

REPORT ON MACHINERY.

No. 26886

Received at London Office MON. 1-JAN. 1917

Report of 28th Dec 1916 When handed in at Local Office 29th Dec 1916 Port of Honolulu
No. in Survey held at Honolulu Date, First Survey 10 Mar 15 Last Survey 23 Dec 1916
Reg. Book. on the Machinery of the S.S. Birchleaf (Number of Visits 96) Tons { Gross 587.3
Net 355.5
Master Robert Built at Honolulu By whom built Short Brothers Ltd. When built 1916
Engines made at Honolulu By whom made J. Dickinson & Sons Ltd when made 1916
Boilers made at " By whom made " when made 1916
Registered Horse Power " Owners Lane & Macanobrew Ltd. Port belonging to London
Nom. Horse Power as per Section 28 465 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 27 1/2, 45, 75 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 14.89 Material of iron
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
Is the 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
between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two
liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5'-3"
Dia. of Tunnel shaft as per rule 13.5 Dia. of Crank shaft journals as per rule 14.18 Dia. of Crank pin 14 1/2 Size of Crank webs as per rule 14.89 Dia. of thrust shaft under
collars 14 1/2 Dia. of screw 17-9 Pitch of Screw 16'-9" No. of Blades 4 State whether moveable no Total surface 99
No. of Feed pumps 2 Diameter of ditto 7" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Donkey Engines 2 Sizes of Pumps 9" X 11" X 10" & 1 1/2" X 4 1/2" X 10" and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 of 3 1/2" & 1 of 3" in E.R. 2 of 3 1/2" in stokehold In Holds, &c. Oil cargo pumps & 2 of
2 1/2" in fore hold
No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 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 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 Below
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 none How are they protected Yes
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
Dates of examination of completion of fitting of Sea Connections 3/7/16 of Stern Tube 22/8/16 Screw shaft and Propeller 28/3/16
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record Yes) Manufacturers of Steel J. & Spencer & Sons
Total Heating Surface of Boilers 1118 Is Forced Draft fitted no No. and Description of Boilers 3 Single-ended
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 22/7/15 No. of Certificate 3307
Can each boiler be worked separately Yes Area of fire grate in each boiler Oil fuel No. and Description of Safety Valves to
each boiler 2 direct spring Area of each valve 8.3 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 15'-9 1/2" Length 11'-6" Material of shell plates Steel
Thickness 1 1/2" Range of tensile strength 29 1/2-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.t.b.
Long. seams Z.T.d.b. Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 5/8" Lap of plates or width of butt straps 19 1/4"
Per centages of strength of longitudinal joint 92.4 Working pressure of shell by rules 181.5 lbs Size of manhole in shell 16 X 12"
Size of compensating ring 8 5/8 X 1 1/2" No. and Description of Furnaces in each boiler 4 plain Material Steel Outside diameter 40 1/4"
Length of plain part top 72" Thickness of plates bottom 89 1/2" Description of longitudinal joint welded No. of strengthening rings Yes
Working pressure of furnace by the rules 180.5 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"
Pitch of stays to ditto: Sides 10 3/4 X 8" Back 11 X 7 3/4" Top 10 3/4 X 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lbs
Material of stays Steel Diameter at smallest part 2.03 Area supported by each stay 85 Working pressure by rules 214 lbs End plates in steam space:
Material Steel Thickness 1 3/16" Pitch of stays 17 X 21" How are stays secured d.n.w. Working pressure by rules 183 lbs Material of stays Steel
Diameter at smallest part 6.7 Area supported by each stay 357 Working pressure by rules 195 lbs Material of Front plates at bottom Steel
Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13 X 11" Working pressure of plate by rules 182 lbs
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 X 4 1/2" Material of tube plates Steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9 X 9"
Pitch across wide water spaces 13 1/4" Working pressures by rules 288 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 6 3/4 X 2 1/4" Length as per rule 33 3/8" Distance apart 8" Number and pitch of stays in each 2 of 10 3/4"
Working pressure by rules 186 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet
holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes
If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes
Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

IS A DONKEY BOILER FITTED?

SPARE GEAR. State the articles supplied:—

If so, is a report now forwarded?

Mdb 9369

Two top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valve, a quantity of assorted bolts nuts & iron, propeller & propeller shaft, and minor details in accordance with the specification.

The foregoing is a correct description,

John Dickinson & Sons Limited

Wicham

Manufacturer.

Dates of Survey while building
During progress of work in shops - 15. Mar. 10. 12. 16. 19. 23. 30. Apr. 7. 12. 22. May 12. 21. June 15. Jul. 22. 24. Dec. 5. 11. 16. 25. Dec. 9. 20. 30. Jan. 20. Feb. 6. 11. 14. 24.
During erection on board vessel - Mar. 2. 7. 9. 14. 21. 23. 27. 28. 30. Apr. 4. 6. 11. 14. 20. 26. 28. May 2. 10. 12. 16. 22. 27. 31. June 2. 6. 8. 13. 15. 20. 24. 30. Jul. 3. 5. 6. 11. 14. 24. Aug. 2. 10.
Total No. of visits - 96
Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 13/6/16 Slides 15/6/16 Covers 5/7/16 Pistons 5/7/16 Rods 15/6/16
Connecting rods 5/7/16 Crank shaft 16/5/16 Thrust shaft 2/8/16 Tunnel shafts ✓ Screw shaft 15/6/16 Propeller 15/6/16
Stern tube 23/5/16 Steam pipes tested 10-20/10/16 Engine and boiler seatings 28/8/16 Engines holding down bolts 25/9/16
Completion of pumping arrangements 23/12/16 Boilers fixed 25/9/16 Engines tried under steam 8/12/16
Main boiler safety valves adjusted 8/12/16 Thickness of adjusting washers S.F. 1/2" A 2 1/4" P.F. 1/2" A 1/2" Ford. F 3/8" A 9/16
Material of Crank shaft Steel Identification Mark on Do. 24/7/16 Material of Thrust shaft Steel Identification Mark on Do. 2/8/16
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 24/6/16
Material of Steam Pipes Solid drawn copper ✓ Test pressure 360 lbs
Is an installation fitted for burning oil fuel 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, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full power. In my opinion this vessel is eligible for the record of L.M.C. 12.16, fitted for oil fuel over 150°.

A T piece on the starboard side of pump room broke on final test and is to be replaced as soon as possible, the pumping arrangements are efficient with T piece blanked off now.

It is submitted that this vessel is eligible for

THE RECORD + L.M.C. 12.16.

Fitted for oil fuel 12.16. F.P. above 150° F.

The amount of Entry Fee ... £ 3 :

Special ... £ 43 : 5 :

Donkey Boiler Fee ... £ 40 :

Travelling Expenses (if any) £ :

When applied for,

30 DEC 1916

When received,

8. 1. 1917

Committee's Minute FRI. 5-JAN. 1917

Assigned

+ L.M.C. 12.16

Fitted for oil fuel 12.16

F.P. above 150° F.

Charles Cooper
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUE. 26 JUN. 1917

MACHINERY CERTIFICATE
WRITTEN



Lloyd's Register
Foundation