

## REPORT ON OIL ENGINE MACHINERY.

No. 12. 276  
DEC 28 1938

Date of writing Report

19

When handed in at Local Office

24. 12.

19

Port of Belfast

Received at London Office

No. in Survey held at  
Reg. Book.

Belfast

Date, First Survey 15. Apr. 1937 Last Survey 23. 12. 38 19

Number of Visits 233

73547 on the <sup>Single</sup>  
<sup>Twin</sup>  
<sup>Triple</sup>  
<sup>Quad</sup> Screw vessel

Tw. Ser. DUBBAN CASTLE

Tons { Gross  
Net

Built at Belfast

By whom built

Harland &amp; Wolff Ltd

Yard No. 987 When built 1938

Engines made at Belfast

By whom made

Harland &amp; Wolff Ltd

Engine No. 987 When made 1938

Boilers made at Belfast

By whom made

Harland &amp; Wolff Ltd

Boiler No. 987 When made 1938

Indicated Horse Power 16000

Owners Union Castle Mail Steamship Co

Port belonging to London

Nom. Horse Power as per Rule 3284

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

Trade for which vessel is intended

Ocean going

**MAIN ENGINES, &c.**—Type of Engines *Harland B & W airless injection 2 or 4 stroke cycle 2* *Single or double acting* *Yes*  
 Maximum pressure in cylinders *49 kg/cm<sup>2</sup>* Diameter of cylinders *24 1/2 620 mm* Length of stroke *1400 mm* No. of cylinders *16* No. of cranks *16*  
 Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge *1164 mm* Is there a bearing between each crank *Yes*  
 Revolutions per minute *104* Flywheel dia. *2483 mm* Weight *2500 kg* Means of ignition *Compression* Kind of fuel used *Diesel Oil*  
 Crank Shaft, dia. of journals *as per Rule* *as fitted* *500 mm* Crank pin dia. *500 mm* Crank Webs Mid. length breadth *960 mm* Thickness parallel to axis *260 mm*  
 Flywheel Shaft, diameter *as per Rule* *as fitted* *530 mm* Intermediate Shafts, diameter *as per Rule* *as fitted* *18"* Thrust Shaft, diameter at collars *as per Rule* *as fitted* *490 mm*  
 Tube Shaft, diameter *as per Rule* *as fitted* *19 1/2"* Is the *tube* *screw* shaft fitted with a continuous liner *Yes*  
 Bronze Liners, thickness in way of bushes *as per Rule* *as fitted* *1"* Thickness between bushes *as per rule* *as fitted* *2 1/2"* Is the after end of the liner made watertight in the  
 propeller boss *Yes* If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *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* Is an approved Oil Gland or other appliance fitted at the after end of the tube  
 Length of Bearing in Stern Bush next to and supporting propeller *7'-0"*  
 Propeller, dia. *19'-0"* Pitch *21'-3"* No. of blades *3* Material *M.B.* whether Moveable *Solid* Total Developed Surface *97* sq. feet  
 Method of reversing Engines *Over Brake cylinder* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Means of lubrication  
 Forced Thickness of cylinder liners *42 mm* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with  
 non-conducting material *lagged* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *Yes*  
 Cooling Water Pumps, No. *4-400 l/min/hr 2 working 2 spare* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes*  
 Bilge Pumps worked from the Main Engines, No. *4* Diameter *135 mm* Stroke *135 mm* Can one be overhauled while the other is at work *Yes*  
 Pumps connected to the Main Bilge Line { No. and Size *4-135 l/min/hr* How driven *Electric motor*

Ballast Pumps, No. and size *2-135 l/min/hr* Lubricating Oil Pumps, including Spare Pump, No. and size *4-320 l/min/hr 2 working 2 spare*  
 Are two independent means arranged for circulating water through the Oil Cooler *Yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 Pumps, No. and size:—In Machinery Spaces *2-3 1/2" 1-3"* In Forward Tunnel *2-3 1/2" 1-3"* In Aft Tunnel *2-3 1/2" 1-3"* In Holds, &c. *4-3" 1-3"* Tunnel well *1-3 1/2"* N<sup>o</sup>. 2-3 1/2" N<sup>o</sup>. 2-3 1/2" N<sup>o</sup>. 3-3 1/2" N<sup>o</sup>. 1-3 1/2" N<sup>o</sup>. 2-3 1/2" Chain locker *1-2 1/2"*  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *Engine room 3, Aft E.R. 2, Tunnel 1, all 6" bore*  
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* Are the Bilge Suctions in the Machinery Spaces  
 led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *Yes*  
 Are all Sea Connections fitted direct on the skin of the ship *Yes* Are they fitted with Valves or Cocks *Yes*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates *Yes* Are the Overboard Discharges 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 pass through the bunkers *None* How are they protected *Yes*  
 What pipes pass through the deep tanks *None* Have they been tested as per Rule *Yes*  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*  
 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 *Yes* Is the Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *upper deck*  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *Yes*  
 Main Air Compressors, No. *2* No. of stages *2* Diameters *240 mm, 210 mm* Stroke *160 mm* Driven by *El motor*  
 Auxiliary Air Compressors, No. *1* No. of stages *1* Diameters *160 mm, 134 mm* Stroke *80 mm* Driven by *—*  
 Small Auxiliary Air Compressors, No. *1* No. of stages *2* Diameters *160 mm, 134 mm* Stroke *80 mm* Driven by *Steam engine*  
 Scavenging Air Pumps, No. *4* *387.5 m<sup>3</sup>/min in capacity at 385 rpm. at 1.24 kg/cm<sup>2</sup> abs* Driven by *Main engines*  
 Auxiliary Engines crank shafts, diameter *as per Rule* *as fitted* *See report form 4 C*

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*Can the internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their inner surfaces *Manhole*Is there a drain arrangement fitted at the lowest part of each receiver *Yes*High Pressure Air Receivers, No. *3* Cubic capacity of each *800 cu ft* Internal diameter *2'-6 1/2"* thickness *1 1/2"*Material *S* Range of tensile strength *29/32 ton* Working pressure by Rules *350*Total cubic capacity *180 LITRES* Internal diameter *1'-6"* thickness *3/8"*Range of tensile strength *25/32 ton* Working pressure by Rules *372*



IS A DONKEY BOILER FITTED? *Yes 30/6*

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

PLANS. Are approved plans forwarded herewith for Shafting *1-6-37. 1.4.37.* (If not, state date of approval)

Receivers *13-10-38*

Separate Tanks *14-7-38 & 8-7-38*

Donkey Boilers *31-8-38, 21-10-38*

General Pumping Arrangements *16-5-38*

Oil Fuel Burning Arrangements *23-12-38*

SPARE GEAR

*See attached sheets*

The foregoing is a correct description,  
For HARLAND AND WOLFE, LIMITED.

*A. G. Marshall* Manufacturer.

*HB*

1937 *apl 15 Oct. 11. 15. 25. 28 Nov. 1. 4. 5. 9. 25. 27 Dec. 6. 8. 14. 21. 22. 23. 24 Jan. 3. 4. 5. 6. 8. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Feb. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Mar. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Apr. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 May 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 June 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 July 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Aug 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Sept 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Oct 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Nov 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31 Dec 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31*

Dates of Survey while building

Dates of Examination of principal parts—Cylinders *3-8-38* Covers *5-5-38* Pistons *10-5-38* Rods *5-3-38* Connecting rods *27-6-38*

Crank shaft *P 4-5-38* Flywheel shaft *✓* Thrust shaft *S 26-5-38* Intermediate shafts *35-38 to 2-6-38* Tube shaft *✓*

Screw shaft *S 2-5-38* Propeller *✓* Stern tube *S 13-4-38* Engine seatings *17-5-38* Engines holding down bolts *S 25-8-38*

Completion of fitting sea connections *27-5-38* Completion of pumping arrangements *24-11-38* Engines tried under working conditions *22-25 Nov 38*

Crank shaft, Material *S* Identification Mark *220405 271* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *S* Identification Mark *220405 271* Intermediate shafts, Material *S* Identification Marks *220405 321*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S 2-5-38* Identification Mark *220405 271*

Is the flash point of the oil to be used over 150° F. *Yes*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Yes* If so, have the requirements 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 machinery of this vessel has been constructed under special survey. The workmanship & materials are good. The main engines & auxiliaries have been efficiently installed & tried out under working conditions. In our opinion the vessel is eligible for notation in the Society's Register Book*  
*+ LMC 12-38 C.L. 3 DBs 100 lbs. Oil Engines*

The amount of Entry Fee ... £ *6 : 0* : When applied for, *24.12.1938*  
Special ... £ *182 : 2* :  
Donkey Boiler Fee ... £ *15 : 0* : When received, *14/1*  
*Oil Receiver* ... £ *14 : 14* :  
Travelling Expenses (if any) £

Committee's Minute

Assigned

*+ LMC 12.38*

*3 DB*

*100 lb*

*Ch*

*Oil Eng*

*Charles J. Hunter. Rlee Amear.*  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation