

REPORT ON MACHINERY.

Received at London Office FRI. APR. 7 1922

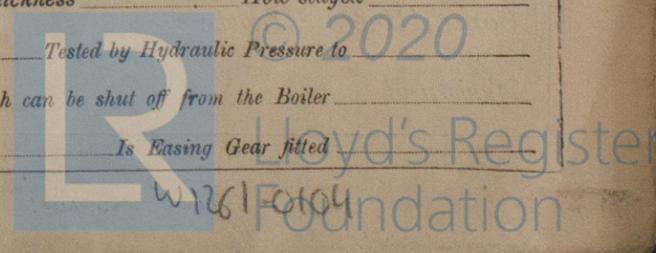
Date of writing Report 3rd April 22 When handed in at Local Office 10 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 29th Aug 1919 Last Survey 30th March 1922
 Reg. Book. on the T.S.S. Barrabool (Number of Visits 184)
 Master Built at Belfast By whom built Kauland & Wolff L^{rs} Tons } Gross }
 Engines made at Belfast By whom made - when made - Net }
 Boilers made at - By whom made - when made -
 Registered Horse Power ✓ Owners Peninsular & Oriental S.S. Co. Ltd belonging to Belfast
 Nom. Horse Power as per Section 28 1322 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Duplex Expansion of Cylinders No. of Cranks 8
 Dia. of Cylinder 23¹/₂ - 34¹/₂ - 48¹/₂ - 70 Length of Stroke 54 Revs. per minute 90 Dia. of Screw shaft as per rule 14.74 Material of S. Steel
 as fitted 15.0 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 ✓ 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 ✓ 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 13.42 Dia. of Crank shaft journals as per rule 14.1 Dia. of Crank pin 14¹/₂ Size of Crank webs 18 x 10¹/₂ Dia. of thrust shaft under
 collars 14¹/₂ Dia. of screw 17¹/₂ - 6 Pitch of Screw 17¹/₂ - 6 No. of Blades 3 State whether mocenble Yes Total surface 72 sq. ft.
 No. of Feed pumps } Diameter of ditto } Stroke } Can one be overhauled while the other is at work }
 No. of Bilge pumps } See separate list Diameter of ditto } Stroke } Can one be overhauled while the other is at work }
 No. of Donkey Engines do Sizes of Pumps do No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 5 - 3¹/₂ - 2 - 5¹/₂ - 4 - 4 In Holds, &c. 13 - 3¹/₂ - 1 - 3

No. of Bilge Injections 2 sizes 8 Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 4 - 4
 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 ✓
 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 Fore hold suction How are they protected Wood & iron casings
 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 D. Colville & Sons L^{rs}
 Total Heating Surface of Boilers 11748 sq. ft. forced Draft fitted Yes No. and Description of Boilers 2 D End Gland
 Working Pressure 215 lbs sq. in. Tested by hydraulic pressure to 430 lbs sq. in. Date of test 28-10-21 No. of Certificates 804 & 803
 Can each boiler be worked separately Yes Area of fire grate in each boiler 143 sq. ft. No. and Description of Safety Valves to
 each boiler 3 Direct Spring Area of each valve 12.56 sq. in. Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork About 17 Mean dia. of boilers 16'-6" Length 28'-0" Material of shell plates Steel
 Thickness 1¹/₂" Range of tensile strength 30-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D. & P.
 long. seams Butt Diameter of rivet holes in long. seams 1¹/₂" Pitch of rivets 10¹/₂" Lap of plates or width of butt straps 23¹/₂"
 Per centages of strength of longitudinal joint rivets 92.5 plate 84.8 Working pressure of shell by rules 227 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring No. Nibs No. and Description of Furnaces in each boiler 8 - Morrison Material Steel Outside diameter 43¹/₂"
 Length of plain part top 2 bottom 8 Thickness of plates crown 3¹/₂" bottom 3¹/₂" Description of longitudinal joint Weld No. of strengthening rings 0
 Working pressure of furnace by the rules 231 lbs Combustion chamber plates: Material Steel Thickness: Sides 2¹/₂" Back ✓ Top 2¹/₂" Bottom 2¹/₂"
 Pitch of stays to ditto: Sides 8" x 8" Back ✓ Top 7¹/₂" x 7¹/₂" If stays are fitted with nuts or riveted heads None Working pressure by rules 233 lbs
 Material of stays Steel Area at smallest part 176 sq. in. Area supported by each stay 64 sq. in. Working pressure by rules 220 lbs End plates in steam space:
 Material Steel Thickness 1¹/₂" Pitch of stays 16" x 15¹/₂" How are stays secured Crowded into Working pressure by rules 215 lbs Material of stays Steel
 Area at smallest part 59 sq. in. Area supported by each stay 248 sq. in. Working pressure by rules 248 lbs Material of Front plates at bottom Steel
 Thickness 7¹/₂" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 2¹/₂" Pitch of tubes 3¹/₂" x 3¹/₂" Material of tube plate Steel Thickness: Front 7¹/₂" Back 4¹/₂" Mean pitch of stays 4¹/₂"
 Pitch across wide water spaces 13¹/₂" Working pressures by rules 346 lbs with 4 doublers to Chamber tops: Material Steel Depth and
 thickness of girder at centre 7¹/₂" x (7¹/₂" + 2) Length as per rule 50¹/₂" Distance apart 8" x 7¹/₂" Number and pitch of stays in each 6 - 7¹/₂"
 Working pressure by rules 261 lbs Steam dome: description of joint to shell ✓ % 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 ✓ Date of Approval of Plan ✓ Tested by Hydraulic Pressure to 2020
 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?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

In other sheet

The foregoing is a correct description,
For HARLAND & WOLFF Ltd.

F. Rebeck

Manufacturer.

Dates of Survey while building
(During progress of work in shops --)
(During erection on board vessel ---)
Total No. of visits

29th Augth 1919 to 30th March 1922

114

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " "

No

Dates of Examination of principal parts—Cylinders 20 - 3 Slides 20 Covers Pistons Rods

Connecting rod 26-10-21 Crank shaft 16-4 Thrust shaft 16-4 Tunnel shafts 7-11-21 Screw shaft 7-11-21 Propeller 22-8-21

Stern tube 22-8-21 Steam pipes tested 11-1-22 Engine and boiler seatings 13-12-21 Engines holding down bolts 13-12-21

Completion of pumping arrangements 16-3-22 Boilers fixed 13-12-21 Engines tried under steam 16-3-22

Completion of fitting sea connections 16-9-21 Stern tube 25-10-21 Screw shaft and propeller 27-10-21

Main boiler safety valves adjusted 16-3-22 Thickness of adjusting washers 9-21/32

Material of Crank shaft S. Steel Identification Mark on Do. LLOYDS 7-11-21 Material of Thrust shaft do Identification Mark on Do. do

Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. LLOYDS 22-8-21

Material of Steam Pipes S. A. Steel Test pressure 645 lbs

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

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

Is this machinery duplicate of a previous case Yes If so, state name of vessel T.S.S. "Panathina"

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The workmanship and the materials are of good description and on trial in Belfast Lough, the machinery worked satisfactorily.

In our opinion, it is eligible for record + L.M.C. 3-22 with notations "Electric Light", "Forced Draft" and "Refrigerating Machinery"

It is submitted that this vessel is eligible for THE RECORD. F. L. M. C. - 3. 22. F. D. C. L.

Ans. 10/4/22

The amount of Entry Fee ...	£ 6 : 0 :	When applied for,
Special ...	£ 133 : 1 :	31-3-1922
Donkey Boiler Fee ...	£ : : :	When received,
Travelling Expenses (if any) £	: : :	

R. F. Bewidge
Engineer Surveyor to Lloyd's Register of Shipping.
A. P. Southwell

Committee's Minute THU. 13 APR. 1922

Assigned + L.M.C. 3.22

F. D. C. L.

MACHINERY CERT
WRITTEN



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Certificate (if required) to be sent to this office

The Surveyors are requested not to write on or below the space for Committee's Minute.