

# REPORT ON MACHINERY

No. 28236  
WED. DEC. 28 1921

Date of writing Report 19 When handed in at Local Office 23 DEC 1921 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND. Date, First Survey 14<sup>th</sup> Jan 1921 Last Survey 14<sup>th</sup> Dec 1921  
Reg. Book. on the S/S 'BRITISH JUDGE' (Number of Visits 43)

Master Built at Sunderland By whom built Sir Jas doing Remo Lt (679) When built 1921  
Engines made at Sunderland By whom made Messrs G. Clark Lt (1054) when made 1921  
Boilers made at Sunderland By whom made Messrs G. Clark Lt (1054) when made 1921  
Registered Horse Power Owners The British Tanker Co. Ltd Port belonging to London  
Nom. Horse Power as per Section 28 560 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 28" 46" 75" Length of Stroke 51" Revs. per minute 75 Dia. of Screw shaft as per rule 75.37 Material of shaft as fitted 15.5" (screw shaft) steel  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube 420 Is the after end of the liner made water tight in the propeller boss 420 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 5'-2"  
Dia. of Tunnel shaft as per rule NONE Dia. of Crank shaft journals as per rule 14.64 Dia. of Crank pin 15.4 Size of Crank webs 10x22.5 Dia. of thrust shaft under collars 15.7 Dia. of screw 18-6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable 420 Total surface 108.9  
No. of Feed pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work 420  
No. of Bilge pumps 2 Diameter of ditto 4.5" Stroke 27" Can one be overhauled while the other is at work 420  
No. of Donkey Engines 3 Sizes of Pumps 8x10.5x21, 7x5x16, 8x8x16 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 3 @ 3.5" 1 @ 3" 6 O.F. Pump in E. Room Lufford

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump 420 Is a separate Donkey Suction fitted in Engine room & size 420 3.5"  
Are all the bilge suction pipes fitted with roses 420 Are the roses in Engine room always accessible 420 Are the sluices on Engine room bulkheads always accessible None  
Are all connections with the sea direct on the skin of the ship 420 Are they Valves or Cocks Both  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 420 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 420 Are the Blow Off Cocks fitted with a spigot and brass covering plate 420  
What pipes are carried through the bunkers None How are they protected —  
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times 420  
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges 420  
Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door MACH: AFT worked from —

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spence & Co  
Total Heating Surface of Boilers 8277.5 Is Forced Draft fitted 420 No. and Description of Boilers Three Single ended  
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 18.7.21 No. of Certificate 3769  
Can each boiler be worked separately 420 Area of fire grate in each boiler OIL FUEL ONLY No. and Description of Safety Valves to each boiler 2 Spring Valves Area of each valve 11.04 sq. in. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear 420  
Smallest distance between boilers or uptakes and bunkers or woodwork 18" Ex. Mean dia. of boilers 15-9 Length 11-6 Material of shell plates S  
Thickness 1.64 Range of tensile strength 29-32.5 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap etc  
long. seams d. 1/2 to 9/16 Diameter of rivet holes in long. seams 1.5/16 Pitch of rivets 9.5/16 Lap of plates or width of butt straps 20.5  
Per centages of strength of longitudinal joint rivets 87 plate 86 Working pressure of shell by rules 185 Size of manhole in shell 12x16  
Size of compensating ring 8.5 + 1.4 No. and Description of Furnaces in each boiler 3 Brighton Material S Outside diameter 4-1  
Length of plain part top — bottom — Thickness of plates crown 3/4 bottom 3/64 Description of longitudinal joint Welded No. of strengthening rings —  
Working pressure of furnace by the rules 225 Combustion chamber plates: Material S Thickness: Sides 23/32 Back 32 Top 23 Bottom 7/8  
Pitch of stays to ditto: Sides 9.3/8 x 9.1/4 Back 8 x 8.5 Top 8.5 x 11 If stays are fitted with nuts or riveted heads Nuts material stays Working pressure by rules 184  
Material of stays S Area at smallest part 2.36 sq. in. Area supported by each stay 95.0 sq. in. Working pressure by rules 224 End plates in steam space:  
Material S Thickness 1.5/16 Pitch of stays 18x21 How are stays secured d. n. + w. Working pressure by rules 200 Material of stays S  
Area at smallest part (8.9 sq. in.) Area supported by each stay 396 sq. in. Working pressure by rules 230 Material of Front plates at bottom S  
Thickness 1.5/16 Material of Lower back plate S Thickness 1.5/16 Greatest pitch of stays 15 Working pressure of plate by rules 195  
Diameter of tubes 2.5 Pitch of tubes 3.4 x 3.5 Material of tube plates S Thickness: Front 1.5/16 Back 3/4 Mean pitch of stays 10.7 x 7.5  
Pitch across wide water spaces 13.5 Working pressures by rules 180 Girders to Chamber tops: Material S Depth and  
thickness of girder at centre 7.5 x 1.3 Length as per rule 33 Distance apart 8.5 Number and pitch of stays in each 2, 11  
Working pressure by rules 180 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 —  
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? **YES** ✓

If so, is a report now forwarded? **YES** ✓

SPARE GEAR. State the articles supplied:— Two top end and two bottom end connecting rod bolts and nuts, two main bearing bolts, one set connecting bolts, one set pad and ledge pump valves, assorted bolts and nuts, two various sizes, two propeller blades, one propeller shaft, pair bottom end and top end brasses, air pump rod, one slide valve spindle, one ecc. strap, one set pad pins for Mitchell thrust.

The foregoing is a correct description,  
**FOR GEORGE CLARK LIMITED**

W. G. Mills Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1921 Jan 14, Feb 14, 17, 23, Mar 4, 22, Apr 9, 13, 14, 27, May 2, 6, 18, June 6, 17, July 1, 12, 15, 18, 22, 28, Aug 15, 24, Sep 7, 12, 16, 19, 22, Oct 3, 7, 17, 24, Nov 27, 11, 15, 17, 23, 29, Dec 1, 8, 14. Total No. of visits **43**. Is the approved plan of main boiler forwarded herewith **YES** ✓. " " " donkey " " " **YES** ✓.

Dates of Examination of principal parts—Cylinders 1.7.21 Slides 2.5.21 Covers 21.5.21 Pistons 6.6.21 Rods 8.10.21 Connecting rods 15.7.21 Crank shaft 6.6.21 Thrust shaft 6.6.21 Tunnel shafts NONE Screw shafts 7.10.21 Propeller 17.6.21 Stern tube 22.9.21 Steam pipes tested 24.10.21 Engine and boiler seatings 24.10.21 Engines holding down bolts 2.11.21 Completion of pumping arrangements 11.11.21 Boilers fixed 2.11.21 Engines tried under steam 8.12.21 Completion of fitting sea connections 17.10.21 Stern tube 24.10.21 Screw shaft and propeller 24.10.21 Main boiler safety valves adjusted 8.12.21 Thickness of adjusting washers For B, P 7/16 S 7/16. Port B, P 7/16 S 7/16 Star B, P 1/2 S 1/2 SET. Material of Crank shaft **Steel** Identification Mark on Do. **1054 GAH** Material of Thrust shaft **Steel** Identification Mark on Do. **1054 GAH** Material of Tunnel shafts **NONE** Identification Marks on Do. ✓ Material of Screw shafts **Steel** Identification Marks on Do. **1054 GAH** Material of Steam Pipes **Iron** Test pressure **540 lbs sq**. 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. If so, state name of vessel.

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

In letter from Sec. dated 22nd Nov. 1919 also letter from Sec. to Sir Jas Laing & Co dated 19th Nov. 1919.

The machinery of this vessel has been built under special survey, the materials and workmanship are sound and good. The results of tests made by the British Corporation Surveyors on the boiler material have been examined and found satisfactory. (Certificates enclosed) The vessel is eligible in my opinion to have record of + L.M.C. 12.21 Fitted for burning oil fuel 12.21 Flash point above 150°F.

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

**F. L. M. C. - 12.21. F.D. C.L.**

Fitted for Oil Fuel, 12.21, F.P. above 150°F.

*L. J.*  
29/12/21. *J.P.R.*

The amount of Entry Fee ... £ **6** : : When applied for, Special ... £ **103** : - : **20 DEC 1921** Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : **24.12.19**

*G.A.H.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+ *L.M.C. 12.21. F.D. C.L.*

*Fitted for oil fuel 12.21 F.P. above 150°F.*

CERTIFICATE WHEN ISSUED



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Lloyd's Register Foundation

SUNDERLAND.

in duplicate

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

Rpt. 5a

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