

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 29th Sept. 1926 When handed in at Local Office 1st Oct. 1926 Port of GLASGOW. -6 OCT. 1926

No. in Survey held at Paisley Date, First Survey 16th April 1925 Last Survey 29th Sept. 1926
Reg. Book. 39383 on the Steel T.S.S. "HIKITIA" (Number of Visits 4)

Master ✓ Built at Paisley By whom built Heming + Ferguson Ltd. (No 486) Tons Gross 746
Engines made at Paisley By whom made Heming + Ferguson Ltd. (No 486) when made 1926-9 Net 358

Boilers made at do. By whom made do. (No 486) when made 1926-9

Registered Horse Power _____ Owners Wellington Harbour Board Port belonging to Wellington N.Z.

Nom. Horse Power as per Section 28 68 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Compound, surface condensing No. of Cylinders 4 No. of Cranks 4
Dia. of Cylinders 13" x 26" (twin) Length of Stroke 15" Revs. per minute 130 Dia. of Screw shaft as per rule 5 5/8" Material of steel
as fitted 5 3/4" (No liner fitted) (Lead wall glands fitted) Is the screw shaft fitted with a continuous liner the whole length of the stern tube ✓ 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 2ft. 0ins.

Dia. of Thrust shaft as per rule 4 7/8" (Harbour service) as fitted 5" Dia. of Crank shaft journals as per rule 4 9/16" (Harbour service) as fitted 5 1/4" Dia. of Crank pin 5 1/4" Size of Crank webs 10" x 4" Dia. of thrust shaft under collars 5 1/4" Dia. of screw 7'-0" Pitch of Screw 8'-6" No. of Blades 3 (each) State whether moveable no Total surface 18ft. 2"

No. of Feed pumps 2 Diameter of ditto 4" Stroke 12" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 (single) Diameter of ditto 4" Stroke 12" Can one be overhauled while the other is at work yes

No. of Donkey Engines One Sizes of Pumps 4" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 2 @ 2 1/2" In Holds, &c. 1 @ 2 1/2" (each hold)

No. of Bilge Injections One sizes 3 1/2" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes: 3"
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 above

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 Bilge pipes How are they protected Wood ceiling

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 none Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Messrs The Steel Coy of Scotland Ltd.

Total Heating Surface of Boilers 1379ft. 2 Is Forced Draft fitted no No. and Description of Boilers 1 - Cylindrical, Single ended Return-tube
Working Pressure 130 lbs./in. 2 Tested by hydraulic pressure to 245 lbs./in. 2 Date of test 15th Jan. 1926 No. of Certificate 17033

Can each boiler be worked separately ✓ Area of fire grate in each boiler 45.5ft. 2 No. and Description of Safety Valves to each boiler 2 - Direct spring Area of each valve 5.94 ins. 2 Pressure to which they are adjusted 130 lbs./in. 2 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork well clear Mean dia. of boilers 12'-3" Length 10'-0" Material of shell plates steel
Thickness 1 3/16" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. Lap

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1" Pitch of rivets 5 3/8" Lap of plates or width of butt straps 1'-3 3/8"
Per centages of strength of longitudinal joint 82.5 Working pressure of shell by rules 132 lbs./in. 2 Size of manhole in shell 16" x 12"

Size of compensating ring 7" x 1 3/16" No. and Description of Furnaces in each boiler 2 - corrugated Material steel Outside diameter 3'-9 1/2"
Length of plain part top ✓ bottom ✓ Thickness of plates top 7/16" bottom 7/16" Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 137 lbs./in. 2 Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 21/32"
Pitch of stays to ditto: Sides 9 1/4" x 8 3/8" Back 9 1/4" x 9" Top 9 1/4" x 9" If stays are fitted with nuts or riveted heads nuts on inside ends also Working pressure by rules 130 lbs./in. 2

Material of stays steel Area at smallest part 1 1/4" x 1 1/4" Area supported by each stay 100.83 x 77 in. 2 Working pressure by rules 130 lbs./in. 2 End plates in steam space:
Material steel Thickness 2 9/32" Pitch of stays 1'-6" x 1'-3 3/8" How are stays secured 2 nuts Working pressure by rules 130 lbs./in. 2 Material of stays steel

Area at smallest part 2 3/8" Area supported by each stay 287 in. 2 Working pressure by rules 136 lbs./in. 2 Material of Front plates at bottom steel
Thickness 2 3/32" Material of Lower back plate steel Thickness 1 1/16" Greatest pitch of stays 13" x 9" Working pressure of plate by rules 150 lbs./in. 2

Diameter of tubes 3 1/4" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates steel Thickness: Front 2 3/32" Back 2 3/32" Mean pitch of stays 10 5/8"
Pitch across wide water spaces 13 1/4" x 8 1/2" Working pressures by rules 131 lbs./in. 2 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2 @ 6 7/8" x 1 1/16" Length as per rule 2'-5 23/32" Distance apart 9 1/4" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 135 lbs./in. 2 Steam dome: description of joint to shell none % 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 None 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 ✓

Number of Safety Valves ✓ 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:—

- 2 - connecting rod top-end bolts + nuts: ✓
- 2 - connecting rod bottom-end bolts + nuts: ✓
- 2 - main bearing bolts: ✓
- 1 set - coupling bolts: ✓
- 1 set - feed + bilge pump valves: ✓
- Quantity assorted bolts + nuts, and ✓
- Iron of various sizes: ✓

The foregoing is a correct description,

For Fleming & Ferguson, Ltd.
Glasgow

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1925 Apr 16-21-29 May 6-13-15-26 June 2-5-29 July 6-15-22-28 Aug 27-31 Sep 3-8-15-17-22-30 Oct 21
 { During erection on board vessel --- } 29-30 Nov 2-5-10-13-14-23 Dec 9-11-23 (1926) Jan 12-15-23 Mar 25 Apr 1-7-13-15-23-24 May 18 June 15
 Total No. of visits 48 49 Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders { 17-9-25 Slides 15-9-25 Covers 15-9-25 Pistons 28-10-25 Rods 28-10-25
 Connecting rods 30-9-25 Crank shafts 8-9-25 Thrust shafts 1-4-26 Tunnel shafts None Screw shafts 25-3-26 Propellers 25-3-26
 Stern tubes 25-3-26 Steam pipes tested 10-5-26 Engine and boiler seatings 25-3-26 Engines holding down bolts 27-4-26
 Completion of pumping arrangements 29-9-26 Boilers fired 27-4-26 Engines tried under steam 29-9-26
 Completion of fitting sea connections 7-4-26 Stern tubes 7-4-26 Screw shafts and propellers 13-4-26
 Main boiler safety valves adjusted 15-6-26 Thickness of adjusting washers 3/8" P. 5/16" S.
 Material of Crank shafts steel Identification Mark on Do. LLOYD'S N° 1120 J.F.N. 8-9-25 Material of Thrust shafts steel Identification Mark on Do. LLOYD'S N° 1120 J.F.N. 1-4-26
 Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts steel Identification Marks on Do. LLOYD'S N° 1120 J.D.B. 25-3-26
 Material of Steam Pipes solid drawn copper Test pressure 260 lbs./in²
 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 Yes. If so, state name of vessel J.S.S. "Rapak"

General Remarks (State quality of workmanship, opinions as to class, &c. These engines & the boiler have been built under special survey in accordance with the Rules & the approved plans: the material & workmanship are good. they have been properly fitted on board & tried under steam with satisfactory result.

This machinery is eligible, in my opinion, to be classed in the Register Book with notations: L.M.C. 9.26 & shafts P.O.S. - O.G. for Harbour service.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.26. O.G.

CMD. J.D. 6/10/26

The amount of Entry Fee ... £ 2 : - :
 Special ... £ 17 : - :
 Donkey Boiler Fee ... £ - : - :
 Travelling Expenses (if any) £ - : - :

When applied for, 5/10/26
 When received, 7.10.1926

J.D. Boyle
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5-OCT 1926

Assigned + L.M.C. 9.26.

CERTIFICATE WRITTEN 6



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

26 Glasgow 11/10/26