

## REPORT ON MACHINERY.

No. 9296

Received at London Office

- MAR 1925

of writing Report 2 - 3 - 1925 When handed in at Local Office 5 - 3 - 1925 Port of Belfast

in Survey held at Belfast Date, First Survey 14<sup>th</sup> Aug 1923 Last Survey 26<sup>th</sup> Feby 1925

Book. on the New Steel Y.S.S. Razmak (Number of Vols. 121)

ster Built at Greenock By whom built Harland & Wolff Ltd Tons { Gross  
Net

ines made at Belfast By whom made Harland & Wolff Ltd when made 1925

lers made at Belfast By whom made Harland & Wolff Ltd when made 1925

istered Horse Power 1949 Owners Peninsular & Oriental Steam Nav Co Port belonging to Greenock

Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

INES, &c. Description of Engines Quad Triple Expansion Twin Screw No. of Cylinders 8 No. of Cranks 8

of Cylinders 30 1/2, 14 1/2, 63, 89 Length of Stroke 54 Revs. per minute 95 Dia. of Screw shaft 14 1/2 as per rule 14 1/2 as fitted 14 3/4 Material of Steel

ie 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

he propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part

een the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two

s are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 6'-6"

of Tunnel shaft 16" as per rule 16" as fitted 16" Dia. of Crank shaft journals 16.8" as per rule 16.8" as fitted 16.8" Dia. of Crank pin 18 1/2" Size of Crank webs 2' 8 1/2" Dia. of thrust shaft under

rs 18 1/2" Dia. of screw 14 1/2" Pitch of Screw 22'-6" No. of Blades 3 State whether moveable yes Total surface 14' 4"

of Feed pumps 3 Weirs Diameter of ditto 14" Stroke 26" Can one be overhauled while the other is at work yes

of Bilge pumps See list Diameter of ditto 14" Stroke 26" Can one be overhauled while the other is at work yes

of Donkey Engines See list Sizes of Pumps See list No. and size of Suctions connected to both Bilge and Donkey pumps.

Engine Room 3 @ 3 1/2" + 1 @ 4" Bal. Room 1 @ 3 1/2" + 1 @ 3 1/2" + 1 @ 3 1/2" + 1 @ 3 1/2" In Holds, &c. no 1 @ 3 1/2" No 2 @ 3 1/2" + 1 @ 3 1/2"

Chainlocks 1 @ 3" No 1 @ 3 1/2" Tunnel 2 @ 3 1/2"

f Bilge Injections 2 sizes 13" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 2 @ 6"

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 yes

all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both

hey 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 below

hey 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 none How are they protected yes

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

he 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 Boat Deck & Bridge

ERS, &c. (Letter for record 3) Manufacturers of Steel D. D. Huille & Sons Ltd. 4.D. & 2.S.B.

Heating Surface of Boilers 29610 Is Forced Draft fitted yes No. and Description of Boilers 4 D.E., 2 S.E.

ing Pressure 15 Tested by hydraulic pressure to 34 1/2 Date of test 1923 No. of Certificate 1

each boiler be worked separately yes Area of fire grate in each boiler 24 No. and Description of Safety Valves to

boiler 2 Area of each valve 24 Pressure to which they are adjusted 220 lbs Are they fitted with easing gear yes

st distance between boilers or uptakes and bunkers or woodwork 24 Mean dia. of boilers 24 Length 24 Material of shell plates

ess Range of tensile strength 24 Are the shell plates welded or flanged yes Descrip. of riveting: cir. seams

seams Diameter of rivet holes in long. seams 24 Pitch of rivets 24 Lap of plates or width of butt straps

ntages of strength of longitudinal joint 24 Working pressure of shell by rules 24 Size of manhole in shell

compensating ring 24 No. and Description of Furnaces in each boiler 24 Material 24 Outside diameter

of plain part 24 Thickness of plates 24 Description of longitudinal joint 24 No. of strengthening rings

ng pressure of furnace by the rules 24 Combustion chamber plates: Material 24 Thickness 24 Sides 24 Back 24 Top 24 Bottom 24

of stays to ditto: Sides 24 Back 24 Top 24 If stays are fitted with nuts or riveted heads 24 Working pressure by rules

al of stays 24 Area at smallest part 24 Area supported by each stay 24 Working pressure by rules 24 End plates in steam space:

al Thickness 24 Pitch of stays 24 How are stays secured 24 Working pressure by rules 24 Material of stays

at smallest part 24 Area supported by each stay 24 Working pressure by rules 24 Material of Front plates at bottom

ess Material of Lower back plate 24 Thickness 24 Greatest pitch of stays 24 Working pressure of plate by rules

er of tubes 24 Pitch of tubes 24 Material of tube plates 24 Thickness: Front 24 Back 24 Mean pitch of stays

across wide water spaces 24 Working pressures by rules 24 Girders, to Chamber tops: Material 24 Depth and

ss of girder at centre 24 Length as per rule 24 Distance apart 24 Number and pitch of stays in each

ng pressure by rules 24 Steam dome: description of joint to shell 24 % of strength of joint

er Thickness of shell plates 24 Material 24 Description of longitudinal joint 24 Diam. of rivet holes 24

rivets 24 Working pressure of shell by rules 24 Crown plates 24 Thickness 24 How stayed 24

HEATER. Type 24 Date of Approval of Plan 24 Tested by Hydraulic Pressure to 24

Test 24 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

of Safety Valve 24 Pressure to which each is adjusted 24 Is Easing Gear fitted 24



IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

yes

SPARE GEAR. State the articles supplied: - See separate list.

Pumps: 3 Main feed pumps (Weirs) 20" x 14" x 9", 1 aux feed pp (Weirs) 9 1/2" x 4" x 21", 1 Ballast Pp (Weirs) 9" x 4" x 21", 1 oil transfer pp (Weirs) 10 1/2" x 13" x 21", 1 sanitary etc pp (Weirs) 10 1/2" x 13" x 21", 2 oil transfer pp (Weirs) 10 1/2" x 13" x 21", 1 oil running pps 6" x 4" x 12" (Weirs), 1 oil sediment pp (Weirs) 5 1/2" x 6" x 15", 1 waste oil pp (Weirs) 3 1/2" x 4" x 9", 1 Emergency bilge pp double acting turn 9" x 10", 2 Main C. Outlets of one engine. 2 Piston rods complete with metallic pps 51" dia. 10" bore, 2 main air pp 14" x 21" x 16" dual (Weirs), 1 Fresh Water pp. 1 Hot salt water pump. 9 sets each of hp & bottom end bolts & nuts brasses complete. One set valve spindles (4). One set Piston de valves for one engine. One set Piston valve liners for engine. 2 Bolts & nuts complete for main bearings. 2 Bolts & nuts complete for same. 2 sets coupling ed bolts nuts & rim. 2 Brungs propeller blades. 2 sets complete set of spare gear for each pump. which is a set of (for each pump) of suction & delivery and seats with studs & guards. 1 set manhole doors for D.E. bls. & 1 set manhole doors for bls with studs & dogs complete. 1 set safety valve springs for D.E. bls & 2 Safety valve springs for S.E. bls. 4 main & 4 auxiliary feed valves. fuel: 10 Burner 128 tips. 4 Burner supply pipes suction & 2 discharge strainer baskets. Pps are impellers & shaft complete. (are gear list enclosed with invoices).

The foregoing is a correct description,  
For HARLAND AND WOLFF, LIMITED

J.D. Keay.

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 3, 8, 11, 15, 23, 24, 25, 28, 30, 31 Feb 1, 4, 11, 13, 14, 20, 25, 26, 29 Mar 5, 10, 14, 17, 20, 25, 28, 31 Apr 3, 10, 23, 24, 25, 28, 29 May 1, 6, 8, 12, 15, 20, 21, 23, 28 June 2, 3, 5, 9, 10, 16, 17, 18, 21, 24, 25, 26, 27, 29, 30, 31 July 1, 2, 5, 9, 10, 15, 17, 19, 24, 25, 26, 27, 29, 30, 31 Aug 3, 10, 23, 24, 25, 28, 29 Sept 1, 2, 5, 9, 10, 15, 17, 31 Oct 3, 12, 14, 17, 19, 25, 26 = 127  
During erection on board vessel -- 3, 8, 11, 15, 23, 24, 25, 28, 30, 31 Feb 1, 4, 11, 13, 14, 20, 25, 26, 29 Mar 5, 10, 14, 17, 20, 25, 28, 31 Apr 3, 10, 23, 24, 25, 28, 29 May 1, 6, 8, 12, 15, 20, 21, 23, 28 June 2, 3, 5, 9, 10, 16, 17, 18, 21, 24, 25, 26, 27, 29, 30, 31 July 1, 2, 5, 9, 10, 15, 17, 19, 24, 25, 26, 27, 29, 30, 31 Aug 3, 10, 23, 24, 25, 28, 29 Sept 1, 2, 5, 9, 10, 15, 17, 31 Oct 3, 12, 14, 17, 19, 25, 26 = 127  
Total No. of visits 127

Dates of Examination of principal parts - Cylinders 10-11-21 Slides 21-21-21 Covers 9-9-21 Pistons 9-6-21 Rods 3-6-21  
Connecting rods 9-6-21 Crank shaft 10-11-21 Thrust shaft 21-21-21 Tunnel shafts 9-9-21 Screw shaft 15-9-21 Propeller 15-9-21  
Stern tube 9-6-21 Steam pipes tested 9-6-21 Engine and boiler seatings 9-9-21 Engines holding down bolts 10-12-21  
Completion of pumping arrangements 1-1-25 Boilers fixed 2-1-25 Engines tried under steam 9-6-25  
Completion of fitting sea connections 12-1-25 Stern tube 12-1-25 Screw shaft and propeller 12-1-25  
Main boiler safety valves adjusted 19-7-25 Thickness of adjusting washers P. 1/32 S. 1/16 P. 1/16 S. 1/16 P. 1/16 S. 1/16 P. 1/16 S. 1/16  
Material of Crank shafts Steel Identification Mark on Do. 6598 W. 1/2 Material of Thrust shaft Steel Identification Mark on Do. 6598 W. 1/2  
Material of Tunnel shafts Steel Identification Marks on Do. 2111, 2122 Material of Screw shafts Steel Identification Marks on Do. 6598 W. 1/2  
Material of Steam Pipes Solid drawn steel Test pressure 650 lbs  
Is an installation fitted for burning oil fuel yes 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 no If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The Machinery of this vessel has been built under Special Survey. Materials & Workmanship good. Hydraulic tests satisfactory. The whole of the Machinery is efficiently installed & fixed in the vessel & has been tried under steam & is in good & safe working condition & eligible in my opinion to be classed and have received L.M.C. 2.25. Yail Shafts C.L. Electric Light. (F.D.) in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 2.25. FD. CL.  
Fitted for oil fuel 2.25. FP. above 150°F.

William Butts  
Engineer Surveyor to Lloyd's Register of Shipping

The amount of Entry Fee ... £ 6 : 0 : 0  
Special ... £ 148 : 14 : 6  
ELECTRIC LIGHT  
Donkey Boiler Fee ... £ 13 : 4 : 6  
Travelling Expenses (if any) £

Committee's Minute  
Assigned  
THES. 10 MAR 1925  
+ L.M.C. 2.25 F.D. C.L.

Fitted for oil fuel 2.25  
F.D. above 150°F.

Belfast.

Continuation of Report No. 9296 dated 5<sup>th</sup> March, 1925 on the

J.D. Keay  
Principal Items.

HP Cyls. One spring for each escape valve. 4/4 assisted  
do & bolts for cover glands etc. One Piston complete for each  
of one engine. 2 Piston rods complete with metallic  
brasses complete. One set valve spindles (4). One set Piston  
de valves for one engine. One set Piston valve liners for  
engine. 2 Bolts & nuts complete for main bearings.  
adverse tubes & ferrules & 10 lbs packing for same.  
impeller shaft complete with 2 Keys. 2 sets coupling  
2 sets pads for Michell thrust blocks.  
ed bolts nuts & rim. 2 Brungs propeller blades. 2 sets  
complete set of spare gear for each pump. which  
is a set of (for each pump) of suction & delivery  
and seats with studs & guards.  
manhole doors for D.E. bls. & 1 set manhole doors for  
bls with studs & dogs complete.  
1 set safety valve springs for D.E. bls & 2 Safety valve  
springs for S.E. bls.  
sh drain plugs. 4 main & 4 auxiliary feed  
valves.  
fuel: 10 Burner 128 tips. 4 Burner supply pipes  
suction & 2 discharge strainer baskets.  
Pps are impellers & shaft complete.  
(are gear list enclosed with invoices).

William Butts

003971-003979-0114 7/2



Lloyd's Register  
Foundation