

Rpt. 4. **REPORT ON MACHINERY.** No. 8495

Received at London Office

24 SEP 1924

Date of writing Report 17<sup>th</sup> Sept 1924 When handed in at Local Office 23<sup>rd</sup> Sept 1924 Port of Bundee  
 No. in Survey held at Bundee Date, First Survey 9<sup>th</sup> Jan. 1924 Last Survey 17<sup>th</sup> Sept 1924  
 Reg. Book. on the Paddle Ferry Steamer "WILLIAM HIGH" (Number of Visits 69)  
 Master Bundee Built at Bundee By whom built Caledon S.B. & C. Sh. Co. Sh. No 292 Tons } Gross }  
 Engines made at Bundee By whom made Caledon S.B. & C. Sh. Co. Sh. No 492 when made 1924 } Net }  
 Boilers made at Bundee By whom made Caledon S.B. & C. Sh. Co. Sh. No 492 when made 1924 }  
 Registered Horse Power 114 Owners Bundee Harbour Commissioners Port belonging to Bundee  
 Nom. Horse Power as per Section 28 114 Is Refrigerating Machinery fitted for cargo purposes  Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Twin Diagonal Compound Surface Cond. No. of Cylinders 4 2 each No. of Cranks 4.2  
 Dia. of Cylinders 18" & 34" Length of Stroke 42" Revs. per minute 39 Dia. of Screw shaft 8 5/8" Material of screw shaft as per rule  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube  Is the after end of the liner made water tight in the propeller boss   
 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 16 1/2 x 5 1/2"  
 Dia. of Tunnel shaft 8 1/4" Dia. of Crank shaft journals 8 5/8" Dia. of Crank pin 7" Size of Crank webs 13 1/2 x 4 1/2" Dia. of thrust shaft under collars   
 Dia. of screw 12 1/2" Pitch of Screw  No. of FLOATS 7 State whether moveable Yes Total surface 118 sq ft  
 No. of Feed pumps 1 Diameter of ditto 3 1/2" Stroke 18" Can one be overhauled while the other is at work   
 No. of Bilge pumps 1 Diameter of ditto 3 1/2" Stroke 18" Can one be overhauled while the other is at work   
 No. of Donkey Engines Two Sizes of Pumps 5 1/2" x 3 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 @ 2" In Holds, &c. 2 @ 2" forward & 2 @ 2" aft

No. of Bilge Injections 2 sizes 3 1/2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 2 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 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   
 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 No tunnel Is it fitted with a watertight door  worked from

**BOILERS, &c.**—(Letter for record 17) Manufacturers of Steel J. Colville & Sons, Lanarkshire Steel Co. Scottish Iron & Steel Co.  
 Total Heating Surface of Boilers 1456 sq ft Is Forced Draft fitted No No. and Description of Boilers 1 Single ended Multitubular  
 Working Pressure 120 lbs Tested by hydraulic pressure to 230 lbs Date of test 6-5-24 No. of Certificate 1004  
 Can each boiler be worked separately  Area of fire grate in each boiler 41 sq ft No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 7.06 sq in Pressure to which they are adjusted 125 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 13'-6" Length 10'-0" Material of shell plates S  
 Thickness 25/32" Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D.R.  
 long. seams D. Straps T.R. Diameter of rivet holes in long. seams 7/8" Pitch of rivets 6 1/4" Lap of plates or width of butt straps 13 1/8"  
 Per centages of strength of longitudinal joint 86.3 Working pressure of shell by rules 124 lbs Size of manhole in shell 16 x 12"  
 Size of compensating ring 35 x 31 x 25/32 No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 42 1/2"  
 Length of plain part 78" Thickness of plates 5/8" Description of longitudinal joint weld No. of strengthening rings   
 Working pressure of furnace by the rules 121 Combustion chamber plates: Material S Thickness: Sides 1/2" Back 1/2" Top 9/16" Bottom 1/2"  
 Pitch of stays to ditto: Sides 8 x 7 1/2" Back 8 1/2 x 7 1/2" Top 9 1/2 x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 123  
 Material of stays Iron Area at smallest part 1.19 sq in Area supported by each stay 80.75 sq in Working pressure by rules 124 End plates in steam space: Material S Thickness 1" Pitch of stays 19 1/2 x 19" How are stays secured S.N. & W. Working pressure by rules 124 Material of stays S  
 Area at smallest part 3.67 sq in Area supported by each stay 370.05 sq in Working pressure by rules 129 Material of Front plates at bottom S  
 Thickness 1 1/16" Material of Lower back plate S Thickness 5/8" Greatest pitch of stays 13 1/2 x 8 1/2" Working pressure of plate by rules 122  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/16" x 4 1/16" Material of tube plates S Thickness: Front 1 1/16" Back 1 1/16" Mean pitch of stays 11 3/4"  
 Pitch across wide water spaces 14 1/2" + 1 1/16" doubling Working pressures by rules 122 Girders to Chamber tops: Material S Depth and thickness of girder at centre 7 1/2" x 1 1/8" Length as per rule 28 1/2" Distance apart 9 1/2" Number and pitch of stays in each 2 @ 8 1/2"  
 Working pressure by rules 121 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? *No*

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

SPARE GEAR. State the articles supplied: - *Two Crank pin and Bolts nuts, 2 Crosshead bolts nuts, Two main bearing bolts nuts, 1 set each of Lead & Bilge Pump valves, assorted iron, bolts & nuts.*

The foregoing is a correct description,

THE CALEDON SHIPBUILDING & ENGINEERING CO. LD

*D. D. Bruce*

SECRETARY Manufacturer.

Dates of Survey while building: During progress of work in shops - - *1924* JAN. 9. 14. 18. 22. 28. 29. FEB. 4. 6. 8. 12. 13. 18. 26. MAR. 4. 5. 10. 13. 14. 14. 21. 25. 26. 31. APR. 4. 7. 8. 10. 11. 18. 22. 24. 25. 28. 29. 30. MAY 5. 6. 7. 11. 13. 14. 19. 22. 23. 26. 27. 30. JUNE 2. 3. 9. During erection on board vessel - - - *1924* JUNE 10. 14. 24. JULY 15. 14. 18. 22. 24. AUG. 6. 11. 12. 19. 21. 25. 27. SEPT. 10. 11. 14. Total No. of visits *69.*

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

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *18-4-24* Slides *7-5-24* Covers *18-4-24* Pistons *7-5-24* Rods *5-5-24*

Connecting rods *16-4-24* Crank shaft *16-4-24* Thrust shaft — Tunnel shafts — PADDLE Screw shaft *9-6-24* PADDLES Propeller *7-5-24*

OUTER BEARINGS Stern tube *9-6-24* Steam pipes tested *18-7-24* & *21-8-24* Engine and boiler seatings *2-6-24* Engines holding down bolts *11-8-24*

Completion of pumping arrangements *11-9-24* Boilers fixed *11-8-24* Engines tried under steam *11-9-24*

Completion of fitting sea connections *17-6-24* OUTER BEARINGS Stern tube *17-6-24* PADDLE SHAFTS & PADDLES Screw shaft and propeller *24-6-24*

Main boiler safety valves adjusted *27-8-24* Thickness of adjusting washers P *13/32"* S *13/32"*

Material of Crank shaft *LLOYDS* Identification Mark on Do. *N<sup>o</sup> 492 JES.* Material of Thrust shaft — Identification Mark on Do. —

Material of Tunnel shafts — Identification Marks on Do. — Material of PADDLE Screw shafts *LLOYDS* Identification Marks on Do. *N<sup>o</sup> 492 JES.*

Material of Steam Pipes *Seamless copper* Test pressure *300 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 *ENGINES - SIMILAR* duplicate of a previous case *Yes* If so, state name of vessel *"Newport" Dundee Report No 7550*

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

*The Engines and Boilers of this vessel have been built under Special Survey and in accordance with the Rules & approved Plan.*

*The materials and workmanship are sound & good.*

*They have been fitted on board in a satisfactory manner, tried under working conditions and found efficient and are eligible in my opinion to be classed with record of  $\Delta$  L.M.C. 9-24.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 9. 24.

C.D. 4 Cy 18" & 34" - 42" 114 NHP.

1SB. 3pf. GS 41. HS 1456. (T)

12075.

The amount of Entry Fee ... £ 3 : 0 : When applied for,

Special ... £ 28 : 10 : 23/9/1924

Donkey Boiler Fee ... £ : : When received,

Travelling Expenses (if any) £ : : 29/9/24

Committee's Minute

FRI. 26 SEP 1924

Assigned

CERTIFICATE WRITTEN

+ L.M.C. 9.24.

Engineer Surveyor to Lloyd's Register of Shipping.



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