

# REPORT ON MACHINERY.

No. 25707

Received at London Office

Date of writing Report 19 17.7.22 When handed in at Local Office 17.7.22 Port of NEWCASTLE-ON-TYNE.  
 No. in Survey held at Newcastle Date, First Survey 22 Feb/21 Last Survey 14 July 1922  
 Reg. Book. on the "BADARPUR" (Number of Visits 66)

Master Burnah Oil Co. Ltd. Built at Newcastle By whom built R. M. Hawthorn Leslie & Co. Ltd. No. 528 When built 1921  
 Engines made at Newcastle-on-Tyne By whom made R. M. Hawthorn Leslie & Co. Ltd. No. 3488 when made 1922  
 Boilers made at Newcastle-on-Tyne By whom made R. M. Hawthorn Leslie & Co. Ltd. when made 1922  
 Registered Horse Power 715 Owners Burnah Oil Co. Ltd. Port belonging to Rangoon  
 Nom. Horse Power as per Section 28 715 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Inverted Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 30" - 50" - 80" Length of Stroke 54" Revs. per minute 76 Dia. of Screw shaft as per rule 16.23" / as fitted 16.78" Material of screw shaft Stm. Steel  
 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 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'-7 1/2"  
 Dia. of Tunnel shaft as per rule 14.91" / as fitted 15.3/4" Dia. of Crank shaft journals as per rule 15.65" / as fitted 16.1/2" Dia. of Crank pin 16 1/2" Size of Crank webs 24" x 10 1/2" Dia. of thrust shaft under collars 16 3/8" Dia. of screw 19'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable Yes Total surface 135 sq ft  
 No. of Feed pumps 2 Duplex Diameter of ditto 9" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto Ballast 9" x 10" x 10" / Duplex 9" x 10" x 10" Stroke — Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 1 Sizes of Pumps 9" x 12" x 21" No. and size of Suctions connected to both Bilge and Donkey pumps —  
 In Engine Room 3 - 3 1/2" In Holds, &c. None, except in Forehold; 2-4" dia.

No. of Bilge Injections 1 sizes 12" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes - 3 1/2"  
 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  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel J. Spence & Sons Ltd.  
 Total Heating Surface of Boilers main 9450 sq ft / 11066 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 S.S. multitubular main and 1 S.S. Auxiliary  
 Working Pressure 180 Tested by hydraulic pressure to 320 lbo Date of test 2-9-21 / 1-7-21 No. of Certificate 2-9570 / 1-9577  
 Can each boiler be worked separately Yes Area of fire grate in each boiler Oil-fueled No. and Description of Safety Valves to each boiler 2. Spring-loaded Area of each valve 12.50" Pressure to which they are adjusted 1" Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 16'-6" Length 11'-6" Material of shell plates Steel  
 Thickness 3/8" Range of tensile strength 28,000 psi Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams D.R. Lap long. seams L.R. D.S. Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 2 1/8"  
 Per centages of strength of longitudinal joint rivets 92 Working pressure of shell by rules 184 Size of manhole in shell 16" x 12" plate 85.4  
 Size of compensating ring 4 1/2 x 3 1/2 x 1 3/8" No. and Description of Furnaces in each boiler 4 Deighton Material Steel Outside diameter 41 1/16"  
 Length of plain part top 9 1/2" / bottom 7 1/2" Thickness of plates 7 1/2" Description of longitudinal joint weld No. of strengthening rings —  
 Working pressure of furnace by the rules 186-1 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back Wings 3/4" Top 3/4" Bottom 1"  
 Pitch of stays to ditto: Sides 8 1/2" x 8" Back 9 1/2" x 7 1/2" Top 8 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 266  
 Material of stays Steel Area at smallest part 1.730" Area supported by each stay 74.80" Working pressure by rules 208 End plates in steam space: Material Steel Thickness 1 9/32" Pitch of stays 16" x 24" How are stays secured L. Nuts Working pressure by rules 184 Material of stays Steel  
 Area at smallest part 5.56 Area supported by each stay 336.0" Working pressure by rules 182 Material of Front plates at bottom Steel Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 15" Working pressure of plate by rules 218  
 Diameter of tubes 2 3/4" Pitch of tubes 4 x 3 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 7 7/8"  
 Pitch across wide water spaces 14" Working pressures by rules 205 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x 1 1/2" Length as per rule 35 1/2" Distance apart 8" Number and pitch of stays in each 3-8 1/2"  
 Working pressure by rules 235 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 Schmidt's Patent Date of Approval of Plan 28 Feb. 1921 Tested by Hydraulic Pressure to 360 lbs.  
 Date of Test 4/7/22 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes  
 Diameter of Safety Valve 2" dia. Pressure to which each is adjusted 195 lbs. Is Easing Gear fitted Yes

IS A DONKEY BOILER FITTED? *Ann. Boils*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— 2 Top End Bolts, 1 pair C.R. Bottom End Bolts, 2 main Bearing Bolts, one set Coupling Bolts, one set complete of Piston Rings, one Propeller shaft & Propeller, 2 sets of 9 studs, 2 sets Top End Brasses, 2 sets Crank pin Bushes, 1 Uddi spindle, 1 Air pump rod, 1 Propeller shaft for Centrifugal pump, 1 set of check valves, 1 set of Eccentric Rod Bolts, 4 sets of valves & Springs for main pump, 100 Condenser Ferrules, 40 Condenser Tubes, 1 set of Kidney piece for Thrust Block, 1 set of valves for air pump, 12 Stud Bolts for Jack Rings, one pair Eccentric Rod Brasses, one Eccentric Cheave & Strap, one set Rings & Springs for H.P. Piston valve, one set of valve springs for each engine fitted, 20 Plain main Boiler tubes & 4 stay tubes, 10 Condenser tubes, 2 Safety valve springs for main Boilers, one set of spring for Discharging Boiler, set of valves, guards & springs for Ball pump, set of valves, seats & guards for General Service pump, assorted Bolts, nuts, Shuts and Bars of iron, Steel copper pump. The foregoing is a correct description, & read. Set of valves for one fuel Transfer pump.

Manufacturer.



1921  
Dates of Survey while building: During progress of work in shops - Feb. 22, Mar. 14, 24, Apr. 25, May 5, 24, 27, June 3, 29, July 5, 7, 12, 22, Aug. 4, 23, Sep. 8, 19, 28, Oct. 5, 9, 10, 14, 17, 20, 24, 25, 27, 31, Nov. 3, 9, 12, 17, 23, 25, 28, Dec. 1, 2, 5, 13, 15, 21, 30, 1922  
During erection on board vessel - Feb. 30, Feb. 7, 14, 18, 27, 28, Mar. 2, 8, 15, Apr. 24, 27, June 9, 24, 27, July 3, 4, 7, 14.  
Total No. of visits: 66

Is the approved plan of main boiler forwarded herewith *Yes*

Is the approved plan of donkey boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 25.10.21 Slides 25.10.21 Covers 8.9.21 Pistons 8.9.21 Rods 10.10.21  
Connecting rods 23.8.21 Crank shaft 7.11.21 Thrust shaft 6.1.22 Tunnel shafts 25.11.21 Screw shaft 23.11.21 Propeller 23.11.21  
Stern tube 7.10.21 Steam pipes tested 4.4.22 Engine and boiler seatings 27.2.22 Engines holding down bolts 27.2.22  
Completion of pumping arrangements 11/1/22 Boilers fixed 9.6.22 Engines tried under steam 14/1/22  
Completion of fitting sea connections 13.12.21 Stern tube 13.12.21 Screw shaft and propeller 13.12.21  
Main boiler safety valves adjusted 4/4/22 Thickness of adjusting washers *Ann. Boils 76 main Boilers, 132* 573N  
Material of Crank shaft S.M.S. Identification Mark on Do. *R.L.A. 11.21* Material of Thrust shaft S.M.S. Identification Mark on Do. *R.L.A. 122*  
Material of Tunnel shafts S.M.S. Identification Marks on Do. *R.L.A. 11.21* Material of Screw shafts S.M.S. Identification Marks on Do. *R.L.A. 11.21*  
Material of Steam Pipes *Steel* Test pressure 540 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 Engines and Boilers of this vessel were built under Special Survey and the materials and workmanship are good. On completion they were examined under steam and found to work satisfactorily.

The machinery throughout is now in good and efficient condition and eligible in our opinion for Classification in the Local Register Book with records of L.M.C. 7.22. Fitted for oil fuel F.P. above 150°F.

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. - 7.22. F.D. C.L.*  
*Fitted for Oil Fuel, 7.22, F.P. above 150°F.*

*L.J.* 19/7/22 *Ans.*

The amount of Entry Fee ... £ 6 : : When applied for.  
Special ... £ 110 : 15/ : 14/21/22 *Wm. Austin. & Co. Assessors.*  
Donkey Boiler Fee ... £ : : When received.  
Travelling Expenses (if any) £ : :  
FRI. JUL. 21 1922

Committee's Minute Assigned  
*+ L.M.C. 7.22 F.D. C.L.*  
*Fitted for oil fuel &c*

MACHINERY CERTIFICATE WRITTEN



Newcastle (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.