

## REPORT ON MACHINERY

No. 18023

WED. SEP. 13 1922

Received at London Office

Date of writing Report 2<sup>nd</sup> Sept 1922 When handed in at Local Office

2/1/1922 Port of Grimsby

No. in Survey held at Grimsby  
Reg. Book.Date, First Survey 16<sup>th</sup> January 1920 Last Survey 1<sup>st</sup> Sept 1922

78716 on the Screw Steamer 'DUNSTAFFNAGE'

(Number of Visits 120)

Gross 4525  
Tons Net 2867  
When built 1922-8

Master

Built at Pt. Glasgow By whom built Lithgows Limited

Engines made at Grimsby

By whom made Rankin and Blackmore Ltd. when made 1922

Boilers made at Grimsby

By whom made Rankin and Blackmore Ltd. when made 1922.

Registered Horse Power

Owners Glen and Co

Port belonging to Glasgow

Nom. Horse Power as per Section 28 488

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## ENGINES, &amp;c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 26-42-70 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 14.56 Material of I.S.  
as fitted 15.00 screw shaft

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 No 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 — If two

liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 60

Dia. of Tunnel shaft as per rule 12.97 Dia. of Crank shaft journals as per rule 13.62 Dia. of Crank pin 13 3/4 Size of Crank webs 25 1/2 x 8 1/4 Dia. of thrust shaft under

collars 13 3/4 Dia. of screw 17-9 Pitch of Screw 17-6 No. of Blades 4 State whether moveable No Total surface 100

No. of Feed pumps 1 MAIN 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 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Duplex Sizes of Pumps 4 1/2 x 6, 5 1/2 x 8, 9 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3-3 1/2 In Holds, &amp;c. Aft Hold 2-3 1/2 Dup Tank 2-3 1/2

Dry Blk. Room D.B.T. 2-3 1/2 Forward Hold 4-3 1/2

No. of Bilge Injections 1 sizes 7 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room &amp; size Yes 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 in Engine room bulkheads always accessible No

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 No

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 No How are they protected —

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 E.R.

## BOILERS, &amp;c.—(Letter for Record S.)

Manufacturers of Steel The Steel Co of Scotland Ltd.

Total Heating Surface of Boilers 7345 Is Forced Draft fitted Yes No. and Description of Boilers 3. G.L. Mult. Single End.

Working Pressure 180 lb Tested by hydraulic pressure to 320 lb Date of test 30.12.20 No. of Certificate 4525.1529.

Can each boiler be worked separately Yes Area of fire grate in each boiler 56.75 No. and Description of Safety Valves to

each boiler Two Spring Area of each valve 11.04 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boiler uptakes and bunkers on woodwork 12 Mean dia. of boilers 15-0 Length 11-6 Material of shell plates S.

Thickness 1 3/16 Range of tensile strength 28 1/2 to 32 1/2 T. Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams L.O.R.

long. seams 285/78 Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 9/8 Lap of plates or width of butt straps 18 1/2

Per centages of strength of longitudinal joint rivets 91.7 Working pressure of shell by rules 182 lb. Size of manhole in shell 16 x 12

plate 85.6

Size of compensating ring 30 1/2 x 26 1/2 x 1 3/16 No. and Description of Furnaces in each boiler 3. Dugden Material S. Outside diameter 47 1/4

Length of plain part top 9 1/2 Thickness of plates crown 3 9/16 Description of longitudinal joint Welded. No. of strengthening rings —

bottom 9 1/2 Working pressure of furnace by the rules 186 Combustion chamber plates: Material S. Thickness: Sides 4 1/64 Back 4 1/64 Top 4 1/64 Bottom 3 1/4

Pitch of stays to ditto: Sides 9 1/8 x 8 1/2 Back 9 1/4 x 8 1/2 Top 9 1/4 x 8 1/2 stays are fitted with nuts or riveted heads No Working pressure by rules 183 lb

Material of stays S. Area at smallest part 1.77 Area supported by each stay 77.4 Working pressure by rules 183 lb End plates in steam space:

Material S. Thickness 1 5/16 Pitch of stays 22 x 18 1/8 How are stays secured D.N. Working pressure by rules 186 lb Material of stays S.

Area at smallest part 7.24 Area supported by each stay 415.0 Working pressure by rules 182 lb Material of Front plates at bottom S.

Thickness 1 3/16 Material of Lower back plate S. Thickness 1 3/16 Greatest pitch of stays 13 1/4 x 8 1/8 Working pressure of plate by rules 186 lb

Diameter of tubes 2 3/4 Pitch of tubes 4 x 3 7/8 Material of tube plates S. Thickness: Front 1 3/16 Back 3/4 Mean pitch of stays 9 13/16

Pitch across wide water spaces 13 1/2 Working pressures by rules 221 lb Girders to Chamber tops: Material S Depth and

thickness of girder at centre 9 3/4 x 1 1/2 Length as per rule 34 39/64 Distance apart 9 1/4 Number and pitch of stays in each 3 @ 8 1/8

Working pressure by rules 182 lb Steam dome: description of joint to shell No % 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 No

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 —



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? —

SPARE GEAR. State the articles supplied:— *Two top and bottom & nuts, two bottom and nuts, two main bearing dith, tender coupling dith, spare valves for air, circulating feed and bilge pumps, one feed or bilge pump plunger, one propeller.*

The foregoing is a correct description,

RANKIN & BLACKMORE, LTD.,

*H. Rankin*

Director.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1920 Jan 16, 21, 24, 26, Feb 9, 9, 17, 23, 26, Mar 2, 5, 11, 16, Apr 8, 15, 22, 29, 30, May 7, 15, 18, 21, 26, 31, Jun 4, 9, 14, 18, 25, 28, 30, Aug 3, 6, 10, 13, 17, 20, 24, 27, Sept 1, 6, 8, 13, 17, 23, 26, 29, Oct 2, 5, 8, 12, 14, 20, 22, 27, 29, Nov 2, 5, 10, 15, 19, 24, 29, Dec 1, 2, 6, 9, 14, 20, 24, 27, 29, 30 (1921), Jan 12, 17, 19, 21, 22, 26, 28, Feb 1, 4, 8, 11, 14, 16, 17, 22, 23, Mar 3, 4, 8, 14, 17, 21 (1922), Apr 8, 12, 19, 25, May 11, 23, 24, 31, Jun 6, 15, 16, 22, 28, July 14, 21, 26, 28, Aug 3, 7, 9, 11, 14, 17, Sept 1.  
During erection on board vessel --  
Total No. of visits *120.*

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

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *27.12.20* Slides *28.1.21* Covers *27.12.20* Pistons *18.6.20* Rods *28.1.21*

Connecting rods *30.4.20* Crank shaft *15.1.20* Thrust shaft *27.10.20* Tunnel shafts *27.10.20* Screw shaft *24.12.20* Propeller *24.12.20*

Stern tube *4.2.21* Steam pipes tested *14.8.22* Engine and boiler seatings *28.7.22* Engines holding down bolts *14.8.22*

Completion of pumping arrangements *14.8.22* Boilers fixed *14.8.22* Engines tried under steam *1.9.22*

Completion of fitting sea connections *16.2.21* Stern tube *4.3.21* Screw shaft and propeller *28.7.22*

Main boiler safety valves adjusted *17.8.22* Thickness of adjusting washers *P.B.L.R. 25/64 527/64 C.B.L.R. 27/64 527/64 S.B.L.R. 25/64 525/64*

Material of Crank shaft *I.S.* Identification Mark on Do. *507.W.L.* Material of Thrust shaft *I.S.* Identification Mark on Do. *507.W.L.*

Material of Tunnel shafts *I.S.* Identification Marks on Do. *507.W.L.* Material of Screw shafts Identification Marks on Do. *507.W.L.*

Material of Steam Pipes *Wrought iron* Test pressure *600 lb.*

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 above Engines and Boilers*

*have been constructed under Special Survey and have been fitted on board the Vessel in accordance with the Society's Rules.*

*The Vessel is eligible, in my opinion, to have been + L.M.C. 9.22 in the Register Book*

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 9.22. F.D. C.L.

*W. Lane*  
15/9/22 *Amld.*

The amount of Entry Fee ... £ *5* : *0* :  
Special ... £ *98* : *4* :  
Donkey Boiler Fee ... £ — : :  
Travelling Expenses (if any) £ — : :  
When applied for, *2/9/1922*  
When received, *5/9/1922*

*W. Lane*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW*

*12 SEP 1922*

Assigned *+ L.M.C. 9.22*

Certificate written *13/9/22*



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