

Rpt. 4b

Date of writing report 12th August, 1958.

Received London

Port

MANCHESTER.

No. 18523.

Survey held at

MANCHESTER.

No. of visits

In shops 6.

First date

10.4.58.

Last date

5.5.58.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name "KAMUNI" (Re-engining). Gross tons

Owners Bookers Shipping Co.

Managers

Port of Registry

Hull built at

By Furness S.B. Co.

Yard No.

Year Month

Main Engines made at

Openshaw.

By Crossley Brothers Ltd.

Contract 11911.

Eng. No.

148197.

When 1958.

Seering 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 1. No. of propellers 1. Brief description of propulsion system DIRECT DRIVE TO PROPELLER.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. HRN4/40 Heavy Oil.

No. of cylinders per engine 4. 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 380. at 400 RPM of engine and 400. RPM of propeller.

Corresponding MIP 95 p.s.i. (For DA engines give MIP top & bottom) Maximum cylinder pressure 950 p.s.i. Machinery numeral 76.

Are the cylinders arranged in Vee or other special formation? Vertical.

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 2 Tier D.A. Tandem Driven from crankshaft.

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?

Is 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 p.s.i. 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 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 46 cu. ft. No. and total area of explosion relief

areas 2 - 27.4 in² Are flame guards or traps fitted to relief devices? Yes. Is the crankcase readily accessible? Yes. If not, must the engine be removed for

haul 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 7.2.58. State barred speed range(s), if imposed

Working propeller 190-230 rpm For spare propeller Is a governor fitted? Yes. Is a torsional vibration damper or detuner fitted to the shafting? No.

Are bearings positioned? Type No. of main bearings 5. Are main bearings of ball or roller

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 7 1/2". Breadth of webs at mid-throw 9 1/4". Axial thickness of webs 3.23/32".

Crank, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals O.I. Steel. Approved 35 T.P.S.I. MIN.

Webs Tensile strength

Diameter of flywheel 37 1/2". Weight 2166 lbs. Are balance weights fitted? Yes. Total weight 155 lbs. Radius of gyration 6.75".

Diameter of flywheel shaft Material Minimum approved tensile strength

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

MAIN GAS TURBINES. Name and Type No. BHP per set at RPM of output shaft
No. of sets of turbines Open or closed cycle
How is drive transmitted to propeller shaft?
ARRANGEMENT OF TURBINES. HP drives at RPM HP gas inlet temperature pressure
(A small diagram should be attached showing gas cycle.) IP drives at RPM IP gas inlet temperature pressure
LP drives at RPM LP gas inlet temperature pressure
No. of air compressors per set Centrifugal or axial flow type? Material of turbine blades
compressor blades No. of air coolers per set No. of heat exchangers per set How are turbines started?
How is reversing effected? Are the turbines operated in conjunction with free piston gas generators?
Total No. of free piston gas generators Diameter of working pistons Diameter of compressor pistons No. of double strokes
minute at full power Gas delivery pressure Gas delivery temperature Have the turbines and attached equipment been tested work
in the shop? How long at full power?

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

No. of generators KW per generator at RPM AC or DC? Position
No. of propulsion motors SHP per motor at RPM Position
How is power obtained for excitation of generators? Motors?

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

Is gearing of single or double helical type? If single, position of gear thrust bearing Is gearing of epicyclic type?
PCD of pinions: First reduction Second reduction PCD of wheels: First reduction Main
Material of pinions Tensile strength Material of wheel rims Tensile strength
Are gear teeth surface hardened? How are teeth finished? Diameter of pinion journals Wheel
journals Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated on com
of welding? Where is the propeller thrust bearing located? Are gear bearings of ball or roller type?

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give

description and, for clutches, state how operated
Can the main engine be used for purposes other than propulsion when declutched? If so, what?

STRAIGHT SHAFTING. Diameter of thrustshaft Material Minimum approved tensile strength
Shaft separate or integral with crank or wheel shaft? Diameter of intermediate shaft Material
Minimum approved tensile strength Diameter of screwshaft cone at large end Is screwshaft fitted with a continuous liner?
Diameter of tube shaft. (If these are separate shafts) Is tube shaft fitted with a continuous liner in way of stern tube Thickness of screw/tube shaft
bearings Thickness between bearings Material of screw/tube shaft Minimum approved tensile strength
Is an approved oil gland fitted? If so, state type Length of bearing next to and supporting propeller
Material of bearing In multiple screw vessels is the liner between stern tube and A bracket continuous? If not, is the exposed length of shafting
liners readily visible in dry dock?

PROPELLER. Diameter of propeller Pitch Built up or solid Total developed surface
No. of blades Blade thickness at top of root fillet Blade material Moment of inertia of dry propeller
If propeller is of special design, state type Is propeller of reversible pitch type? If so, is it of approved design?
State method of control Material of spare propeller Moment of inertia

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine Can they be declutched? No.

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate)
No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Two, each 15 cu. ft.
How are receivers first charged? Maximum working pressure of starting air system 350 p.s.i. Are the safes
accordance with the Rules? Has the starting of the main engines been tested and found satisfactory?

COOLERS. No. of main engine fresh water coolers One No. of main engine lubricating oil coolers One

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure

MAIN ENGINE DRIVEN PUMPS (No. and Purpose)

FRESH WATER PUMP
SEA " "
ENGINE LUB. OIL PUMP
LIFT LUB. OIL PUMP

3360 G.P.H.
3360 G.P.H.
2232 G.P.H.
3428 G.P.H.

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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 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, 1 hour 10% overload, governing, manoeuvring $\frac{1}{2}$ hour astern.

Attached hereto Shaft Cert. F.6275.

Conn. Rod Certs. C.26006.

Thrust Shaft Cert. F.4015.

G. H. Hauser

Engineer 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. T.15, T.16, T.28, T.27 L.V.H. 16.4.58.

CRANKSHAFT OR ROTORSHAFT 5083 L.V.H. 1.2.55.

FLYWHEEL SHAFT

THRUSTSHAFT 5649 L.V.H. 15.4.58.

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 24.10.57.

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 10.4.58.

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

TUESDAY 30 SEP 1958

Special Survey Fee

£35 - 0 - 0.

Decision

Expenses

£1 - 10 - 0.

Date when A/c rendered

15.8.58



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