

REPORT ON MACHINERY

No. 47940

Date of writing Report 1928 When handed in at Local Office 7 5 1928 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 9 11 27 Last Survey 3-5-1928
 Reg. Book. on the new steel S/S "BEN MOHR"
 Master Built at Glasgow By whom built Charles Bonnell & Co. Ltd (N° 411) Tons Gross 5920 Net 3754
 Engines made at Glasgow By whom made David Rowan & Co. Ltd (N° 879) when made 1928
 Boilers made at Glasgow By whom made David Rowan & Co. Ltd (N° 879) when made 1928
 Registered Horse Power Owners Ben Line Steamers Ltd Port belonging to Leith
 Nom. Horse Power as per Section 28 675 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Quadruple expansion No. of Cylinders 4 No. of Cranks 4
 Dia. of Cylinders 24 3/4 - 35 1/2 - 51 - 73 Length of Stroke 51 Revs. per minute 65 Dia. of Screw shaft as per rule 15 1/2 as fitted 16 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
 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' 4"
 Dia. of Tunnel shaft as per rule 13 1/2 as fitted 14 Dia. of Crank shaft journals as per rule 14 1/2 as fitted 14 3/4 Dia. of Crank pin 14 3/4 Size of Crank web 22 1/2 x 9 3/4 Dia. of thrust shaft under
 collars 15 Dia. of screw 18 1/2 Pitch of Screw 18 1/2 No. of Blades 4 State whether moveable yes Total surface 108 sq ft
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 5 Sizes of Pumps 8 1/2 x 6 7 1/2 x 4 7 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 @ 3 1/2" 2 @ 3 1/2" In Holds, &c. N° 1 hold - 2 @ 3 1/2" N° 2 hold - 2 @ 3 1/2"
 Deep tank - 2 @ 3 1/2" N° 4 hold - 2 @ 3" and 1 @ 3 1/2" Tunnel well - 1 @ 2 1/2"
 No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump L.P. Is a separate Donkey Suction fitted in Engine room & size 2 @ 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 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 suction How are they protected under timber beams
 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 deck

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Böhler & Co. A.G. Oberhausen 3584 1045.8
 Heating surface of auxiliary boiler - 1700 ft Heating surface of all boilers - 10430 ft
 Total Heating Surface of Boilers 8730 ft Is Forced Draft fitted yes No. and Description of Boilers Three single ended (also one 10430 ft)
 Working Pressure 220 Tested by hydraulic pressure to 380 Date of test 14-3-28 No. of Certificate 17824
 Can each boiler be worked separately yes Area of fire grate in each boiler 71.5 sq ft No. and Description of Safety Valves to
 each boiler 2 High lift Area of each valve 5.94 sq ft Pressure to which they are adjusted 225 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 7' 6" Mean dia. of boilers 16' 0" Length 12' 6" Material of shell plates steel
 Thickness 1 3/4" Range of tensile strength 30-34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams WR
 long. seams WBS.T.R Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 1/4"
 Per centages of strength of longitudinal joint rivets 85.1 Working pressure of shell by rules 220 Size of manhole in shell 19 1/2 x 15 1/2
 Size of compensating ring 10 1/2 x 1 3/4" No. and Description of Furnaces in each boiler 4 Deighton Material steel Outside diameter 40 1/2"
 Length of plain part top Thickness of plates crown 1 3/4" bottom 1 1/4" Description of longitudinal joint welded No. of strengthening rings none
 Working pressure of furnace by the rules 221 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 1 1/8" Top 3/4" Bottom 2 1/2"
 Pitch of stays to ditto: Sides 9 x 9 1/2 Back 8 1/2 x 8 1/2 Top 9 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 224
 Material of stays steel Area at smallest part 1.730 Area supported by each stay 68.60 Working pressure by rules 224 End plates in steam space:
 Material steel Thickness 1 1/2" Pitch of stays 2 1/4 x 2 1/2 How are stays secured W.N. Working pressure by rules 222 Material of stays steel
 Area at smallest part 8.290 Area supported by each stay 420 Working pressure by rules 222 Material of Front plates at bottom steel
 Thickness 1 1/2" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 13 1/4 x 8 1/4 Working pressure of plate by rules 223
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates steel Thickness: Front 1 1/2" Back 7/8" Mean pitch of stays 9.92"
 Pitch across wide water spaces 14" Working pressures by rules 222 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 2 @ 10 1/2 x 7 1/2 Length as per rule 37 1/2 Distance apart 9" Number and pitch of stays in each 3 @ 9"
 Working pressure by rules 222 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
 PERHEATER. Type smoke tube Date of Approval of Plan See Nuc Rpt Tested by Hydraulic Pressure to 240 lbs
 Date of Test 3-4-28 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
 Diameter of Safety Valve 1 1/2 Pressure to which each is adjusted 227 Is Easing Gear fitted yes

100-15711

IS A DONKEY BOILER FITTED? no. Auxiliary bl. fitted is a report now forwarded? yes

SPARE GEAR. State the articles supplied:— As per Rules and in addition: 1 no. bottom end bearings, one HP piston ring, one impeller and shaft for circulating pump and four propeller blades, one screw shaft

The foregoing is a correct description,

For David Roway & Co. Ltd.
Arch. H. Grierson Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 927 Nov. 9. 18. 22. 29 Dec. 2. 15. 19. 27. 29 (1928) Jan. 10. 11. 13. 16. 17. 24. 26. 27. 30 Feb. 2. 15. 14. 15. 20. 21. 22. 27
{ During erection on board vessel -- } Mar. 1. 2. 7. 9. 12. 14. 15. 19. 20. 22. 24. 29. 30 Apr. 2. 3. 6. 10. 11. 12. 13. 16. 17. 18. 20. 19. 26 May 2. 3
Total No. of visits 54

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

Dates of Examination of principal parts—Cylinders 26-1-28 Slides 13-2-28 Covers 27-2-28 Pistons 12-3-28 Rods 12-3-28
Connecting rods 9-3-28 Crank shaft 16-1-28 Thrust shaft 15-3-28 Tunnel shafts 26-3-28 Screw shaft 2-3-28 Propeller 2-3-28
Stern tube 20-3-28 Steam pipes tested 13-2-28 Engine and boiler seatings 6-4-28 Engines holding down bolts 18-4-28
Completion of pumping arrangements 2-5-28 Boilers fixed 19-4-28 Engines tried under steam 3-5-28
Completion of fitting sea connections 2-4-28 Stern tube 2-4-28 Screw shaft and propeller 2-4-28
Main boiler safety valves adjusted 26-4-28 Thickness of adjusting washers Port. centre & starboard fls. all $\frac{1}{32}$ " auxiliary bls. $\frac{1}{16}$ "
Material of Crank shaft Steel Identification Mark on Do. LOTOS NO 879 L.C.D. 16-1-28 Material of Thrust shaft Steel Identification Mark on Do. LOTOS NO 938 L.C.D. 18-3-28
Material of Tunnel shafts Steel Identification Marks on Do. LOTOS NO 879 L.C.D. 26-3-28 Material of Screw shafts Steel Identification Marks on Do. LOTOS NO 938 L.C.D. 2-3-28
Material of Steam Pipes Lapwelder iron Test pressure 660 lbs

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 yes If so, state name of vessel "Benvenue"

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

The materials and workmanship are good.
The machinery has been constructed under special survey in accordance with the Rules, satisfactorily fitted in the vessel, tried under steam and found good.
It is eligible in my opinion for Classification and the Record + LMC 5.28

It is submitted that this vessel is eligible for the RECORD. + LMC 5.28 F.D. CL.

The amount of Entry Fee ... £ 6 : : When applied for, 10/5/28
Special ... £ 108 : 15 : :
Donkey Boiler Fee ... £ : : : When received, 14/5/28
Travelling Expenses (if any) £ : : : 28/-

Committee's Minute GLASGOW 15 MAY 1928

Assigned + L.M.C. 5.28

F.D.

Engineer Surveyor to Lloyd's Register of Shipping.



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