

REPORT ON MACHINERY

No. 45290

14 JAN 1926

Received at London Office

Date of writing Report 19 When handed in at Local Office 30. 12. 25 Port of Glasgow 4. 1. 1926 (Litt.)
 No. in Survey held at Glasgow Date, First Survey 1. 5. 25 Last Survey 29-12-1925
 Reg. Book. on the new steel S/S "BENARTY". (Number of Visits 60)
 Master Built at Glasgow By whom built Charles Connell & Co. Ld. (No. 405) When built 1925
 Engines made at Glasgow By whom made David Rowan & Co. Ld. (No. 822) when made 1925
 Boilers made at Glasgow By whom made David Rowan & Co. Ld. (No. 822) when made 1925
 Registered Horse Power - Owners Bendine Steamers Limited. Port belonging to Leith
 Nom. Horse Power as per Section 28 598 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 15.27 Material of screw shaft steel
 as fitted 16 Is the after end of the liner made water tight
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes If the liner does not fit tightly at the part
 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 13.77 Dia. of Crank shaft journals as per rule 14.45 Dia. of Crank pin 14 3/4 Size of Crank webs 22 1/2 x 9 3/4 Dia. of thrust shaft under
 collars 15 Dia. of screw 18'-0" Pitch of Screw 18'-6" No. of Blades 4 State whether moveable yes Total surface 106 sq ft
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 5 Sizes of Pumps 10 1/2 x 8 - 22 - Main feed 7 1/2 x 5 1/4 - Harbour
 8 & 5 1/2 x 8 - General 7 1/2 x 8 - Sanitary No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 @ 3 1/2 In Holds, &c. No. 1 hold - 2 @ 3 1/2 No. 2 hold - 2 @ 3 1/2
 Deep tank - 2 @ 3 1/2 No. 4 hold - 2 @ 3 and 1 @ 3 1/2
 No. of Bilge Injections 1 sizes 9 Connected to condenser, or to circulating pump 6 P. Is a separate Donkey Suction fitted in Engine room & size 2 @ 3 1/2
 mudboxes & straight tailpipes 25 Bilge injection rose
 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 boards
 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 S) Manufacturers of Steel Fried Krupp Eisen. Gutehoffnungshütte - Oberhausen. steel works Scotland Ltd.
 Total Heating Surface of Boilers 5730 sq ft Is Forced Draft fitted yes No. and Description of Boilers Three single ended
 Working Pressure 220 Tested by hydraulic pressure to 380 Date of test 28-10-25 No. of Certificate 16965
 Can each boiler be worked separately yes Area of fire grate in each boiler 71.50 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 about 6 feet 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 NTR.
 long. seams NBS. TR Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 10 1/32 Lap of plates or width of butt straps 23 1/4
 Per centages of strength of longitudinal joint rivets 87.8 Working pressure of shell by rules 220 Size of manhole in shell 19 1/2 x 15 1/2
 plate 85.1
 Size of compensating ring 27 1/2 x 29 1/2 No. and Description of Furnaces in each boiler 4 Brighton Material steel Outside diameter 40 1/2
 flanged 3" to 16" x 2" manhole
 Length of plain part top Thickness of plates crown 39 Description of longitudinal joint welded No. of strengthening rings none
 bottom 64
 Working pressure of furnace by the rules 221 Combustion chamber plates: Material steel Thickness: Sides 3/4 Back 1/2 Top 3/4 Bottom 3/2
 Pitch of stays to ditto: Sides 9 x 9 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 68.06 Working pressure by rules 224 End plates in steam space:
 Material steel Thickness 1 5/8 Pitch of stays 21 1/2 x 21 1/2 How are stays secured N.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 5/16 Material of Lower back plate steel Thickness 1 3/16 Greatest pitch of stays 13 1/2 x 8 1/2 Working pressure of plate by rules 223
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/16 x 4 3/8 Material of tube plates steel Thickness: Front 1 5/16 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 1/8 Length as per rule 34 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

SUPERHEATER. Type Smoke tube Date of Approval of Plan See Nure Rpt. (Serial 6340) Tested by Hydraulic Pressure to 440 lbs
 Date of Test 13-11-25 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

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE MARGIN.

0910 01196 0166

IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *yes*

SPARE GEAR. State the articles supplied:— *As per Rules and in addition 2 bottom end bearings, one HP piston ring, one impeller and shaft for circulating pump and four propeller blades.*

The foregoing is a correct description,

DAVID ROWAN & CO, LIMITED

Alan Thomson

Manufacturer.

Dates of Survey while building
 During progress of work in shops --- *MAY 1. 1925 May 28/6. 23/25 July 2/31. Aug 4/11. 12/18. Sept 2/4. 7/10. 15/24. Oct 2/5. 7/13. 14/15. 16/20. 21/22. 25/27. 30/30. Nov 3/4. 5/6. 9/10. 12/13. 16/23. 24/20. 25/27. 30. Dec 2/3. 8/9. 11/14. 15/16. 21/22. 25/29.*
 During erection on board vessel --- *(Ruled 4/1/26)*
 Total No. of visits *60.*

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

Dates of Examination of principal parts—Cylinders *10-9-25* Slides *4-11-25* Covers *13-10-25* Pistons *20-10-25* Rods *28-10-25*
 Connecting rods *13-10-25* Crank shaft *24-9-25* Thrust shaft *4-11-25* Tunnel shafts *16-11-25* Screw shaft *28-10-25* Propeller *28-10-25*
 Stern tube *5-11-25* Steam pipes tested *6-11-25* Engine and boiler seatings *27-11-25* Engines holding down bolts *14-12-25*
 Completion of pumping arrangements *15-12-25* Boilers fixed *11-12-25* Engines tried under steam *29-12-25*
 Completion of fitting sea connections *16-11-25* Stern tube *16-11-25* Screw shaft and propeller *16-11-25*
 Main boiler safety valves adjusted *21-12-25* & *28-12-25* Thickness of adjusting washers *Port blr. P 3/8" 5 5/8" Centre blr. both 3/8" Sld blr. both 5/16"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS N2822 L.C.D. 24-9-25* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYDS N2100 L.C.D. 4-11-25*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYDS N2822 L.C.D. 16-11-25* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYDS N240 L.C.D. 28-10-25*
 Material of Steam Pipes *Lapwelded steel* Test pressure *660 lbs 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.)

The workmanship and materials 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 (with date) when the survey is complete.

To complete the survey the donkey boiler safety valves require to be adjusted under steam. This will be done at Leith, for which port the vessel has left. Surveyors advised.

The amount of Entry Fee ... £ 6 :-
 Special ... £ 104 : 18 :
 Donkey Boiler Fee ... £ 4 : 4 :
 Travelling Expenses (if any) £ : :
 When applied for, *8.1.26.*
 When received, *12.1.26. hmsd*

S. C. Davis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 12 JAN 1926** TUES. 19 JAN 1926

Assigned + LMC 1, 26
 CERTIFICATE WRITTEN



30/12/25
Alan Thomson
GLASGOW

Certificate (if required) to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute.