

REPORT ON OIL ENGINE MACHINERY.

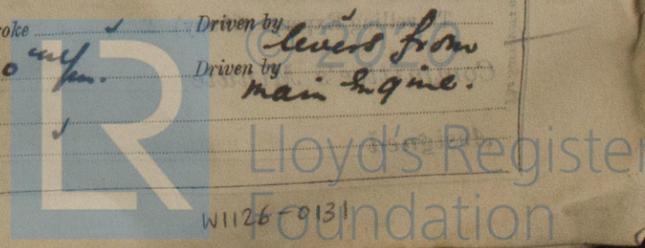
No. 32381

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Date of writing Report 10 When handed in at Local Office 13 May 1938 Port of Sunderland
No. in Survey held at Sunderland Date, First Survey Nov. 25 37 Last Survey May 12 1938
Reg. Book. Number of Visits 56

on the Single Screw vessel "CLIFTONHALL" Tons { Gross 5063
Net 2968
Built at Sunderland By whom built Wm. Bayford & Sons Ld. Yard No. 642 When built 1938
Engines made at Sunderland By whom made Wm. Bayford & Sons Ld. Engine No. 642 When made 1938
Donkey Boilers made at Stockton By whom made Stockton Chem. Engng & Ship Bldg. Co. Ld. Boiler No. 6281 When made 1938
Brake Horse Power 2100 Owners West Hartlepool Steam Nav. Co. Ld. Port belonging to W. Hartlepool.
Nom. Horse Power as per Rule 449. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
Trade for which vessel is intended 2276 8576

OIL ENGINES, &c. Type of Engines Opposed piston, airless injection 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 5 1/2 lbs/sq. in. Diameter of cylinders 560 mm. Length of stroke Upper 910 mm. Lower 1250 mm. No. of cylinders 3. No. of cranks 3 (3 strokes)
Mean Indicated Pressure 90 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 880 mm. Is there a bearing between each crank 3 shafts.
Revolutions per minute 110 Flywheel dia. FOR: 2240 mm. ACT: 2320 mm. Weight A. 4.21 tons. Means of ignition Compression Kind of fuel used between each crank
Crank Shaft, dia. of journals as per Rule 390 mm. as fitted 420 mm. Crank pin dia. 420 mm. Crank Webs Mid. length breadth 610 mm. Mid. length thickness 240 mm. Thickness parallel to axis 240 mm. Thickness around eye-hole 193 mm.
Flywheel Shaft, diameter as per Rule 390 mm. as fitted 420 mm. Intermediate Shafts, diameter as per Rule 293 mm. as fitted 343 mm. Thrust Shaft, diameter at collars as per Rule 390 mm. as fitted 420 mm.
Tube Shaft, diameter as per Rule as fitted. Screw Shaft, diameter as per Rule 326 mm. as fitted 362 mm. Is the screw shaft fitted with a continuous liner Yes.
Bronze Liners, thickness in way of bushes as per Rule 14 mm. as fitted 20 mm. Thickness between bushes as per Rule 12.45 mm. as fitted 14 mm. 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 one length.
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 shaft No. If so, state type Hand lever Length of Bearing in Stern Bush next to and supporting propeller 5'-4 3/4"
Propeller, dia. 15'-3" Pitch 11'-6" (variable) No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 86 sq. feet
Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes. Means of lubrication Hand forced. Thickness of cylinder liners 23 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes. 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. 1 Steam Driven 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. none Diameter Stroke Can one be overhauled while the other is at work Yes.
Pumps connected to the Main Bilge Line { No. and Size 1 @ 10" x 11" x 10 Duplex. 2 @ 5 1/2" x 6" x 15 Simply. How driven Steam
Is the cooling water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements Yes.
Ballast Pumps, No. and size 1 @ 10" x 11" x 10 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 main eq. driven 8 1/2" x 5 1/2" x 15 Simply. one 6" x 5 1/2" x 15 Simply.
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 4 @ 3" in E.R. 1 @ 3" in Tunnel well In Pump Room 1 @ 3 1/2" Deep Tank 3 1/2" φ 15.
In Holds, &c. No. 1. 3 1/2" φ 15 No. 2. 3 1/2" φ 15 No. 3. 3" φ 15 No. 4. 1 @ 3 1/2" Deep Tank 3 1/2" φ 15. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast pump) 1 @ 5"
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 Both
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plate Yes. Are the Overboard Discharges 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 pass through the bunkers none How are they protected Yes.
What pipes pass through the deep tanks Forward hold bilge suction 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 E.R. top
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Steam engine
Main Air Compressors, No. Two. No. of stages Three Diameters 10 1/2" - 8 1/2" - 2 1/2" Stroke 6" Driven by 11 1/2" x 6" Stroke
Auxiliary Air Compressors, No. None No. of stages None Diameters None Stroke None Driven by Levers from main engine.
Small Auxiliary Air Compressors, No. None No. of stages None Diameters None Stroke None Driven by Levers from main engine.
Scavenging Air Pumps, No. One. Diameter 1600 mm. Stroke 540 mm.
Auxiliary Engines crank shafts, diameter as per Rule as fitted. Position Yes.



AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes. (On discharge from Compressor)*
 Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*
High Pressure Air Receivers, No. *None* Cubic capacity of each *—* Internal diameter *—* thickness *—*
 Seamless, lap welded or riveted longitudinal joint *—* Material *—* Range of tensile strength *—* Working pressure by Rules *—* Actual *—*
Starting Air Receivers, No. *Two.* Total cubic capacity *220 Cuft.* Internal diameter *3'-6"* thickness *1"*
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *M. Steel* Range of tensile strength *28/32.* Working pressure by Rules *603* Actual *600.*

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes.*
 Is the donkey boiler intended to be used for domestic purposes only *no.*
PLANS. Are approved plans forwarded herewith for Shafting *Yes.* Receivers *Yes.* Separate Fuel Tanks *Yes.*
 Donkey Boilers *Yes.* General Pumping Arrangements *—* Pumping Arrangements in Machinery Space *Yes.*
 Oil Fuel Burning Arrangements *Yes.*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes (To latest requirements).*
 State the principal additional spare gear supplied *One Cast Iron Propeller, one Propeller Shaft, 2 Front & 2 Back Fuel Valves Complete, 8 fuel valve Spray plugs, 1 Cyl. relief valve, 1 Starting air valve Complete, 4 Scavenging Pump disc valves, 3 Fuel pump levers Complete with det. Chambers, 1 Suct. valve Chamber with Crosshead, bell crank levers & tappet, 1 main piston with rings, 5 main piston rings, 1 Centre Cam. rod Spherical bearing Complete, 1 ditto for Side Cam. rod, 2 Centre Cam. rod top end bearings Complete, 2 ditto for Side rods, 1 Set pads for Michell block, one roller chain for Camshaft drive, 1 Cyl. liner Complete.*

The foregoing is a correct description, *Limited.*

W. H. Kelly Director. Manufacturer.

Dates of Survey while building
 During progress of work in shops -- 1937. Nov. 25. 30. Dec. 1. 2. 6. 7. 8. 9. 10. 13. 14. 17. 1938. Jan. 10. 14. 28. 31. Feb. 1. 2. 4. 7. 9. 10. 14. 15. 17. 21.
 During erection on board vessel -- 22. 24. 25. 28. Mar. 1. 2. 3. 7. 8. 9. 10. 11. 14. 15. 16. 18. 25. 28. 31. Apr. 5. 6. 11. 13. 21. 25. 28. May 2. 12.
 Total No. of visits *56*
 Dates of Examination of principal parts—Cylinders *4/2/38* Covers *—* Pistons *3/1/38* Rods *3/1/38* Connecting rods *9/2/38.*
 Crank shaft *18/2/38 (See)* Flywheel shaft *as crank.* Thrust shaft *as crank.* Intermediate shafts *11/3/38.* Tube shaft *—*
 Screw shaft *16/3/38.* Propeller *(Ham. Gt.)* Stern tube *17/2/38.* Engine seatings *(Bank top)* Engines holding down bolts *21/4/38.*
 Completion of fitting sea connections *10/2/38.* Completion of pumping arrangements *8/5/38* Engines tried under working conditions *12/5/38.*
 Crank shaft, Material *Ingot Steel* Identification Mark *Nº 285 H.S.* Flywheel shaft, Material *as crank.* Identification Mark *as crank.*
 Thrust shaft, Material *as crank.* Identification Mark *as crank.* Intermediate shafts, Material *Ingot Steel* Identification Marks *3952, 3950, 3951*
 Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *Ingot Steel* Identification Mark *3954, 3951 W.N.F.*
 Is the flash point of the oil to be used over 150° F. *Yes.* No 3929 W.N.F. 16/3/38
 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 *no.* If so, have the requirements of the Rules been complied with *—*
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *not decided*
 Is this machinery duplicate of a previous case *Yes.* If so, state name of vessel *7/4 FOREST.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been built under Special Survey in accordance with the Rules of the Society & the Secretary's letter E 25/4/34. The materials & workmanship are good. The machinery has been securely fitted on board the vessel & tried under full working conditions at sea, including rule requirements for starting, with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (F.P. above 150° F) Section 2 of the Rules has been complied with & safety valves of boilers adjusted in accordance with Rule requirements. The machinery is eligible, in my opinion, to have notation of L.M.C. S. 38 oil Eng. T.S. (CL) 2 DB 120 H.P.

The amount of Entry Fee *£ 5* : : When applied for, *8 MAY 1938.*
 Special *£ 92* : *4* :
 Donkey Boiler Fee *£ 12* : *12* :
 Travelling Expenses (if any) *£* : : *21. 5. 19. 38*
 Committee's Minute *TUE 24 MAY 1938*
 Assigned *+ Lamb 5.38*
2 S.N. - 120H
Al. H. Ch

W. H. Kelly
 Engineer Surveyor to Lloyd's Register of Shipping.



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