

Rpt. 4b

18 JUN 1964

Date of writing report 10/6/64. Received London Port 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

If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material: Journals Pins Minimum

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)

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
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?
Is it of reversible pitch type?

PROPELLER. If of special design, state type
If so, is it of approved design? State method of control

Table with 14 columns: 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), Blade thickness at 25% radius, Blade thickness at tip, Length of blade section at 25% radius, Rake of blade. Rows: 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)

Table with 14 columns: 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. Rows: One 1 1/4" semi-rotary O.E. 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
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? 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
Table with 5 columns: Position of each, Type, Made by, Port and No. of Rpt. or Cert., Driven Machinery (For electric generators, state output). Row: In pump house on dk. Industrial type 4.236 4 cyl. 45 BHP @ 1470RPM 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.
2 - 24 volt 350 amp/hr. batteries for Nav. lights.
12 - 12 volt battery for Eng. starting. 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
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 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 installation is correct and the particulars are approved for the usual vibration characteristics. (Strike out words not applicable.)

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 machinery of this dumb barge has been installed under Special Survey in accordance with the Approved plans, Secretary's letters and the Rules.

The material and workmanship are good and the machinery is in my opinion suitable for a vessel classed in the Register Book 'A1 Dumb Oil Barge'

'Oil flash point above 150° F' "River & Estuary Service".

W. H. H. H. H.

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

Is the installation a duplicate of a previous case? Yes. If so, state name of vessel 'P.A.S.1401' 'P.A.S.1402' 'P.A.S.1403'.

Date of approval of plans for crankshaft 30/10/63. Straight shafting 1/1/64. Gearing 1/1/64. Clutch 14/5/64.
Separate oil fuel tanks 30/10/63. Pumping arrangements 1/1/64. Oil fuel arrangements 14/5/64.
Cargo oil pumping arrangements 1/1/64. Air receivers 14/5/64. Aux./donkey boilers 14/5/64.

Dates of examination of principal parts:—

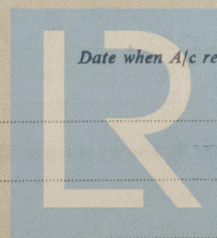
Fitting of stern tube — Fitting of propeller — Completion of sea connections 9/3/64. Alignment of crankshaft in main bearings —
Engine cocks & bolts — Alignment of gearing — Alignment of straight shafting — Testing of pumping arrangements 14/5/64.
Oil fuel lines 14/5/64. Donkey boiler supports — Steering hand 14/5/64. Windlass 14/5/64.

Date of Committee FRIDAY 14 AUG 1964 Special Survey Fee See Rpt.1 attached.

Decision See Rpt.1

Expenses

Date when A/c rendered



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