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## REPORT ON OIL ENGINE MACHINERY.

No. 101646

Received at London Office

15 NOV 1943

Date of writing Report 11<sup>th</sup> Oct 1943 When handed in at Local Office 18/10/43 Port of

No. in Survey held at Newcastle &amp; Hebburn Reg. Book.

Date, First Survey 25-7-42 Last Survey 22<sup>nd</sup> Sept. 1943

Number of Visits 88

32096 on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel "RIPPIINGHAM GRANGE"Tons { Gross 10365  
Net 6329

Built at Newcastle (Hebburn) By whom built R &amp; W. Hawthorn, Leslie &amp; Co Ltd Yard No. 653 When built 1943-9

Engines made at Newcastle (St Peters) By whom made ditto Engine No. 3986 When made 1943-

Donkey Boilers made at Annan (Scotland) By whom made Cochran &amp; Co Annan, Ltd Boiler No. 15462 When made 1943.

Brake Horse Power 6700 Owners Houlder Line Ltd Port belonging to London

Nom. Horse Power as per Rule 1004. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended Ocean going 25 1/2" 55 1/8"

OIL ENGINES, &amp;c. Type of Engines Hawthorn-Workshop Supercharged 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 700 lbs Diameter of cylinders 650 m.m. Length of stroke 1400 m.m. No. of cylinders 16. No. of cranks 16.

Mean Indicated Pressure 135 lbs

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 844 m.m.

Revolutions per minute 124 Flywheel dia. 2260 m.m. Weight 6,000 Kg Means of ignition Heat of Compression Kind of fuel used Heavy oil fuel.

Crank Shaft, dia. of journals as per Rule 448 m.m. 456 as fitted 460. Crank pin dia. 460 m.m. Crank Webs Mid. length breadth 870 m.m. Mid. length thickness 267 m.m. Thickness parallel to axis 267 m.m. Thickness around eyehole 204 m.m.

Flywheel Shaft, diameter as per Rule 448 m.m. 456 as fitted 460 to 370 m.m. Intermediate Shafts, diameter as per Rule 325 = 12.8 316 = 12.44 as fitted 13. Thrust Shaft, diameter at collars as per Rule 341 m.m. = 13.43 as fitted 13.75 (370).

Tube Shaft, diameter as per Rule 460 to 370 m.m. as fitted 370. Screw Shaft, diameter as per Rule 345 = 13.59 as fitted 14 1/2. Is the screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule .73 as fitted 3/4. Thickness between bushes as per Rule .547 as fitted .5625. 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 In 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 Close fitted

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 Yes Length of Bearing in Stern Bush next to and supporting propeller 4'-10 1/2"

Propeller, dia. 13'-10" Pitch 14'-5" No. of blades 4 Material M. B. Steel whether Moveable Solid Total Developed Surface 60. sq. feet

Method of reversing Engines Air Servo motor Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication

forced Thickness of cylinder liners 55 m.m. 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. THREE OF 320 TONS/HR. FOR SEAWATER ALSO, FOR HARBOUR USE FOR AUX. OIL ENGS. AND FOR PRIMING F.W. SYSTEM, ONE DUPLEX 7 1/2 x 7 x 8 F.W. PUMP, 75 TONS/HR. 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. NIL. Diameter Stroke Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and Size Three, viz. one Ballast P. 250 tons/hr; one Bilge Pump and one G.S.P. each 150 tons/hr

How driven all Steam driven

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 One Duplex 250 tons/hr Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Three of 35 tons/hr each. Elec. motor driven

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 of 3" dia.; 2 of 3" from D. Btm Cofferdam; 1 of 1 1/2" at Fore end of Tunnel; 1 of 3" in Tunnel Well. In Holds, etc. (below No. 1 Hold) 1 of 3"; In Nos. 2, 3 &amp; 4 Holds, 2 of 3" each; In No. 5 Hold 1 of 3" at Centre aft; In No. 6 Hold, 2 of 3".

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 5 1/2" dia + 1 of 7" dia.

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 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 nil. How are they protected Yes

What pipes pass through the deep tanks nil. 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 No. worked from Yes

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. Nil. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. Two. No. of stages 2. Diameters 5 3/4 &amp; 12 1/2 Stroke 7 1/2 Driven by Steam Engo.

Small Auxiliary Air Compressors, No. Nil. No. of stages Diameters Stroke Driven by

What provision is made for first charging the Air Receivers? STEAM DRIVEN AIR COMPRESSORS. Driven by

Scavenging Air Pumps, No. NIL. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 9" dia journals 7" dia crank pins No. 4 sets of 300 K.W. Six Cyl Oil Engines

Have the Auxiliary Engines been constructed under Spec. Survey? Yes Position 2 on P. side, 2 on S. side in main Eng. Room.

SEE COPIES OF NOTTINGHAM L.R.F.S. RPTS C1269, 1336-7-8.

002790-002797-0060

CONTD OVER. (M)



Have they been made under Survey? Yes  
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 and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes  
High Pressure Air Receivers, No. Nil 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 800 cu. ft. for the two Internal diameter 4'-9 3/4" & 4'-10 7/8" thickness 27/32"  
T.R. D&G built ships Material M. Stl. Range of tensile strength 28 to 32 tons shell, 26 to 30 tons ends. Working pressure by Rules 352 lbs. Actual 350 lbs.

IS A DONKEY BOILER FITTED? Yes, THREE IN NUMBER. If so, is a report now forwarded? Yes  
Are the donkey boilers intended to be used for domestic purposes only no. Also for Steam Auxiliaries  
PLANS. Are approved plans forwarded herewith for Shafting Shafting 7/12/41 Receivers 20/7/42 Separate Fuel Tanks 21/12/42  
Shafts 66791 Donkey Boilers 66841 General Pumping Arrangements 13/5/42 Pumping Arrangements in Machinery Space 15/5/42  
66855 Oil Fuel Burning Arrangements 6/7/42

SPARE GEAR.  
Has the spare gear required by the Rules been supplied Yes  
State the principal additional spare gear supplied as per List attached

The foregoing is a correct description.  
R. E. W. HAWTHORN, LIMITED  
R. E. W. Hawthorn Manufacturer.  
DIRECTOR

1942  
Dates of Survey while building  
During progress of work in shops-- July 25, Aug. 17, Sept. 21, Oct. 5, 20, 26 Nov. 4, 6, 10, 12, 13, 16, 18, 20, 23, 25, Dec. 2, 4, 8, 12, 16, 21, 23, 24, 29, 30, 31. 1943 Jan. 4, 5, 6, 8, 12, 14, 19, 20  
During erection on board vessel-- July 26, 27, 28, 29, Aug. 3, 4, 7, 9, 10, 11, 12, 16, 18, 20, 23, 26, Aug. 27, Sept. 9, 22.  
Total No. of visits 88  
Dates of Examination of principal parts—Cylinders 20/10/42 Covers as abn. Pistons 2/12/42 P 23/12/42 Connecting rods 12-1-43  
Crank shafts P 22-1-43 Flywheel shafts 24-3-43 Thrust shafts 29-12-42 Intermediate shafts 20-1-43 Tube shaft ✓  
Screw shafts 14-1-42 S. Propellers 2 wks. 14-1-43 Stern tubes 3 wks. 25/2/43 Engine seatings ✓ D.B. Tank Top. Engines holding down bolts 28-4-43  
19-1-42 P. Completion of fitting sea connections 6-3-43 Completion of pumping arrangements 16-8-43 Engines tried under working conditions 10-8-43  
Crank shaft, Material OH. M. Stl. Identification Mark 11752 HAI. Flywheel shaft, Material OH. M. Stl. Identification Mark 11280 HAI. F2301  
Thrust shaft, Material ditto Identification Mark 11280 HAI. F2300 Intermediate shafts, Material ditto Identification Mark 11930 HAI. F5345, 5346, 5347  
Tube shaft, Material ✓ Identification Mark ✓ Screw shafts, Material OH. M. Stl. Identification Mark 11913 HAI. F5346, 5347  
Is the flash point of the oil to be used over 150° F. Yes. Two STARTING AIR RECEIVERS, MARKED: LLOYD'S TEST 575 LBS WP 350 LBS 3-3-43 TDS  
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes. Spare " F5343  
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 desired.  
Is this machinery duplicate of a previous case No If so, state name of vessel ✓ Beacon Grange

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this Vessel has been constructed and installed under Special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Machinery has been satisfactorily tested under working conditions with Vessel moored at wharf. And is eligible, in our opinion, for word + LMC 9-43, and the notations ZRB, 125 lbs W.P., T.S.G. OIL ENG.  
Sketch B217/3986 attached shows the arrangement of F.W. cooling pumps for piston & jacket cooling. During the mooring trials difficulty was experienced in starting up these pumps due to the time required for exhausting the long suction pipes by the Rotary exhausters provided by the pump makers. To facilitate the starting up of these pumps, a priming connection was taken from the discharge side of the Vertical Duplex Steam Pump installed for F.W. circulation of the Aux. Oil Engines in Port, as shown in the attached sketch. Satisfactory tests of the Machinery were witnessed with this arrangement.

The amount of Entry Fee .. £ 6 : 0/ : ✓ When applied for, 12 Oct. 1942  
Special ... £ 125 : 2/ : ✓  
2 Starting Air Receivers  
Donkey Boiler Fee ... £ 8 : 8/ : ✓ When received, 18 Oct. 1942  
Travelling Expenses (if any) £ : : ✓

Committee's Minute TUES. 30 NOV 1942  
Assigned + LMC 9-43  
ZRB-125 lbs CL

Arthur for Self & T.D. Shulston, J.E. Martin  
Engineer Surveyors to Lloyd's Register of Shipping.



NEWCASTLE-ON-TYNE

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

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