

# REPORT ON MACHINERY.

Received at London Office

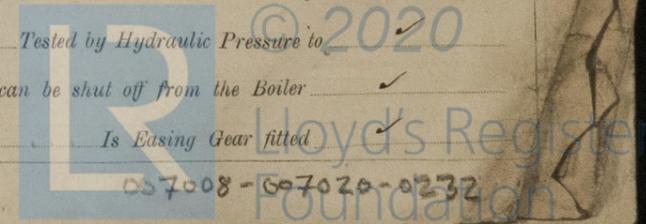
TUE. 5 MAY. 1924

Date of writing Report 5<sup>th</sup> May 1924 When handed in at Local Office 5<sup>th</sup> May 1924 Port of Leith  
 No. in Survey held at Leith Date, First Survey 18<sup>th</sup> Dec 1923 Last Survey 29<sup>th</sup> April 1924  
 Reg. Book. on the Steel Ferry "Koondooloo" (Number of Visits 30)  
 Master                      Built at Leith By whom built Hawthorn & Co Ltd (No 187) When built 1924  
 Engines made at Leith By whom made Hawthorn & Co Ltd (No 187) when made 1924  
 Boilers made at Leith By whom made Hawthorn & Co Ltd (No 187) when made 1924  
 Registered Horse Power 114 Owners Sydney Ferris Ltd Port belonging to Sydney L.S. & Co  
 Nom. Horse Power as per Section 28 114 7/8 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 16 1/2, 26, 43 Length of Stroke 24 Revs. per minute 155 Dia. of Screw shaft 8.13 as per rule approved 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 38  
 Dia. of Tunnel shaft 8 as per rule approved Dia. of Crank shaft journals 8 as per rule approved Dia. of Crank pin 9 Size of Crank webs 7 1/2 x 17 Dia. of thrust shaft under collars 8 Dia. of screw 8.0 Pitch of Screw 10.0 No. of Blades 4 State whether moceable no Total surface 27 1/4  
 No. of Feed pumps 2 Diameter of ditto 8 1/2 x 6 Stroke 18 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 1 Diameter of ditto 3 1/2 Stroke 12 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 1 Sizes of Pumps 7 1/2 x 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room & Ber Room 4 - 2 In Holds, &c. Ford 2 - 2 : Aft 2 - 2  
 No. of Bilge Injections 1 sizes 6 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes - 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 yes  
 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 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 Wm Beardmore: The Steel Co of Scotland  
 Total Heating Surface of Boilers 2935 Is Forced Draft fitted no No. and Description of Boilers 2 Navy Type  
 Working Pressure 180 lbs Tested by hydraulic pressure to 320 lbs Date of test 3.4.24 No. of Certificate 780  
 Can each boiler be worked separately yes Area of fire grate in each boiler 47.6 No. and Description of Safety Valves to each boiler double spring loaded Area of each valve 4.9 Pressure to which they are adjusted 180 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork abt 12 dia. of boilers 9.7 Length 19.9 Material of shell plates steel  
 Thickness 3/32 Range of tensile strength 28/32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 55/64 Pitch of rivets 6 1/8 Lap of plates or width of butt straps 12 15/16  
 Per centages of strength of longitudinal joint: rivets 86.3 Working pressure of shell by rules 190 Size of manhole in shell 16" x 12"  
 Size of compensating ring 34 3/4 x 26 1/4 x 1 No. and Description of Furnaces in each boiler 2 Dighton Material steel Outside diameter 45 1/8  
 Length of plain part 19 Thickness of plates 32 Description of longitudinal joint weld No. of strengthening rings 15  
 Working pressure of furnace by the rules 191 Combustion chamber plates: Material steel Thickness: Sides 21/32 Back 27/32 Top 21/32 Bottom 15/16  
 Pitch of stays to ditto: Sides 9 1/4 x 8 3/4 Back 13 1/8 x 9 1/4 Top 7 1/4 x 9 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185  
 Material of stays steel Area at smallest part 1.73 Area supported by each stay 80.9 Working pressure by rules 189 End plates in steam space: Material steel Thickness 15 15/16 Pitch of stays 17 x 24 How are stays secured D. Nuts Working pressure by rules 185 Material of stays steel  
 Area at smallest part 6.66 Area supported by each stay 408 Working pressure by rules 180 Material of Front plates at bottom steel  
 Thickness 15 15/16 Material of Lower back plate steel Thickness 15 15/16 Greatest pitch of stays 24 Working pressure of plate by rules 180  
 Diameter of tubes 3 1/2 Pitch of tubes 4 5/8 x 4 5/8 Material of tube plates steel Thickness: Front 27/32 Back 15/16 Mean pitch of stays 11 1/16  
 Pitch across wide water spaces 13 Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 6 x 2 @ 16 Length as per rule 48 5/16 Distance apart 7 1/4 Number and pitch of stays in each 1 - 2 5/8 x 12 (hanging)  
 Working pressure by rules 180 Steam dome: description of joint to shell yes % of strength of joint yes  
 Diameter 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 Crown plates yes Thickness yes How stayed yes

**SUPERHEATER.** Type                      Date of Approval of Plan                      Tested by Hydraulic Pressure to 2020  
 Date of Test                      Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes  
 Diameter of Safety Valve                      Pressure to which each is adjusted                      Is Easing Gear fitted                     



IS A DONKEY BOILER FITTED?

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 of coupling bolts: 1 set of feed & bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes: air pump rod & bucket: propeller shaft: propeller: Complete set of piston rings for each cylinder: 12 boiler tubes: 2 safety valve springs: set of valve springs & rings for Wain's Pump: Centrifugal pump impeller & shaft, piston rod & valve spindle

The foregoing is a correct description,

HAWTHORNS & CO. LIMITED

*A. Sutherland* Manufacturer.

Dates of Survey while building: During progress of work in shops - - - 1925 Dec 18. 26. Jan 8. 24. Feb 1. 8. 11. 19. Mar 3. 10. 12. 18. 20. 21. 22. During erection on board vessel - - - March 24. 26. April 1. 3. 8. 9. 11. 12. 17. 19. 21. 22. 24. 25. 29. Total No. of visits 30.

Is the approved plan of main boiler forwarded herewith

" " " donkey " "

Dates of Examination of principal parts - Cylinders 26.3.24 Slides 4.3.24 Covers 26.3.24 Pistons 4.3.24 Rods 4.3.24

Connecting rods 4.3.24 Crank shaft 26.3.24 Thrust shaft 19.2.24 Tunnel shafts 11.2.24 Screw shaft 1.2.24 Propeller 12.3.24

Stern tube 12.3.24 Steam pipes tested 17.4.24 Engine and boiler seatings 22.3.24 Engines holding down bolts 22.4.24

Completion of pumping arrangements 22.4.24 Boilers fixed 19.4.24 Engines tried under steam 22.4.24

Completion of fitting sea connections 21.3.24 Stern tube 21.3.24 Screw shaft and propeller 22.3.24

Main boiler safety valves adjusted 19.4.24 Thickness of adjusting washers Port Blr { 0 7/16" Start Blr { 0 7/16"

Material of Crank shaft steel Identification Mark on Do. 187 Material of Thrust shaft steel Identification Mark on Do. 778. 77.

Material of Tunnel shafts steel Identification Marks on Do. 60. 61. 63. 64 Material of Screw shafts steel Identification Marks on Do. 62. 66.

Material of Steam Pipes Copper 781 Test pressure 360 lbs per sq"

Is an installation fitted for burning oil fuel  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.)

The machinery of this vessel has been built under special survey the material & workmanship being good and proved satisfactory on steam trial

It is submitted that this vessel is eligible for a record of + L.M.C. 4.24 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 4.24. CL

*A.T.* 6/5/24

A. T. Thomas Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 3 : - : When applied for, 5.15.1924  
Special ... £ 36 : 15 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :

Committee's Minute FRI. MAY. 9 1924  
Assigned + L.M.C. 4.24  
C.L.

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

CERTIFICATE WRITTEN

