

Rpt. 4b

Date of writing report 30th September, 1958

Received London

24 OCT 1958

Port of GENOA

No.

23696

20.12.57

29.7.58

Survey held at TURIN

No. of visits

In shops 34

First date

Last date

On vessel

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name CANTIERE NAVALE BREDA - VENEZIA - YARD No. 207. Gross tons -

Owners - Managers - Port of Registry -

Hull built at VENEZIA By Messrs. CANTIERE NAVALE BREDA Yard No. 207 When 1958

Main Engines made at TURIN By Messrs. FIAT S.G.M. Eng. No. 4347 When 1958

Gearing 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 one No. of propellers one Brief description of propulsion system one oil engine directly coupled to one propeller

MAIN RECIPROCATING ENGINES. Licence Name and Type No. "FIAT" airless injection C 759 S supercharged

No. of cylinders per engine 9 Dia. of cylinders 750 mm. stroke(s) 1320 mm. 2 or 4 stroke cycle 2 Single or double acting single

Maximum approved BHP per engine 9000 at 125 RPM of engine and 125 RPM of propeller.

Corresponding MIP 7.3 Kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 65 Kg/cm² Machinery numeral 1800

Are the cylinders arranged in Vee or other special formation? in one vertical line 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? through ports No. and type of mechanically driven scavenge pumps or blowers per engine and how driven 9 piston type driven by main engine crosshead.

No. of exhaust gas driven scavenge blowers per engine 3 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 No. of scavenge air coolers 7 Scavenge air pressure at full power 0.630 Kg/cm² 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 -

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 none Exhaust none Starting one Safety one

Material of cylinder covers S.M. (cast) Steel Material of piston crowns S.M. (cast) Steel Is the engine equipped to operate on heavy fuel oil? -

Cooling medium for :—Cylinders F.W. Pistons Lub.oil Fuel valves F.W. Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? no Is welded construction employed for: Bedplate? no Frames? no Entablature? no Is the crankcase separated from the underside of pistons? yes Is the engine of crosshead or trunk piston type? cross-head Total internal volume of crankcase 136 m³ No. and total area of explosion relief devices 9-17200 cm² Are flame guards or traps fitted to relief devices? no Is the crankcase readily accessible? yes 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? by 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? 2 hours and 20 minutes and 3 hours at 9900 BHP - 130 RPM. at 9000 BHP.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 15-9-58 State barred speed range(s), if imposed for working propeller - For spare propeller - Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? - Type - No. of main bearings 11 Are main bearings of ball or roller type? white Distance between inner edges of bearings in way of crank(s) 968 mm. Distance between centre lines of side cranks or eccentrics of opposed piston engines -

Crankshaft type: Built, semi-built, solid. (State which) semi-built.

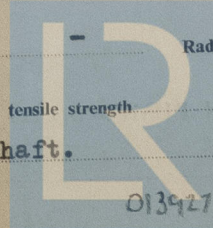
Diameter of journals 550 mm. Diameter of crankpins 550 mm. Breadth of webs at mid-throw 1060 mm. Axial thickness of webs 318 mm.

If shrunk, radial thickness around eyeholes 252.5 mm. Are dowel pins fitted? no Crankshaft material Journals SM (cast) Steel Minimum 50-60 Kg/mm² Webs SM (cast) Steel Tensile strength -

Diameter of flywheel 2430 mm. Weight 3920 Kg. Are balance weights fitted? no Total weight - Radius of gyration -

Diameter of flywheel shaft see thrust Material - Minimum approved tensile strength -

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



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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				
<i>(A small diagram should be attached showing gas cycle.)</i>				
IP drives	at	RPM	HP gas inlet temperature	pressure
LP drives	at	RPM	IP gas inlet temperature	pressure
			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?.....

Can the main engine be used for purposes other than propulsion of the vessel?

STRAIGHT SHAFTING. Diameter of thrustshaft 550 mm. Material S.M. Steel Minimum approved tensile strength 50 Kg/mm²

Shaft separate or integral with crank or wheel shaft? separate from crank Diameter of intermediate shaft 425 mm. Material S.M. Steel

Minimum approved tensile strength 44 Kg/mm² Diameter of screwshaft cone at large end 476 mm. 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 _____

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 5500 mm. Pitch 3849 mm. Built up or solid solid Total developed surface 11.2 m²

No. of blades 4 Blade thickness at top of root fillet 220 mm. Blade material M.B. Moment of inertia of dry propeller 213417 Kg.cm. sec²

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

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)	none.
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INDEPENDENT PUMPS	SUCTION	DELIVERY
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Name below essential pumps, state position and how driven. Give capacity of bilge pumps.														
Bilge	Bilge	Ballast	Oil	Fresh Water		Feed	Lub.	Boiler	Salt Water	Fresh Water	Oil	Fire	Lub.	Piston

[illegible]

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room.

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

Size and position of emergency bilge suction in machinery spaces 10

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? 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).

STEAM & OIL ENGINE AUXILIARIES

[illegible]

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

Is a superheater fitted?..... Are these boilers also heated by exhaust gas?..... No. of donkey boilers heated by exhaust gas only?..... W.P.

Time..... **Position**..... **Can the exhaust heated boilers deliver steam directly**

Port and No. of report on donk

Is steam essential for operation of the ship at sea?..... Are any steam pipes over 3 ins. bore?..... If so, what is the

For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules?..... No. of oil burning pressure

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Appliances, etc.)

Have the Rule Requirements for fire extinguishing arrangements been complied with? ☒ Yes ☐ No

will be supplied at Venice.

Has the spare gear required by the Rules been supplied?.....

power sea trials of main engines

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (in the original 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 main engine of this vessel has been constructed under special survey of tested materials and in accordance with the approved plans, Secretary's letters and Rules Requirements.

The materials and workmanship are good.

This oil engine has been tried under working condition on bench at full power and found satisfactory.

The torsional vibration characteristics of the complete propelling system have been approved for a service speed of 125 R.P.M.-

This engine has now been despatched to Venice to be fitted on board the Messrs. CANTIERE NAVALE BREDA, their Yard No. 207.-

When the oil engine has been installed on board the vessel and the machinery installation tried at full power to the satisfaction of the Society's Surveyor, the machinery will be eligible to be Classed in the Society Register Book with the notation :- +LMC (with date) Oil Engine.

(G. Vigo).

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.)

Connecting rods LLOYD'S GEN IL 1486- IL 1490- IL 1498- IL 1508- IL 1512- IL 1513- IL 1514- IL 1516-IL 1517- G.V. 28-4-58.
Piston rods LLOYD'S GEN IL 1613- IL 1622- IL 1632- IL 1636- IL 1637- IL 1641- IL 1642-IL 1644-IL 1647- G.V. 22-4-58.
CRANKSHAFT ~~CRANKSHAFT~~ 1st section :-LLOYD'S GEN.S.2604-A G.M. 4-2-58.-2nd section LLOYD'S GEN.S.2544-A G.M.8-2-58.
FLYWHEEL SHAFT }
THRUSTSHAFT } LLOYD'S GEN. 3435 G.V. 10-1-58.=
GEARING -
INTERMEDIATE SHAFTS -
SCREW AND TUBE SHAFTS -
PROPELLERS -
OTHER IMPORTANT ITEMS Exhaust gas driven scavenge blowers - Genoa Certificate No. M. 2805.=

Is the installation a duplicate of a previous case? no If so, state name of vessel -
Date of approval of plans for crankshaft 4-6-57 Straight shafting 21-2-58 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 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 - Windlass -
Date of Committee -
Decision See Rpt. 1

F. E. Special Survey Fee DURING CONSTRUCTION ON SHIP:
£4,840.00 less 15%
£4,114.00
Expenses £4,117.203
REV. TAX 3% 24.937

Date when A/c rendered

1/8/1958

