

Rpt. 4b

18 JUN 1964

Date of writing report 10/6/64. Received London Hull. No. 69715. Survey held at Thorne. No. of visits In shops On vessel 5. First date 16. 4. 64. Last date 26. 5. 64.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Dumb Oil Barge "P.A.S. 1404" Gross tons

Owners The Admiralty. Managers Port of Registry Bath.

Hull built at Thorne. By Richard Dunston, Ltd. Yard No. T.1147 Year Month When 1964. 5.

Main Engines made at By Eng. No. When

Gearing made at By Gear No. When

Aux./donkey boilers made at By Blr. Nos. When

Machinery installed at Thorne. By Richard Dunston, Ltd. When

Particulars of restricted service of ship, if limited for classification Al "Dumb oil barge" "Oil flash point above 150 F" "River & Estuary service".

Particulars of vegetable or similar cargo oil notation, if required

If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3 Is ship an oil tanker? Yes.

Is refrigerating machinery fitted? No. 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 should 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 all other relevant particulars must be given and the port and report number should be stated.

No. of main engines No. of propellers Brief description of propulsion system

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 BHP per engine approved for this installation at RPM of engine and RPM of propeller.

Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral

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

TWO AND 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?

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 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)

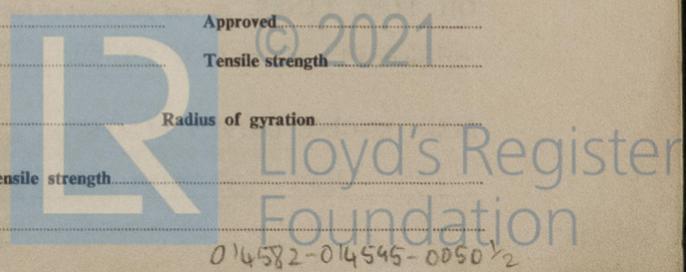
Diameter of journals Diameter of crankpins Centre Breadth of webs at mid-throw Axial thickness of webs Side Pins Minimum

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. State Port and report No.)

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. Full particulars to be reported on Form 4e.) Port _____ Report No. _____

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 _____ How is the after end of the liner made watertight in the propeller boss? _____

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. If of special design, state type _____ Is it of reversible pitch type? _____

If so, is it of approved design? _____ State method of control _____

Propeller	Diameter	Pitch	Built or solid	Total developed surface	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry)	For Class 1 or 2 ice strengthening only				
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade	
Working														
Spare														

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 _____ Two - One on floors 9 - 11, one Port side aft in pump house on deck.

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
One 1 1/4" semi-rotary O.F. transfer in aft store.															
Four 5" - Deck type bilge pumps.															

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room _____ One 2" in each fore'd store, cofferdam, port side aft store and starboard side aft store.

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

In aux. engine room _____ Size and position of direct bilge suction 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 oil tankers, ships carrying cargo oil or classed for navigation in ice Class 1, 2 or 3? (Strike out words not applicable.) _____

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
In pump house on dk.	Industrial type 4.236 4 cyl. 45 BHP @ 1470 RPM Radiator cooled battery started.	Perkins.	Not made under Survey. Makers test certificate attached/Admiralty request.	Stothert & Pitt. Screw displacement type cargo/ballast pump.

Navigation lights and Is electric current used for essential services at sea? cargo pump Eng. only. _____ If so, state the minimum size and capacity of generator required in order that the ship may operate 2 - 24 volt 350 amp/hr. batteries for Nav. lights. _____ Is an electric generator driven by Main Engine? _____ No, Generator on board.

STEAM INSTALLATION. No. of aux./donkey boilers burning oil fuel _____ W.P. _____ Type _____ (See Circular 2144)

Position _____ Is a superheater fitted? _____ Are these boilers also heated by exhaust gas? _____ No. of aux./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 aux./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 including particulars of alternative means of steering) _____ Rods and chains with hand gear.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes. _____ Brief description of arrangements _____ One. 80 lbs. C.O² to pump house with alarm in accordance with the Rules.

Has the spare gear required by the Rules been supplied? Yes. _____ Has all the machinery been tried under full working conditions and found satisfactory? Yes. _____ Date and duration of full power trials of ~~main engine~~ Machinery. 14/5/64. _____ Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) 2 hours.

The foregoing description of the ~~main engine~~ installation is correct and the ~~main engine~~ is approved for service in accordance with the Rules. (Strike out words not applicable.)

PER PRO. RICHARD DUNSTON, LTD



