

Rpt. 4b

Date of writing report 12th August, 1958.

Received London

15 AUG 1958

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-engineing). Gross tons

Owners Bookers Shipping Co. Managers Port of Registry

Hull built at By Furness S.B. Co. Year Month

Main Engines made at Openshaw. By Crossley Brothers Ltd. Contract 11911. Eng. No. 148197. When 1958.

Seaming 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.

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 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.

Lubricating medium for: Cylinders Water. Pistons Lub. Oil. Fuel valves. Overall diameter of piston rod for double acting engines

Is the piston 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

devices 2 - 27.4 in^2. 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. base 404 T

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.

How is the propeller 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.

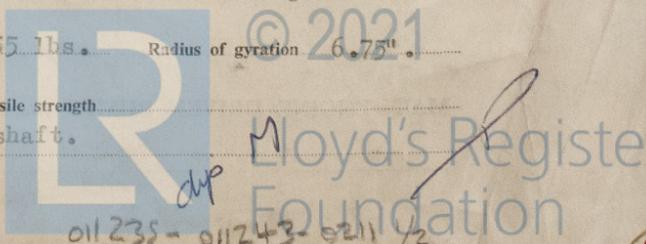
Minimum Pins. Crankshaft material Journals O.I. Steel. Approved 35 T.P.S.I. MIN.

Web 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 bolted to crankshaft.

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



MAIN GAS TURBINES. Name and Type No. _____ at _____ RPM of output shaft

No. of sets of turbines _____ Open or closed cycle _____ BHP per set _____

How is drive transmitted to propeller shaft? _____

ARRANGEMENT OF TURBINES. (A small diagram should be attached showing gas cycle.)

HP drives _____ at _____ RPM HP gas inlet temperature _____ pressure _____

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 _____

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 _____ 1. 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 _____

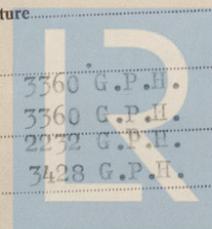
accordance with the Rules? _____ Has the starting of the main engines been tested and found satisfactory? _____

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	3360 G.P.H.
SEA " "	3360 G.P.H.
ENGINE LUB. OIL PUMP	2232 G.P.H.
LIFT LUB. OIL PUMP	3428 G.P.H.



© 2021

Lloyd's Register Foundation

Bookers

95

3 p.s.i.

No.

27.4 in²

190-2

7 1/2

37 1/2

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.

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 1/2 hour astern.

Attached hereto Shaft Cert. F.6275.

Conn. Rod Certs. C.26006.

Thrust Shaft Cert. F.4015.

L. 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. 1.9.55.

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

