

Rpt. 4b

and give
possible.

Date of writing report 2.10.61. Received London 30.6.61 Port MANCHESTER. No. 559
Survey held at MANCHESTER No. of visits 7 In shops 1.8.61. -7 MAY 15.9.61.
On vessel First date Last date

PLEASE RETURN THIS REPORT
WITH YOUR FIRST ENTRY.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Hopper Barge. CHARLES H. M^cKAY Gross tons
Owners Melbourne Harbour Trust Managers Henry Scarr Ltd., Port of Registry MELBOURNE
Hull built at Hull By Richard Dunstan Yard No. 780 Year Month
Main Engines made at Hazel Grove By Mirrlees, Bickerton & Day Ltd. Eng. No. 56721 When 1961
Gearing made at By
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 One No. of propellers One Brief description of propulsion system Direct to Propeller
MAIN RECIPROCATING ENGINES. Licence Name and Type No. KLSSDM6 Heavy Oil
No. of cylinders per engine Six Dia. of cylinders 15" stroke(s) 20" 2 or 4 stroke cycle Four Single or double acting Single
Maximum approved BHP per engine 1098 at 275 RPM of engine and 275 RPM of propeller.
Corresponding MIP 180 PSI (For DA engines give MIP top & bottom) Maximum cylinder pressure 1080 PSI Machinery numeral 220
Are the cylinders arranged in Vee or other special formation? No If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? 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? No. and type of mechanically driven scavenge pumps or blowers per engine and how driven

No. of exhaust gas driven scavenge blowers per engine 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 Scavenge air pressure at full power Are scavenge manifold explosion relief valves fitted?

FOUR STROKE ENGINES. Is the engine supercharged? Yes Are the undersides of the pistons arranged as supercharge pumps? No No. of exhaust gas driven blowers per engine One No. of supercharge air coolers per engine One Supercharge air pressure 4 PSI Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel One Inlet Two Exhaust Two Starting One Safety One

Material of cylinder covers CI Material of piston crowns CI Is the engine equipped to operate on heavy fuel oil? No

Cooling medium for :-Cylinders Fresh Water Pistons Oil Fuel valves Overall diameter of piston rod for double acting engines

Is the rod fitted with a sleeve? No 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 198 cu.ft. No. and total area of explosion relief

devices Six - 471 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? No Is the engine secured directly to the tank top or to a built-up seating? How is the engine started? Compressed Air 300 lbs/sq.in

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 24.4.61. 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 Seven Are main bearings of ball or roller

type? Plain Distance between inner edges of bearings in way of crank(s) 17 1/2" Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, solid. (State which) Solid Centre 10 1/2"

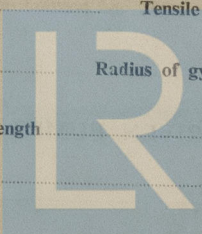
Diameter of journals 11 1/2" Diameter of crankpins Side Breadth of webs at mid-throw 18" Axial thickness of webs 5-7/32"

If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals OH Steel Approved EN 8

Diameter of flywheel 4' 9" Weight 5,700 lbs Are balance weights fitted? No Total weight Radius of gyration

Diameter of flywheel shaft Material Minimum approved tensile strength

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crankshaft.



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-6. OCT. 1961
-7. MAY 1962

ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Can the main engine be used for purposes other than propulsion when declutched?..... If so, what?

Fuel injection pumps - 6.

Service for which each pump is connected to be marked thus X

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room.

No. and size connected to main bilge line in main engine room

In aux. engine room

Size and position of direct bilge suctions in machinery spaces

.....Size and position of emergency bilge suction in machinery spaces.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (*strike out words not applicable*).

Is electric current used for essential services at sea? _____ If so, state the minimum No. and capacity of generators required in order that the ship may operate _____

at sea..... Is an electric generator driven by Main Engine?..... No.....

STEAM INSTALLATION. No. of donkey boilers burning oil fuel..... W.P. Type.....

Is a superheater fitted? Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? W.P.

| Type | Position | Can the exhaust heated boilers deliver steam directly to |
|------|----------|--|
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the steam range or do they operate only as economisers in conjunction with oil fired boilers? Port and No. of report on donkey

boilers..... Is steam essential for operation of the ship at sea?..... Are any steam pipes over 3 ins. bore?..... If so, what is their

material?..... For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules?..... No. of oil burning pressure

units No. of steam condensers No. of Evaporators

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars).....

| | |
|--|-----------------------------------|
| Have the Rule Requirements for fire extinguishing arrangements been complied with? | Brief description of arrangements |
|--|-----------------------------------|

Has the spare gear required by the Rules been supplied?.....**Yes** Has all the machinery been tried under full working conditions and found satisfactory?..... Date and duration of full

power sea trials of main engines..... Does this machinery installation contain any features of a novel or experimental nature? (GIVE PARTICULARS)

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (~~strike out words not applicable~~). 1 JUN 1961

atures of a novel or experimental nature" (over 27 paragraphs)

1 JUN 1961

HAZEL GROVE LTD. STOCKPORT

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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.

This heavy oil engine has 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.

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

Attached hereto Shaft Certs. Df. 61/316.

" " Conn. Rod Certs. C.38281

" " Thrust Shaft F.8295.

Hauser

Engineer Surveyor to Lloyd's Register of Shipping.

(L.V. HAUSER),

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

RODS 31495 LVH 4.5.61. ✓

CRANKSHAFT OR ROTORSHAFT 424 HS 24.2.61. DSf. ✓

FLYWHEEL SHAFT

THRUSTSHAFT 621 LVH 7.9.61. BHM. ✓

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 22.2.61.

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 1.8.61.

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

Special Survey Fee

£87. 0. 0d.

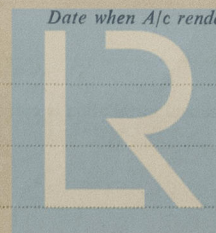
Decision

Expenses

£ 1. 5. 0d.

Date when A/c rendered

4/10/61



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