

3 - OCT 1960

Rpt. 4b

Date of writing report 12/8/60. Received London HULL. No. 06257. Survey held at Goole. No. of visits In shops On vessel 9. First date 6. 11. 59. Last date 20. 9. 60.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name C. 871. Gross tons Owners The Admiralty. Managers Port of Registry Hull built at Goole. By Messrs. C. Campling (Goole) Ltd. Year Month When 1960. Main Engines made at None. By Eng. No. When Gearing made at Donkey boilers made at

AUX Machinery installed at Goole. By Messrs. C. Campling (Goole) Ltd. When 1960. Particulars of restricted service of ship, if limited for classification 100A1 "Barge". Carrying Petroleum in Bulk. for service in Gibraltar harbour.

Is ship to be classed for navigation in ice? No. Is ship intended to carry petroleum in bulk? Yes. Is refrigerating machinery fitted? No. 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 None. No. of propellers Brief description of propulsion system Dumb Barge.

MAIN RECIPROCATING ENGINES. Licence Name and Type No.

No. of cylinders per engine Dia. of cylinders stroke(s) 2 or 4 stroke cycle Single or double acting Maximum approved BHP per engine at RPM of engine and RPM of propeller. Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral

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? 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?

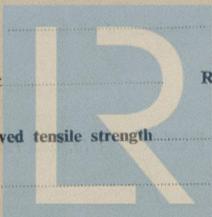
TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel Inlet Exhaust Starting Safety

Material of cylinder covers Material of piston crowns Is the engine equipped to operate on heavy fuel oil? Cooling medium for:—Cylinders Pistons Fuel valves Overall diameter of piston rod for double acting engines Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the underside of pistons? Is the engine of crosshead or trunk piston type? Total internal volume of crankcase No. and total area of explosion relief devices Are flame guards or traps fitted to relief devices? Is the crankcase readily accessible? 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? Can the engine be directly reversed? If not, how is reversing obtained? Has the engine been tested working in the shop? How long at full power?

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system State barred speed range(s), if imposed for working propeller For spare propeller Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting?

Where positioned? Type No. of main bearings Are main bearings of ball or roller type? Distance between inner edges of bearings in way of crank(s) Distance between centre lines of side cranks or eccentrics of opposed piston engines Crankshaft type: Built, semi-built, solid. (State which)

Diameter of journals Diameter of crankpins Centre Breadth of webs at mid-throw Axial thickness of webs Side Pins Minimum If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved Webs Tensile strength Diameter of flywheel Weight Are balance weights fitted? 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)



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MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines Open or closed cycle BHP per set at RPM of output shaft

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 Material of 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 per minute at full power
 Gas delivery pressure Gas delivery temperature Have the turbines and attached equipment been tested working 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 shaft journals
 Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated on completion 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 brief 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 liner at 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 between 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. 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)
 How are receivers first charged? Maximum working pressure of starting air system Are the safety devices in accordance with the Rules? Has the starting of the main engines been tested and found satisfactory?

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

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)

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	Service for which each pump is connected to be marked thus X														
	SUCTION					DELIVERY									
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling
Two portable brass 1 1/2" ZWICKY hand pumps for bilges.															
Two fixed 1" semi-rotary hand pumps positioned engine room after bulkhead for oil fuel transfer.															
One portable brass 2" ZWICKY hand pump for stripping purposes.															

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room 1 - 1 1/2" FWD Store 1 - 1 1/2" Pump Room
 3 - 2" cargo stripping suctions PCS in Pump Room

No. and size connected to main bilge line in main engine room 2 - 1 1/2" ✓ In tunnel -

In aux. engine room - Size and position of direct bilge suctions in machinery spaces -

Size and position of emergency bilge suctions in machinery spaces -

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No. 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). Yes.

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
PS No. 30598/55	M3 MK2 Diesel	National Gas & Oil Eng.	Manchester Rpt. 10/4C No. 114 driving cargo pump No. 30598 London Pump Certificate No. D.70811	
SS No. 30599/55	M3 MK2 Diesel	National Gas & Oil Eng.	Manch. Rpt. 10/4C No. 114 driving cargo pump No. 30599 London Pump Certificate No. D.70810	
				with belt driven circulating pump GILKES No. 837 Barrow Cert. No. P2730
				with belt driven circulating pump GILKES No. 916 Barrow Cert. No. P2329

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? -

STEAM INSTALLATION. No. of donkey boilers burning oil fuel W.P. Type
 Position
 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 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) Rod and Chain Type
 Hand Steering Gear Glasgow Rpt. 10 No. C.59233.

Have the Rule Requirements for fire extinguishing arrangements been complied with? YES Brief description of arrangements OF outlet valves extended spindles, 6 - 2 gall. Foam Type Fire Extinguishers, Steam Smothering Shore Connection.

Has the spare gear required by the Rules been supplied? - Has all the machinery been tried under full working conditions and found satisfactory? Yes 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) No.

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.

The Auxiliary machinery has been efficiently installed in this vessel in accordance with the Rules, Approved plans and Secretary's letters, tested under working conditions and found satisfactory.

The materials and workmanship are good.

The Auxiliary machinery is eligible in my opinion to be ^{accepted as} suitable for a non-propelled vessel.

J. Vincent

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

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS Hand operated warping windlass Glasgow Rpt.10 No.C.58899.

Is the installation a duplicate of a previous case? No. If so, state name of vessel -

Date of approval of plans for crankshaft - Straight shafting - Gearing - Clutch -

Separate oil fuel tanks - Pumping arrangements 2/6/60. Oil fuel arrangements -

Cargo oil pumping arrangements 8/4/59. Air receivers - Donkey boilers -

Dates of examination of principal parts:—

Fitting of stern tube - Fitting of propeller - Completion of sea connections 9/7/60. Alignment of crank shaft in main bearings -

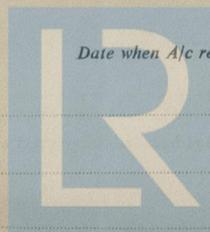
Engine chocks & bolts - Alignment of gearing - Alignment of straight shafting - Testing of pumping arrangements -

Oil fuel lines - Donkey boiler supports - Steering machinery 17/9/60. Windlass -

Date of Committee TUESDAY 13 DEC 1960 Special Survey Fee -

Decision See Rpt. 1.

Expenses £5. 0s. 0d.



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