

REPORT ON MACHINERY.

No. 13615

Received at London Office WED. JUL 30 1924

Date of writing Report	24-7-24	When handed in at Local Office	24-7-24	Port of	Aberdeen	
No. in Survey held at	Aberdeen	Date, First Survey	Sept 7 th 1923	Last Survey	July 14 th 1924	
Reg. Book.		(Number of Visits)	H1			
on the	Single Screw Steamer	S ^r MAGNUS.				
Master	Built at	Aberdeen	By whom built	Hall Russell & Co Ltd	N ^o 683	
Engines made at	Aberdeen	By whom made	Hall Russell & Co Ltd	E N ^o 683	when made	1924
Boilers made at	do	By whom made	do	R N ^o 683	when made	1924
Registered Horse Power		Owners	North of Scotland & Ork ^{ney} & Shet ^{land} Steam Navigation Co Ltd	Port belonging to	Aberdeen	
Net Horse Power as per Section 28	250	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	20", 33½", 56"	Length of Stroke	36"	Revs. per minute	95	
Dia. of Screw shaft	as per rule 11.18"	Material of screw shaft	Steel			
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				
the propeller boss	Yes	If the liner is in more than one length are the joints burned	one length	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				
ners are fitted, is the shaft lapped or protected between the liners	Yes	Length of stern bush	4'-0"			
Dia. of Tunnel shaft	as per rule 10.336"	Dia. of Crank shaft journals	as per rule 10.96"	Dia. of Crank pin	11.125"	
Size of Crank webs	7" x 17½"	Dia. of thrust shaft under				
Dia. of screw	12'-9"	Pitch of Screw	16'-0"	No. of Blades	4	
State whether moveable	No	Total surface	48 sq ft			
No. of Feed pumps	2	Diameter of ditto	3½"	Stroke	20"	
Can one be overhauled while the other is at work	Yes					
No. of Bilge pumps	2	Diameter of ditto	3½"	Stroke	20"	
Can one be overhauled while the other is at work	Yes					
No. of Donkey Engines	2	Sizes of Pumps	1-8 x 5-8" & 1-6 x 4½ x 6"	No. and size of Suctions connected to both Bilge and Donkey pumps		
Engine Room	3 @ 2½" diameter	In Holds, &c.	Fore hold 1 @ 2" Main 2 @ 2½"			
After hold	1 @ 2½"	Tunnel well	1 @ 2½"			
No. of Bilge Injections	1	sizes	6"	Connected to condenser, or to circulating pump	C.P.	
Is a separate Donkey Suction fitted in Engine room & size	Yes	3½"				
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 Valves & Cocks			
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	below			
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	3 Bilge & 4 Tank suction	How are they protected	Strong 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					
Is the Screw Shaft Tunnel watertight	Yes	Is it fitted with a watertight door	Yes	worked from	Top Engine grating	
MATERIALS, &c.—(Letter for record S (7) Manufacturers of Steel The Steel Company of Scotland Ltd						
Total Heating Surface of Boilers	4302 sq ft	Is Forced Draft fitted	No	No. and Description of Boilers	2 S.E. Cyl ^s Multi ^{ple}	
Working Pressure	200 lbs	Tested by hydraulic pressure to	350 lbs	Date of test	3-4-24	
No. of Certificate	1024					
Can each boiler be worked separately	Yes	Area of fire grate in each boiler	66 sq ft	No. and Description of Safety Valves to		
boiler	2. Direct spring	Area of each valve	7.67	Pressure to which they are adjusted	200 lbs	
Are they fitted with easing gear	Yes					
Smallest distance between boilers or uptakes and bunkers or woodwork	5'-6"	Mean dia. of boilers	6'-0"	Length	10'-9"	
Material of shell plates	Steel					
Thickness	1½"	Range of tensile strength	29-33 lbs	Are the shell plates welded or flanged	No	
Description of riveting: cir. seams	D.R. Line					
seams	T.R. D.B.S.	Diameter of rivet holes in long. seams	1½"	Pitch of rivets	9½"	
Lap of plates or width of butt straps	20½"					
Percentages of strength of longitudinal joint	88.6%	Working pressure of shell by rules	200.4	Size of manhole in shell	20" x 16"	
of compensating ring	34½" x 32½"	No. and Description of Furnaces in each boiler	3 Deighton	Material	Steel	
Outside diameter	4'-0½"					
Length of plain part	top 10' 6" bottom 10' 6"	Thickness of plates	5/8"	Description of longitudinal joint	Welded	
No. of strengthening rings						
Working pressure of furnace by the rules	201.5	Combustion chamber plates: Material	Steel	Thickness: Sides	29/32"	
Back	29/32"	Top	29/32"	Bottom	25/32"	
No. of stays to ditto: Sides	10½" x 8½"	Back	9½" x 9½"	Top	9½" x 9½"	
Bottom	9½" x 9½"	Working pressure by rules	201			
Material of stays	IRON	Area at smallest part	2.71	Area supported by each stay	90.2	
Working pressure by rules	203	End plates in steam space:				
Material of stays	Steel	Thickness	1½"	Pitch of stays	19½" x 19"	
How are stays secured	D.N.W.	Working pressure by rules	203	Material of Front plates at bottom	Steel	
Area at smallest part	6.66	Area supported by each stay	365.7	Working pressure by rules	201.5	
Material of Lower back plate	Steel	Thickness	29/32"	Greatest pitch of stays	15½" x 9½"	
Working pressure of plate by rules	205.8					
Diameter of tubes	3½"	Pitch of tubes	4½" x 4½"	Material of tube plates	Steel	
Thickness: Front	15/16"	Back	27/32"	Mean pitch of stays	11"	
Working pressures by rules	201.3	Girders to Chamber tops: Material	Steel	Depth and		
Distance apart	7' 9"	Number and pitch of stays in each	2 @ 10' 6"			
Working pressure by rules	203	Steam dome: description of joint to shell	NAKED	% of strength of joint		
Thickness of shell plates		Material		Description of longitudinal joint		
Diam. of rivet holes		Working pressure of shell by rules		Crown plates		
Thickness		How stayed				
SUPERHEATER. Type						
Date of Approval of Plan		Tested by Hydraulic Pressure to				
Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler						
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:— Four top end bolts & nuts, two bottom & two main bearing bolts & nuts, eight shaft coupling bolts & nuts, one set each feed & bridge valves, two feed check valves, one safety valve spring, one air pump rod, one L.P. valve spindle, pair top end bushes, pair of bottom end bushes, six junk ring bolts, dozen studs for cylinder & valve chest covers, dozen studs, two dozen condenser tubes, half set each fire & bridge bars, six boiler tubes, a quantity of assorted bolts & nuts & iron, two ebony rings for Weir Pump.

The foregoing is a correct description,

FOR HALL, RUSSELL & CO., LTD.

James Hunter DIRECTOR.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1923. Sep 17. Oct 11, 24, 30. Nov 5, 15, 23. Dec 3, 5, 13, 18, 25. Jan 9, 15, 23, 31. Feb 6, 7, 21. Mar 10, 25. Apr 3, 15, 23, 29, 30. May 6, 15.
During erection on board vessel - - May 20, 23, 29. June 3, 5, 17, 20, 25, 26, 27. July 2, 21, 17.
Total No. of visits 41

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders 7-2-24 Slides 7-2-24 Covers 7-2-24 Pistons 7-2-24 Rods 7-2-24

Connecting rods 7-2-24 Crank shaft 18-10-23 Thrust shaft 15-4-24 Tunnel shafts 15-4-24 Screw shaft 23-4-24 Propeller 23-4-24

Stern tube 10-3-24 Steam pipes tested 25-6-24 Engine and boiler seatings 29-4-24 Engines holding down bolts 5-6-24

Completion of pumping arrangements 20-6-24 Boilers fixed 23-5-24 Engines tried under steam 26-6-24

Completion of fitting sea connections 15-5-24 Stern tube 15-4-24 Screw shaft and propeller 6-5-24

Main boiler safety valves adjusted 26-6-24 Thickness of adjusting washers PORT BLR Fm V 1/2 AFT V 1/2 STAR BLR Fm V 1/2 AFT

Material of Crank shaft *J. Sae* Identification Mark on Do. 43760MR Material of Thrust shaft *Steel* Identification Mark on Do. 1429A

Material of Tunnel shafts *Steel* Identification Marks on Do. 1430 1/2 1431 Material of Screw shafts *Steel* Identification Marks on Do. 1434A

Material of Steam Pipes *lap welded steel* Test pressure 600 lb. per sq. in.

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

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

Is this machinery duplicate of a previous case *no* If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

These Engines & Boilers have been constructed under special survey and in accordance with the Secretary's letters, the Rules and approved plans. The Materials and Workmanship are good, when completed and properly fitted on board, they were tried under steam at moorings, and also at sea on measured mile, and four hours full speed, with satisfactory results, and are now in good order, & in my opinion entitled to the record of LMC 7.24 in red. in the Register. An Electric light installation has been fitted on board the vessel. A Report on which is forwarded herewith.

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.24. CL.

C. E. Ticker 31/7/24

Engineer Surveyor to Lloyd's Register of Shipping

The amount of Entry Fee ... £ 4 : 0 : 0 When applied for, 29-7-1924.
Special ... £ 59 : 5 : 0
Donkey Boiler Fee ... £ 62 : 10 : 0
Travelling Expenses (if any) £ : : 0 When received, 5/8/24

Committee's Minute FRI 1 AUG 1924

Assigned

CERTIFICATE WRITTEN



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