

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 17 DEC 1927

Date of writing Report 30<sup>th</sup> Nov 1927 When handed in at Local Office 16. 12. 1927 Port of *West Hartlepool*

No. in Survey held at *Hartlepool* Date, First Survey *23rd May* Last Survey *14<sup>th</sup> Dec.* 1927  
Reg. Book. on the *Twin S.S. No 497* (Number of Visits 95)

Built at *Levis. Quebec.* By whom built *The Davie S B & Repg. Co. Ltd.* Yard No. *497* When built *1927*

Engines made at *Hartlepool* By whom made *Richardsons Westgarth* Engine No. *2669* when made *1927*

Boilers made at *ditto* By whom made *& Co. Ltd.* Boiler No. *2669* when made *1927*

Registered Horse Power Owners Port belonging to

Nom. Horse Power as per Rule *790* Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Track for which Vessel is intended

ENGINES, &c.—Description of Engines *Twin Screw four cylinder triple expansion* Revs. per minute *125*

Dia. of Cylinders *24"-38"-44"-44"* Length of Stroke *36* No. of Cylinders *8* No. of Cranks *8*

Crank shaft, dia. of journals as per Rule *11.77* as fitted *12"* Crank webs Mid. length breadth *2 1/8"* Mid. length thickness *7 1/2"* Thickness parallel to axis *7 1/2"* Thickness around eye-hole *6 7/8"*

Intermediate Shafts, diameter as per Rule *11.21"* as fitted *11 3/8"* Thrust shaft, diameter at collars as per Rule *11.77"* as fitted *12"*

Tube Shafts, diameter as per Rule as fitted *✓* Screw Shaft, diameter as per Rule *12.65"* as fitted *12 3/4"* Is the tube screw shaft fitted with a continuous liner *yes* to outer bracket no.

Bronze Liners, thickness in way of bushes as per Rule *.685* as fitted *3/4"* Thickness between bushes as per Rule *3/4"* as fitted *3/4"* Is the after end of the liner made watertight in the propeller boss *✓*

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *✓*

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 *fitting*

If two liners are fitted, is the shaft lapped or protected between the liners *✓* Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft *no*

Propeller, dia. *12'-0"* Pitch *15'-6"* No. of Blades *4* Material *Bronze* whether Movable *yes* Total Developed Surface *51* sq. feet

Feed Pumps worked from the Main Engines, No. *none* Diameter Stroke Can one be overhauled while the other is at work

Bilge Pumps worked from the Main Engines, No. *none* Diameter Stroke Can one be overhauled while the other is at work

Feed Pumps { No. and size *2 main 13 1/2" x 10 x 24* How driven *Steam* Pumps connected to the Main Bilge Line { No. and size *1 Bilge 9" x 10" x 10" dup.* How driven *Steam*

Ballast Pumps, No. and size *1. 10" x 14" x 15" duplex* Lubricating Oil Pumps, including Spare Pump, No. and size *✓*

Are two independent means arranged for circulating water through the Oil Cooler *✓* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room *4 of 3" dia. (fittings supplied)*

In Holds, &c. *✓*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *2 of 8"* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 of 4 1/2" (fitting supplied)* Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes *✓*

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *✓*

Are all Sea Connections fitted direct on the skin of the ship *✓* Are they fitted with Valves or Cocks *✓*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *✓* Are the Overboard Discharges above or below the deep water line *✓*

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel *✓* Are the Blow Off Cocks fitted with a spigot and brass covering plate *✓*

What Pipes pass through the bunkers *✓* How are they protected *✓*

What pipes pass through the deep tanks *✓* Have they been tested as per Rule *✓*

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *✓*

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another *✓* Is the Shaft Tunnel watertight *✓* Is it fitted with a watertight door *✓* worked from *✓*

MAIN BOILERS, &c.—(Letter for record *S.*) Total Heating Surface of Boilers *12656 square feet*

Is Forced Draft fitted *yes* No. and Description of Boilers *6 single ended* Working Pressure *190 lbs*

IS A REPORT ON MAIN BOILERS NOW FORWARDED? *yes*

IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *see Middlebro report.*

PLANS. Are approved plans forwarded herewith for Shafting *✓* Main Boilers *yes* Auxiliary Boilers *✓* Donkey Boilers *✓*

Superheaters *✓* General Pumping Arrangements *✓* Oil fuel Burning Piping Arrangements *✓*

SPARE GEAR. State the articles supplied:— *2 Connec. rod top end bolts & nuts of each size. 2 bottom end ditto of each size 4 main bearing ditto. 2 sets of coupling bolts & nuts. 1 set of piston rings & springs for each size. 1 propeller shaft & nut. 8 cast iron propeller blades. 3 bolts for propeller shaft muff coupling. 3 main feed check valves. 3 aux. feed check valves. For air pumps, steam valve chest, piston rings, rump bucket rings & group valves for one pump. For circulating pumps, impeller & shaft, piston, rings & rod for one engine. For main feed, general service, ballast, bilge, sanitary, hot water & fresh water pumps packing rings for pistons & pump buckets for each size & one set of valves, seats & springs. Also various spare parts for air pumps, circ pumps & fan engines. Assorted bolts, nuts and iron.*

The foregoing is a correct description,  
FOR RICHARDSONS WESTGARTH & CO. LIMITED.

*W. J. Guthrie* GENERAL MANAGER.  
(HARTLEPOOL WORKS.)

Manufacturer.



PILLA  
 " "  
 " "  
 " "  
 Centr  
 Stiff  
 Plat  
 STRING  
 Upper  
 Strin  
 " "  
 " "  
 Thic  
 in  
 Thic  
 in  
 Thic  
 If SI  
 Secon  
 Strin  
 STR  
 FLAT PLA  
 " "  
 BOTTOM P  
 of Strak  
 BILGE PLA  
 Strakes  
 SIDE PLA  
 Strakes  
 UPPER DI  
 strake in  
 UPPER DI  
 strake in  
 STRAKE BI  
 strake in  
 STRAKE BE  
 strake in  
 POOP SIDE  
 BRIDGE SID  
 FOREC'TLE  
 " "  
 " "  
 " "  
 " "  
 COLLISIO  
 AFTER PI  
 " "  
 " "  
 STEEL.

1927. May. 23. 28. 31. June 14. 22. 27. 28. 29. 30. July 4. 6. 7. 8. 11. 12. 13. 14. 15. 18. 19. 20. 26. 28. Aug. 8. 9. 10. 11. 12. 15. 17. 18. 19. 22. 24. 25. 26. 29. 30.  
 During progress of work in shops - - -  
 Sept. 1. 2. 5. 6. 7. 8. 9. 12. 13. 14. 15. 16. 19. 21. 22. 23. 26. 27. 28. 29. 30. Oct. 3. 4. 5. 6. 7. 10. 11. 12. 13. 14. 17. 18. 19. 20. 21. 24. 25. 26. 27. 28. 31. Nov. 1. 3. 9. 11. 14. 15.  
 21. 22. 23. 24. 28. Dec. 14.  
 Dates of Survey while building  
 During erection on board vessel - - -  
 Total No. of visits 95.

Dates of Examination of principal parts—Cylinders 28.6.27-17.10.27 Slides 28.6.27-16.9.27. Covers 9.8.27-16.9.27  
 Pistons 28.6.27-7.10.27 Piston Rods 24.8.27-29.9.27 Connecting rods 28.6.27-11.10.27  
 Crank shaft 19.7.27-3.10.27 Thrust shaft 22.9.27-25.10.27 Intermediate shafts 30.9.27-24.11.27  
 Tube shaft ✓ Screw shaft 6.10.27-24.10.27 Propeller 5.9.27-12.10.27  
 Stern tube 28.9.27-19.10.27 Engine and boiler seatings Engines holding down bolts  
 Completion of fitting sea connections  
 Completion of pumping arrangements Boilers fixed Engines tried under steam  
 Main boiler safety valves adjusted Thickness of adjusting washers  
 Crank shaft material Ingot steel Identification Mark 6388.H. Thrust shaft material Ingot steel Identification Mark 54487  
 Intermediate shafts, material Ingot steel Identification Marks 5464D 5448D Tube shaft, material at Glasgow Identification Mark ✓  
 Screw shaft, material Ingot steel Identification Mark 5464D Steam Pipes, material Steel Test pressure 570 lbs. Date of Test  
 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 the Rules for carrying and burning oil fuel been complied with  
 Is this machinery duplicate of a previous case yes ✓ If so, state name of vessel Davie S B Co. S S No 496.

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 These engines and boilers have been built under Special Survey. The materials and workmanship are good. The cylinders have been tested by hydraulic pressure, H.P. to 285 lbs., M.P. to 60 lbs., L.P. to 30 lbs and condensers to 18 lbs. The boiler mountings, and the main steam isolating and bulkhead valves, junction pieces and expansion joints, and the valves on the main engines tested to 400 lbs for cast iron and brass and 570 lbs for cast steel. The feed heater tubes and headers and feed delivery fittings tested to 460 lbs and the body of the feed heater to 50 lbs. For the main steam pipes see Glasgow report accompanying.  
 The machinery has been despatched to Quebec for fitting on board.

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

The amount of Entry Fee ... £	6 : 0 :	When applied for,
<sup>1/2</sup> due <sup>Special</sup> <del>Hunterpool</del>	91 : 12 :	16.12.1927
<sup>1/2</sup> due Montreal	22 : 18 :	
Donkey Boiler Fee ... £	:	When received,
Travelling Expenses (if any) £	:	29.12.27

R.D. Shilston A. Daintith  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 14 AUG 1928  
 Assigned See Mtl. 2E. 2907

