + 7 th Nov. 1919 have been complied with + the settling tanks are fitted with "Teledep" depth gauges. A steam fire-extinguishing line has been fitted below the boilers. The machinery and auxiliaries have been tried out under steam with satisfactory results. In my opinion the machinery of this vessel is eligible for classification with record + L.M.C. 10.21 Fitted for oil fuel F.P. above 150°F. 10.21		

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It is submitted that this vessel is eligible for THE RECORD. + L.M.C. - 10.21. F.D. C.L.

Fitted for Oil Fuel 10.21. F.P. above 150°F.

And J. Y. 17/11/21

The amount of Entry Fee ...	£ 6 : -	When applied for,	14/11/21
Special ...	£ 102 : 8	When received,	24.11.21
Donkey Boiler Fee ...	£		
Travelling Expenses (if any) £			

R. E. Amers. & Thomas Field
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 22 NOV. 1919
Assigned + L.M.C. 10.21 30. C.L.
Fitted for oil fuel etc

