

Rpt. 4b

Date of writing report 10.6.61. Received London Port MANCHESTER No. 484 16.10.1961
 Survey held at MANCHESTER. In shops 20 2.3.61. 24.5.61.
 No. of visits On vessel First date Last date

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Twin Screw Passenger Ferry - I.O.W. Gross tons
 Owners Managers Port of Registry
 Hull built at By John Thornycroft & Co. Ltd. Yard No. 4196 Year Month
 Main Engines made at Openshaw By Messrs. Crossley Bros. Ltd. Contract No. 12286-7 When 1961
 Gearing made at By Blr. Nos. When
 Donkey boilers made at By Blr. Nos. When
 Machinery installed at By When

Particulars of restricted service of ship, if limited for classification
 Particulars of vegetable or similar cargo oil notation, if required
 Is ship to be classed for navigation in ice? Is ship intended to carry petroleum in bulk?
 Is refrigerating machinery fitted? If so, is it for cargo purposes? Type of refrigerant
 Is the refrigerating machinery compartment isolated from the propelling machinery space? Is the refrigerated cargo installation intended to be classed?

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines 2 No. of propellers 2 Brief description of propulsion system Direct drive to propeller.
 MAIN RECIPROCATING ENGINES. Licence Name and Type No. HDN8/45 Heavy Oil Engines
 No. of cylinders per engine 8 Dia. of cylinders 10 1/2" stroke(s) 13 1/2" 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum approved BHP per engine 900 at 450 RPM of engine and 450 RPM of propeller.
 Corresponding MIP 103 PSI (For DA engines give MIP top & bottom) Maximum cylinder pressure 950 PSI Machinery numeral 180 x 2
 Are the cylinders arranged in Vee or other special formation? In Line If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? No If so, how are upper pistons connected to crankshaft?
 Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? Ports No. and type of mechanically driven scavenge pumps or blowers per engine and how driven One - 3 Tier, D.A. Scavenge pump driven from crankshaft.
 No. of exhaust gas driven scavenge blowers per engine None Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action?
 If a stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers None Scavenge air pressure at full power 3 PSI Are scavenge manifold explosion relief valves fitted? Yes

FOUR STROKE ENGINES. Is the engine supercharged? Are the undersides of the pistons arranged as supercharge pumps? No. of exhaust gas driven blowers per engine
 No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharger?

TWO & FOUR STROKE ENGINES--GENERAL. No. of valves per cylinder: Fuel One Inlet - Exhaust - Starting One Safety One
 Material of cylinder covers C.I. Material of piston crowns C.I. Is the engine equipped to operate on heavy fuel oil? Yes
 Cooling medium for : Cylinders Fresh Water Pistons Lub. Oil Fuel valves - Overall diameter of piston rod for double acting engines
 Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? No Frames? No Entablature? No Is the crankcase separated from the underside of pistons? No Is the engine of crosshead or trunk piston type? Trunk Total internal volume of crankcase 72 cu. ft. No. and total area of explosion relief devices 4 - 54.76 sq. ins. Are flame guards or traps fitted to relief devices? Yes Is the crankcase readily accessible? Yes If not, must the engine be removed for overhaul of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? How is the engine started? Compressed Air.
 Can the engine be directly reversed? Yes If not, how is reversing obtained?
 Has the engine been tested working in the shop? Yes How long at full power? 6 hours.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 17.4.61. State barred speed range(s), if imposed for working propeller For spare propeller Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No
 Where positioned? Type No. of main bearings 9 Are main bearings of ball or roller type? Plain Distance between inner edges of bearings in way of crank(s) 14 7/8" Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, solid. (State which) Solid
 Diameter of journals 7 1/2" Diameter of crankpins Centre 7 1/4" Side Breadth of webs at mid-throw 9 1/4" Axial thickness of webs 3-23/32"
 If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material (Pins Journals OH Steel Minimum Approved 35 tpsi minimum. Webs Tensile strength 174 lbs. 8.66" 33 lbs. 7.4"
 Diameter of flywheel 34 3/8" Weight 581 lbs. Are balance weights fitted? Yes Total weight Minimum approved tensile strength
 Diameter of flywheel shaft Material Flywheel bolted to crankshaft.
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

012694-012698-0080/2

GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

These heavy oil engines have been constructed under special survey of tested materials and in accordance with the Rules, approved plans and Secretary's letters. The material is sound and, as far as can be seen, free from defects. The workmanship is good.

Each engine, coupled to a dynamometer, was tested at the Engine Builder's works under the following conditions of loading - 6 hours 100% engine rating, 1 hour 10% overload, governing, manoeuvring, $\frac{1}{2}$ hour astern.

Attached hereto Shaft Certs. F.6148.

" " Thrust Shaft Certs. F.7561, F.9615

" " Conn. Rod Certs. C.60695, C.60097

L. Hansen

Engine Surveyor to Lloyd's Register of Shipping.

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS K1, K2, J62, J67, J69, J68 LVH. 3.5.61. BEM.

CRANKSHAFT OR ROTORSHAFT 282, 283, LVH. 2.3.61.

FLYWHEEL SHAFT

THRUSTSHAFT 5885, 6733, LVH. 10.10.59. MCH.

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case?

If so, state name of vessel

Date of approval of plans for crankshaft 9/1/61

Straight shafting

Gearing

Clutch

Separate oil fuel tanks

Pumping arrangements

Oil fuel arrangements

Cargo oil pumping arrangements

Air receivers

Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube

Fitting of propeller

Completion of sea connections

Alignment of crankshaft in main bearings 13/3/61
21/3/61

Engine chocks & bolts

Alignment of gearing

Alignment of straight shafting

Testing of pumping arrangements

Oil fuel lines

Donkey boiler supports

Steering machinery

Windlass

Date of Committee

FRIDAY - 8 JUN 1962

Special Survey Fee £145. 0. 0d.

Decision

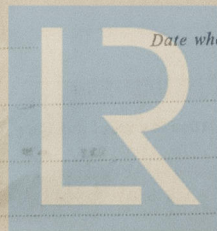
See Don 27563

Expenses

£ 3. 0. 0d.

Date when A/c rendered

15/6/61



Lloyd's Register
Foundation