

REPORT ON OIL ENGINE MACHINERY.

No. 22865
AUG - 8 1938

Received at London Office

Date of writing Report 3rd Aug. 1938 When handed in at Local Office 10 Port of HAMBURG
No. in Survey held at Angsburg and HAMBURG Date, First Survey 15th January Last Survey 25th July 1938
Reg. Book. 56 Number of Visits 56

on the Single Screw vessel

INVERDARGLE

Tons { Gross 9456
Net 5561

Built at HAMBURG By whom built Deutsche Werft A.G. Yard No. 202 When built 1938
Engines made at Angsburg By whom made Maschinenfabrik Augsburg-Hamburg Engine No. 49070 When made 1938
Donkey Boilers made at HAMBURG By whom made Deutsche Werft A.G. D-Boiler No. 75/676 When made 1938
Exhaust. B-B No. 738
Brake Horse Power 1000 Owners Twin Tankers, Ltd. Port belonging to Dublin
Nom. Horse Power as per Rule 1000 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which vessel is intended 997 Carrying Petroleum in bulk.

OIL ENGINES, &c. Type of Engines Heavy oil - Makers type 42m 68/120 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 680 mm Length of stroke 1200 mm No. of cylinders 8 No. of cranks 8
Mean Indicated Pressure 5.6 kg/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 925 mm Is there a bearing between each crank yes
Revolutions per minute 115 Flywheel dia. 2100 mm Weight 4380 kgs Means of ignition Diesel syst. Kind of fuel used Diesel oil

Crank Shaft, { Solid forged
Semi built
all built } dia. of journals as per Rule 422 mm as fitted 460 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth 880 mm Thickness parallel to axis 285 mm
Mid. length thickness 285 mm shrunk Thickness around eye hole 205 mm

Flywheel Shaft, diameter as per Rule 422 mm as fitted 460 mm Intermediate Shafts, diameter as per Rule 330 mm as fitted 340 mm Thrust Shaft, diameter at collars as per Rule 335 mm as fitted 400 mm

Tube Shaft, diameter as per Rule 332 mm as fitted 382 mm Is the { screw } shaft fitted with a continuous liner { yes }

Bronze Liners, thickness in way of bushes as per Rule 19 mm as fitted 22 mm Thickness between bushes as per Rule 15 mm as fitted 16 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 no

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 no

If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 1700 mm

Propeller, dia. 4800 mm Pitch 3720 mm No. of blades four Material bronze whether Moveable no Total Developed Surface 7,616 sq. metres

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent running 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 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 no

Cooling Water Pumps, No. 4 (two for each of 2 sea water pumps) the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 1 Diameter 150 mm Stroke 180 mm Can one be overhauled while the other is at work no

Pumps connected to the Main Bilge Line { No. and Size 1 Bridge 15 m³/h = 1 Bridge pump 25 m³/h - 1 Ballast pump 250 m³/h
How driven main engine steam (duplex type) steam (duplex type)

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 no

Ballast Pumps, No. and size 1 Duplex 250 m³/h Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 steam duplex 45 m³/h

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 frame 46/47 one of 90 mm φ frame 10/11 one of 90 mm φ frame 1300/201 one of 80 mm φ In Pump Rooms frame 182/183 one of 135 φ for ballast pump frame 195/196 one of 60 φ for pumps room

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one of 127 mm φ to bilge pumps - one of 152 mm φ to ballast pumps.

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 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 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 no

What pipes pass through the deep tanks cargo suction line 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 made aft Is it fitted with a watertight door no worked from no

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no

Main Air Compressors, No. no No. of stages no Diameters no Stroke no Driven by no

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 265/105 Stroke 250 mm Driven by compound steam eng.

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

What provision is made for first Charging the Air Receivers compressors driven by steam engines.

Scavenging Air Pumps, No. 1 (tandem) Diameter 1380 mm Stroke 350 mm Driven by main engine

Auxiliary Engines crank shafts, diameter as per Rule for 2-cyl. 250 SA. and oil eng. as fitted 100 mm tested by Angsburg Surveyors Position 7.5 mm (Makers Standard type)

Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith no

See below.

AIR RECEIVERS:—Have they been made under survey yes ✓ State No. of Report or Certificate Certificates of material attached
 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 by manhole Is a drain fitted at the lowest part of each receiver yes ✓
Injection Air Receivers, No. _____ Cubic capacity of each _____ Internal diameter _____ thickness _____
 Seamless, lap welded or riveted longitudinal joint _____ Material _____ Range of tensile strength _____ Working pressure by Rules _____
Starting Air Receivers, No. 2 Total cubic capacity each 12 m³ Internal diameter 130 mm thickness 24.5 mm
 Seamless, lap welded or riveted longitudinal joint riveted Material S.T.C. Steel Range of tensile strength shell 44/50 kg/mm² Working pressure by Rules 25 kg/cm²
Actual 25 kg/cm²

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 yes ✓ NO
PLANS. Are approved plans forwarded herewith for Shafting 17.9.36, 16.3.37, 20.3.37 Receivers 13.11.38 Separate Fuel Tanks 27.1.38, 5.2.38
 (If not, state date of approval)
 Donkey Boilers 20.5.38, 27.2.38 General Pumping Arrangements 29.11.37, 26.1.38 Pumping Arrangements in Machinery Space 24.1.38, 28.4.38
 Oil Fuel Burning Arrangements 17.8.38

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓
 State the principal additional spare gear supplied 1 propeller shaft marked: 440YDS 292. #3. 2.3.38.

The foregoing is a correct description.
DEUTSCHE WERFT
AKTIENGESELLSCHAFT
 Manufacturer.

Dates of Survey while building
 During progress of work in shops: 1938 Jan. 15, March 2, 4, 8, 11, 12, 15, 18, 21, April 1, 5, 7, 8, 9, 11, 14, 30, 21, 23, 26, 28, May 3, 4, 6, 10, 12, 14, 17, 18, 19, 25, 26
 During erection on board vessel: 1938 April 26, May 3, 10, 14, 18, 20, 24, 30, June 3, 10, 12, 22, 24, July 4, 6, 8, 13, 18, 23, 25.
 Total No. of visits 56

Dates of Examination of principal parts—Cylinders. Please Covers see Pistons Angsburg Roils Report Connecting rods dated 18.3.38
 Crank shaft Angsburg. S. Flywheel shaft Angsburg. S. Thrust shaft 6.5.38 Intermediate shafts 10.5.38 Tube shaft —
 Screw shaft 10.5.38 Propeller 23.3.38 Stern tube 4.5.38 Engine seatings 10.5.38 Engines holding down bolts 10.6.38
 Completion of fitting sea connections 10.6.38 Completion of pumping arrangements 22.6.38 Engines tried under working conditions 18.4.25.7.38
 Crank shaft, Material S.T.C. Steel Identification Mark 10.1.1023 Flywheel shaft, Material S.T.C. Steel Identification Mark MB. 21.5.37
 Thrust shaft, Material S.T.C. Steel Identification Mark 440YDS 1883 Intermediate shafts, Material S.T.C. Steel Identification Marks H.S. 25.1.38
 Tube shaft, Material _____ Identification Mark _____ Screw shaft, Material S.T.C. Steel Identification Mark 440YDS 291
 Identification Marks on Air Receivers Yard No. 677 Yard No. 678

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 _____ 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 yes If so, state name of vessel INVERLIFEY Handy Rep. No. 22830

General Remarks (State quality of workmanship, opinions as to class, &c. The main heavy oil engine has been built at Angsburg, the auxiliary oil engine at Darmstadt under Special Survey of the Society's Surveyors. Material and workmanship of this machinery are of good quality and the outfit is ample. It has been fitted under Special Survey at Hamburg in accordance with the approved plan, the Secretary's letter and otherwise in conformity with the requirements of the Rules. During the trial trips the machinery has given satisfaction under full working and manœuvring conditions. The machinery is eligible in my opinion to be classed with notations in the Register Book = LMC 7.38 Oil eng. TS (CL)

References (if required) 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 1/5 IRC : 24-
 Special ... 1/5 £ 500-
 Donkey Boiler Fee ... £ 516-
 Travelling Expenses (if any) £ 72-
2 STARTING AIR RECEIVERS 168-
 Committee's Minute

When applied for, _____
 When received, 23/9 1938
FRI 12

H. Rohrs
 Engineer Surveyor to Lloyd's Register of Shipping.

Assigned + L.M.C. 7.38
20B 180 lb.
1(WT) O.B. 180 lb. CL

