

# REPORT ON MACHINERY

No. 8405

Date of writing Report 22<sup>nd</sup> Dec 1922 When handed in at Local Office

Received at London Office TUE 9 JAN 1923

Port of Dundee

No. in Survey held at Dundee Date, First Survey 18<sup>th</sup> Oct 1920 Last Survey 2<sup>nd</sup> Jan 1923  
Reg. Book. on the "S. Asiatic" "Arthurian" (Number of Visits 44)

Master Burntisland Built at Burntisland By whom built Burntisland S.B.C. No 112 Tons } Gross  
Engines made at Dundee By whom made Cooper & Greig. Ltd. No 234 when made 1923 } Net  
Boilers made at Sunderland By whom made N.E. Marine Eng. Co. Ltd. No 2506 when made 1921  
Registered Horse Power 342 Owners to H. Cockerline & Co. Port belonging to Hull  
Nom. Horse Power as per Section 28 342 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 25 x 41 x 68" Length of Stroke 45 Revs. per minute 70 Dia. of Screw shaft as per rule 13.6 Material of screw shaft 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 55"  
Dia. of Tunnel shaft as per rule 13.4 Dia. of Crank shaft journals as per rule 13.02 Dia. of Crank pin 13.4 Size of Crank webs 25 1/2 x 8 3/16" Dia. of thrust shaft under collars 13 1/4" Dia. of screw 16.6" Pitch of Screw 16.6" No. of Blades 4 State whether moveable no Total surface 90 sq ft  
No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 3 Sizes of Pumps BALLAST 10 1/2 x 12 1/2 x 21"  
In Engine Room 3 @ 3 1/2" by tank under Boiler 1 @ 3" No. and size of Suctions connected to both Bilge and Donkey pumps In Holds, &c. No 1 Hold 2 @ 3 1/2": No 2 Hold 2 @ 3 1/2": No 3 Hold 2 @ 3 1/2": No 4 hold 2 @ 3 1/2": Tunnel well 1 @ 2 1/2": Fore Peak 1 @ 2 1/2"  
No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump C.P. 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 Forward bilge suction How are they protected Strong wood casings  
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 Yes Is it fitted with a watertight door Yes worked from Upper deck level

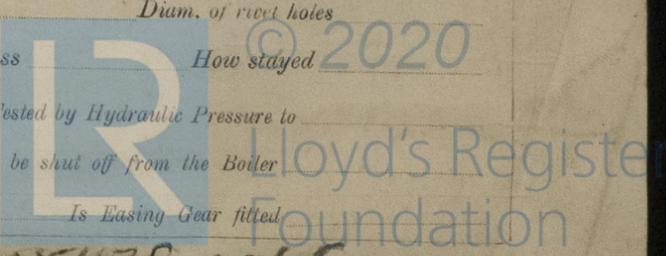
**OILERS, &c.**—(Letter for record R.) Manufacturers of Steel  
Total Heating Surface of Boilers 5336 sq ft Is Forced Draft fitted no No. and Description of Boilers Two single ended multitubular  
Working Pressure 180 lbs Tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_  
Can each boiler be worked separately Yes Area of fire grate in each boiler \_\_\_\_\_ No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 9.6 sq ft Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
Smallest distance between boilers on uptakes and bunkers on woodwork 18" Mean dia. of boilers \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_  
Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Are the shell plates welded or flanged \_\_\_\_\_ Descrip. of riveting: cir. seams \_\_\_\_\_  
Pitch of rivets \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_  
Percentage of strength of longitudinal joint \_\_\_\_\_ Working pressure of shell by rule \_\_\_\_\_ Size of manhole in shell \_\_\_\_\_  
Size of compensating ring \_\_\_\_\_ No. and Description of Furnaces in each boiler \_\_\_\_\_ Material \_\_\_\_\_ Outside diameter \_\_\_\_\_  
Length of plain part \_\_\_\_\_ Thickness of plates \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ No. of strengthening rings \_\_\_\_\_  
Working pressure of furnace by the rules \_\_\_\_\_ Combustion chamber plates: Material \_\_\_\_\_ Thickness: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ Bottom \_\_\_\_\_  
Pitch of stays to ditto: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ If stays are fitted with nuts or riveted heads \_\_\_\_\_ Working pressure by rules \_\_\_\_\_  
Material of stays \_\_\_\_\_ Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates in steam space: \_\_\_\_\_  
Material \_\_\_\_\_ Thickness \_\_\_\_\_ Pitch of stays \_\_\_\_\_ How are stays secured \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Material of stays \_\_\_\_\_  
Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Material of Front plates at bottom \_\_\_\_\_  
Thickness \_\_\_\_\_ Material of lower back plate \_\_\_\_\_ Thickness \_\_\_\_\_ Greatest pitch of stays \_\_\_\_\_ Working pressure of plate by rules \_\_\_\_\_  
Diameter of tubes \_\_\_\_\_ Pitch of tubes \_\_\_\_\_ Material of tube plates \_\_\_\_\_ Thickness: Front \_\_\_\_\_ Back \_\_\_\_\_ Mean pitch of stays \_\_\_\_\_  
Pitch across wide water spaces \_\_\_\_\_ Working pressures by rules \_\_\_\_\_ Girders to Chamber tops: Material \_\_\_\_\_ Depth and \_\_\_\_\_  
Thickness of girder at centre \_\_\_\_\_ Length as per rule \_\_\_\_\_ Distance apart \_\_\_\_\_ Number and pitch of stays in each \_\_\_\_\_  
Working pressure by rules \_\_\_\_\_ 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 \_\_\_\_\_

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE MARGIN.

*Particulars of Boilers*  
*Sunderland*  
*28055*

005429-005435-0065



IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes (Middlebro Rpt No 1119)*

SPARE GEAR. State the articles supplied:— *1 set each of top & bottom end, main bearing & coupling bolts & nuts. 1 set each of feed & bilge pump suction & delivery valves, 1 set each of air & circulating pump valves, 2 main & 2 donkey check valves, 12 Condenser tubes & 120 ferrules, 1 c.s. propeller, 1 screw shaft, 1 safety valve spring & plain boiler tubes, 1 set of springs for cylinder escape valves, feed & bilge pumps. assorted cast iron bolts & nuts.*

The foregoing is a correct description,

For COOPER & GREIG LIMITED

*David Cooper*  
DIRECTOR

Manufacturer.

Dates of Survey while building: During progress of work in shops - - *1920* OCT. 18. 19. NOV. 11. 15. DEC. 30. *1921* FEB. 2. 16. 21. MAR. 9. 14. 23. APR. 5. 8. 21. MAY 6. 12. 19. JUN. 3. 14. JULY 4. 19. AUG. 2. 9. 19. 22. SEP. 6. 13. 20. OCT. 4. 14. *1922* NOV. 22. 24. DEC. 4. 12. 15. 18. 19. 21. 26. 27. 28. *1923* JAN. 2. During erection on board vessel - - - Total No. of visits *44.*

Is the approved plan of main boiler forwarded herewith  " " " donkey " " "

Dates of Examination of principal parts—Cylinders *6-5-21* Slides *9-8-21* Covers *6-5-21* Pistons *9-8-21* Rods *19-5-21*  
Connecting rods *19-5-21* Crank shaft *3-6-21* Thrust shaft *6-5-21* Tunnel shafts *22-8-21* Screw shaft *22-8-21* Propeller *2-8-21*  
Stern tube *19-8-21* Steam pipes tested *15-12-22* *H.M.C. Glasgow* Engine and boiler seatings *Leith Rpt* Engines holding down bolts *12-12-22*  
Completion of pumping arrangements *28-12-22* Boilers fixed *12-12-22* Engines tried under steam *27-12-22* ✓  
Completion of fitting sea connections *Leith Report* Stern tube *Leith Report* Screw shaft and propeller *27-11-22*  
Main boiler safety valves adjusted *27-12-22* ✓ Thickness of adjusting washers *P.P. 13/32: 5 11/32. S.P. 7/16: 5 13/32.*  
Material of Crank shaft *S* Identification Mark on Do. *J.H.M. 22-8-21* Material of Thrust shaft *S* Identification Mark on Do. *J.H.M. 22-8-21*  
Material of Tunnel shafts *S* Identification Marks on Do. *J.H.M. 22-8-21* Material of Screw shafts *S* Identification Marks on Do. *J.H.M. 22-8-21*  
Material of Steam Pipes *Seamless steel* Test pressure *540 lbs.* ✓

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  If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*These Engines have been built under special survey and in accordance with the Rules. The materials and workmanship are sound & good. The Engines and Boilers have been fitted on board in an efficient manner tried under steam and found satisfactory and are eligible in our opinion to be classed with record of L.M.C 1-23.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1.23. C.L.

*A.H.D.*  
*15/1/23.*

*J. S. Wilson* for self and *J. H. Mackintosh*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 5 : 0 :  
Special ... £ 46 : 0 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for. 8. 1. 19. 23  
When received. 11. 1. 19. 23

Committee's Minute. TUE. 30 JAN. 1923  
Assigned *+ L.M.C. 1.23*  
*C.L.*

*bundee*

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



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