

REPORT ON MACHINERY.

No. 48434

10 OCT 1928

Received at London Office

Survey Report 28-9-1928 When handed in at Local Office 1-10-1928 Port of Glasgow
 Survey held at Glasgow Date, First Survey 3-4-28 Last Survey 27-9-1928
 on the new steel S/S "BENCRACHAN" (Number of Visits 62)
 Built at Glasgow By whom built J. & S. Bonnell & Co. Ltd. When built 1928
 made at Glasgow By whom made David Rowan & Co. Ltd. (No. 887) when made 1928
 made at Glasgow By whom made David Rowan & Co. Ltd. (No. 887) when made 1928
 rated Horse Power Owners Ben Line Steamers Ltd. Port belonging to Leith
 Horse Power as per Section 28 675 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

VES, &c.—Description of Engines Quadruple expansion No. of Cylinders 4 No. of Cranks 4
 Cylinders 34 3/4" 35 3/4" 51" 73" Length of Stroke 51 Revs. per minute 65 Dia. of Screw shaft as per rule 15 1/2" Material of steel
 as fitted 16" screw shaft
 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
 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
 the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two
 are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-4"
 Tunnel shaft as per rule 13 7/8" Dia. of Crank shaft journals as per rule 14 1/2" Dia. of Crank pin 14 3/4" Size of Crank webs 22 1/2" x 9 3/4" Dia. of thrust shaft under
 as fitted 14" as fitted 14 3/4"
 15" Dia. of screw 18'-3" Pitch of Screw 18'-6" No. of Blades 4 State whether moveable yes Total surface 108 sq ft
 Feed pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work yes
 Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes
 Donkey Engines 5 Sizes of Pumps 8" x 5 1/2" 7" x 8 1/2" 7" x 7 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 2 @ 3 1/2" 2 @ 3 1/2" In Holds, &c. No. 1 hold - 2 @ 3 1/2" No. 2 hold - 2 @ 3 1/2"
 Tank - 2 @ 3 1/2" No. 4 hold - 2 @ 3 1/2" and 1 @ 3 1/2" Tunnel well - 1 @ 2 1/2"
 Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size 2 @ 3 1/2"
 the bilge suction pipes fitted with yes Are the hoses and straight tailpipes Is the bilge injection rose always accessible
 connections with the sea direct on the skin of the ship yes Are the hoses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible none
 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
 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
 pipes are carried through the bunkers forward hold suction How are they protected under limber boards
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
 Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck

ERS, &c.—(Letter for record (5) Manufacturers of Steel Gutehoffnungshütte A.G. Duisburg & Wittkowitz Bergbau
 surface of auxiliary boiler 1700 sq ft Heating surface of all boilers 10430 sq ft wrapper plates by steel of Scotland and Eisenhütten-Gesellschaft
 Heating Surface of Boilers 8730 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 15-8-28 No. of Certificate 18006
 Can boiler be worked separately yes Area of fire grate in each boiler 71.5 sq ft No. and Description of Safety Valves to
 2 High tip Area of each valve 59.4 sq ft Pressure to which they are adjusted 225 Are they fitted with easing gear yes
 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
 Range of tensile strength 30-34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams WTR
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10 3/8" Lap of plates or width of butt straps 23 1/4"
 stages 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"
 compensating ring 10 1/2" x 1 3/4" plate 85.1 No. and Description of Furnaces in each boiler 4 Deighton Material steel Outside diameter 40 1/2"
 of plain part top Thickness of plates crown 39" Description of longitudinal joint welded No. of strengthening rings none
 bottom 64" bottom 64"
 g pressure of furnace by the rules 221 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 1 1/8" Top 3/4" Bottom 3/4"
 stays to ditto: Sides 9" x 9 1/8" Back 8 1/4" x 8 1/4" Top 9" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 224
 Area of stays steel Area at smallest part 1.73 sq ft Area supported by each stay 68.06 sq ft Working pressure by rules 222 End plates in steam space:
 steel Thickness 1 1/2" Pitch of stays 2 1/4" x 2 1/2" How are stays secured BN Working pressure by rules 222 Material of stays steel
 at smallest part 8.29 sq ft Area supported by each stay 420 Working pressure by rules 222 Material of Front plates at bottom steel
 Material of Lower back plate steel Thickness 1 1/8" Greatest pitch of stays 13 1/4" x 8 1/4" Working pressure of plate by rules 223
 Pitch of tubes 4 1/8" x 4 3/8" Material of tube plates steel Thickness: Front 1 1/8" Back 7/8" Mean pitch of stays 9.92"
 across wide water spaces 14" Working pressures by rules 222 Girders to Chamber tops: Material steel Depth and
 ss of girder at centre 2 @ 10 1/8" x 7 1/8" Length as per rule 37 1/2" Distance apart 9" Number and pitch of stays in each 3 @ 9"
 g pressure by rules 222 Steam dome: description of joint to shell none
 Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 rivets Working pressure of shell by rules Crown plates Thickness How stayed
 after fitting in boiler
 RHEATER. Type Smoke tube Date of Approval of Plan See Nur Rpt (C7667) Tested by Hydraulic Pressure to 440 lbs
 Test 23-8-28 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
 Pressure to which each is adjusted 227 Is Easing Gear fitted yes

See separate report on AUXILIARY BOILER
If so, is a report now forwarded?

The foregoing is a correct description,

Manufacturer.

Is the approved plan of main boiler forwarded herewith

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
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 of

It is submitted that
this vessel is eligible for
THE RECORD. *Volume 9.28 P.D. CL*

Committee's Minute GLASGOW 9 OCT 1928

Assigned + L.M.C. 928.

S. Davis.
Engineer Surveyor to Lloyd's Register of Ships.