

# REPORT ON OIL ENGINE MACHINERY.

No 97822

Received at London Office - 8 SEP 1939  
NEWCASTLE-ON-TYNE

Date of writing Report... 19... When handed in at Local Office 4/9/39 Port of Newcastle on Tyne  
No. in Survey held at Newcastle on Tyne Date, First Survey 30/12/38 Last Survey 30/8/1939  
Reg. Book. Number of Visits 86

25751 on the Single Triple Quadruple Screw vessel "HAV" Tons Gross Net  
Built at Newcastle on Tyne By whom built Swan Hunter & Wigham Richardson & Co Yard No. 1567 When built 1939-8  
Engines made at do By whom made do Engine No. 1606 When made "  
Donkey Boilers made at do By whom made do Boilers No. 1606 When made "  
Marit " " " London By whom made Ivor Specialties Co Boiler No. "  
Brake Horse Power 2800 Owners " Port belonging to OSLO  
Nom. Horse Power as per Rule 687 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended Ocean going 23 5/8 91 5/8

TYPE OF ENGINES, &c.—Type of Engines Airless Injection Opposed Piston type 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 680 lb Diameter of cylinders 600 m.m. Length of stroke 2320 m.m. No. of cylinders 4 No. of cranks 4 three-throw  
Mean Indicated Pressure 84-85 lb span of bearings, adjacent to the Crank, measured from inner edge to inner edge from Centres of Side crank pins 1200 m.m. / for 2450 m.m. Is there a bearing between each crank Yes bet each three-throw  
Revolutions per minute 95 Flywheel dia. 2050 Weight 2.2 tons Means of ignition Compression Kind of fuel used Heavy oil  
Crank Shaft, dia. of journals as fitted 439 Centre 450 with 447 Mid. length breadth 820 Thickness parallel to axis 255 m.m.  
as fitted 450 Side " 450 solid ("439) Mid. length thickness 192 Thickness around eye-hole 200  
Flywheel Shaft, diameter as per Rule 13.32 Intermediate Shafts, diameter as fitted 13 3/4 Thrust Shaft, diameter at collars as per Rule 13.32  
Screw Shaft, diameter as fitted 14.695 Is the shaft fitted with a continuous liner Yes  
as fitted none as fitted 25 1/4

Brass Liners, thickness in way of bushes as per Rule 3/4 Thickness between bushes as per Rule 9/16 Is the after end of the liner made watertight in the stern tube 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 piece  
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 Light fit  
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 Yes  
If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 6 1/2  
Propeller, dia. 16-6 Pitch 13-6 No. of blades 4 Material M. Bz whether Moveable No Total Developed Surface 93 sq. feet

Method of reversing Engines Hand lever & air Is a governor or other arrangement fitted to prevent racing of the engine when disconnected Yes Means of lubrication forced  
Thickness of cylinder liners 25 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 led up funnel  
Cooling Water Pumps, No. 2 for Distilled Water for M. Lugs Is the sea suction provided with an efficient strainer which can be cleared within the vessel No. Water for M. Lugs  
Bilge Pumps worked from the Main Engines, No. None Diameter — Stroke — Can one be overhauled while the other is at work —  
Pumps connected to the Main Bilge Line { No. and Size Three viz 1 G. SP 10 1/2 x 9 x 18 ; 2 Ball and Stand by SW Cooling 10 1/2 x 12 1/2 x 21  
How driven 90 tons/hr all Steam driven. each 190 tons/hr

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 —  
Fast Pumps, No. and size 2 of 10 1/2 x 12 1/2 x 21 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 of 7 1/2 x 8 x 18  
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 3 of 3 (2 on port & 1 on S), 1 of 2 on port, Funnel recess 1 of 3 In Pump Room —  
In Holds, &c. 2 of 1 Hold-2 of 3; no 2 Hold 2 of 3 1/2; no 3 Hold (D.T. Jov) 2 of 2 1/2; no 4 Hold 2 of 3; no 5 Hold 2 of 3

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 5 (1 on port & 1 on Sth.)  
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 Both  
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 —  
What pipes pass through the bunkers None How are they protected —  
What pipes pass through the deep tanks Bilge suction to nos 1 & 2 Holds 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 level in E. Pass.  
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork —

Main Air Compressors, No. None No. of stages — Diameters — Stroke — Driven by —  
Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 10 1/2 Stroke 6 Driven by Steam (direct.)  
Small Auxiliary Air Compressors, No. None No. of stages — Diameters — Stroke — Driven by —  
Scavenging Air Pumps, No. One Diameter 1960 m.m. Stroke 610 m.m. Driven by Main engine through levers  
Auxiliary Engines crank shafts, diameter as per Rule No. Three viz 2 Steam 22 1/2 Kw; 1 Oil 7 Kw Dynamos Position all on Sth side in E.R.

W174-0063

**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.** 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 280 cu ft Internal diameter 4 1/2" thickness 1 3/32"  
 Seamless, lap welded or riveted longitudinal joint Double butt straps Material Steel Range of tensile strength 29-33 tons Working pressure by Rules 602 lb Actual 600 lb.

**ARE DONKEY BOILERS FITTED?** Yes If so, is a report now forwarded? Yes for the Oil fired Boiler 575 for LA Most Waste Heat Boiler. SEE LOND CERTIF. D2071  
 Are the donkey boilers intended to be used for domestic purposes only No - For Steam Auxiliaries etc.  
**PLANS.** Are approved plans forwarded herewith for Shafting 2/11/38 Receivers 2/11/39 Separate Fuel Tanks 13/3/39  
 (If not, state date of approval) 8/12/39 + Fly Plan 8/3/39 Pumping Arrangements in Machinery Space 19/5/39  
 Donkey Boilers 16/11/38 General Pumping Arrangements 11/4/39.  
 Oil Fuel Burning Arrangements 11/4/39.

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied Yes.  
 State the principal additional spare gear supplied One propeller shaft with C.L., Key & nut complete  
2 upper piston skirts & 2 lower piston skirts, 1 piston head,  
1 Cylinder lever, 1 relief valve for in-cy cylinders,  
1 non-return Starting Air Valve, 1 Fuel pump body complete.

The foregoing is a correct description,  
 FOR SWAN, HUNTER, & WILLIAM RICHARDSON, LTD.  
 G. J. Hendry Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1938 Dec. 30 1939 Jan. 6, 12, 31, Feb. 1, 6, 9, 10, 13, 16, 20, 21, 24, 27, Mar. 1, 2, 3, 6, 7, 8, 9, 10, 13, 16, 17, 20, 22, 23, 24, 27, 28, 29, 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, May 2, 3, 4, 8, 9, 11, 16, 23, 24, 26, June 1, 8, 12, 13, 16, 27, July 5, 6, 10, 12, 14, 18, 24, 25, 26, Aug. 2, 3, 4, 11, 22, 23, 24, 30.  
 During erection on board vessel - Aug. 2, 3, 4, 11, 22, 23, 24, 30.  
 Total No. of visits 80.  
 Dates of Examination of principal parts—Cylinders 20/3/39 Covers — Pistons 21/4/39 Rods 21/4/39 Connecting rods 21/4/39  
 Crank shaft 24/3/39 Flywheel shaft as crank. Thrust shaft as crank Intermediate shafts 6/7/39 Tube shaft —  
 Screw shaft 9/5/39 Propeller 9/5/39 Stern tube 5/7/39 Engine seatings 8/6/39 Engines holding down bolts 25/7/39  
 Completion of fitting sea connections 12/7/39. Completion of pumping arrangements 23/8/39 Engines tried under working conditions at Sea 30/4/39  
 Crank shaft, Material Steel Identification Mark W.H.B. 504537 Flywheel shaft, Material Steel Identification Mark as crank song.  
 Thrust shaft, Material " Identification Mark do. Intermediate shafts, Material Steel Identification Marks 10330-2-3  
 Tube shaft, Material — Identification Mark — Screw shaft, Material Steel Identification Mark Working 10334 PK Spare 10335 PK  
 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 in D.T. yard. If so, have the requirements of the Rules been complied with Yes  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with —  
 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 supervision in accordance with the Society's Rules, and the approved plans, and the materials and workmanship are good. The elec. welded construction Bedplate, columns & entablature were examined after the shop tests and found in good order.  
The machinery has been satisfactorily installed on board and tested under working conditions. The vessel is eligible, in my opinion, for records + LMC. 8.39. 3 Donk. Blos 120 lbs. T.S. Cl.

The amount of Entry Fee .. £ 6 : 0 :  
 Special £ 109 : 7 :  
 E.W. Constr. Bedplate etc £ 12 : 12 :  
 2 Donkey Boiler Fee ... £ 13 : 8 :  
 2 Starting Air Receivers £ 4 : 4 :  
 Travelling Expenses (if any) £ — : — :  
 When applied for, -6 SEP 1939  
 When received, 19.9.39

A. Watt  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned + LMC 8.39  
2 Donk. Blos 120 lbs. T.S. Cl.



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.)