

Rpt. 4b

Date of writing report 14th December, 1964.

Received London 26 FEB 1965

Port GENOA

No. 29569

Survey held at GENOA

No. of visits In shops 29 On vessel 45

First date 3.10.63 Last date 11.7.64

Last date 27.7.64 9.12.64

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name m.s.t. "GIUSEPPE VERDI" Gross tons 31,133

Owners BLACKSEA STATE STEAMSHIP LINES ~~USSR~~ Port of Registry ODESSA

Hull built at GENOA SESTRI By ANSALDO S.A. CANTIERE NAVALE Yard No. 1597 When 1964-11

Main Engines made at GENOA SAMPIERDARENA By ANSALDO S.A. STAB. MECCANICO Eng. No. 909002 When 1964-7

Gearing made at By Gear No. When

Aux./boilers made at GENOA SAMPIERDARENA By ANSALDO S.A. STAB. MECCANICO Blr. Nos. LLOYDS, 500, 501 When 1964-11

Machinery installed at GENOA SESTRI By ANSALDO S.A. CANTIERE NAVALE When 1964-11

Particulars of restricted service of ship, if limited for classification none

Particulars of vegetable or similar cargo oil notation, if required none

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

Is refrigerating machinery fitted? yes If so, is it for cargo purposes? no Type of refrigerant

Is the refrigerating machinery compartment isolated from the propelling machinery space? no Is the refrigerated cargo installation intended to be classed? no

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 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. ANSALDO FIAT 909 S type solid injection oil engine

No. of cylinders per engine 9 Dia. of cylinders 900mm. stroke(s) 1600mm. 2 or 4 stroke cycle 2 stroke Single or double acting single

Maximum BHP per engine approved for this installation 19,000 at 122 RPM of engine and 122 RPM of propeller.

Corresponding MIP 8.97Kg/cm2 (For DA engines give MIP top & bottom) Maximum cylinder pressure 70 Kg/cm2 Machinery numeral 3800

Are the cylinders arranged in Vee or other special formation? no - 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? in cylinders through ports No. and type of mechanically driven scavenge pumps or blowers per engine and how driven nine reciprocating pumps directly driven from M.E. crossheads

No. of exhaust gas driven scavenge blowers per engine 4 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 none No. of scavenge/air coolers five 2nd stage Scavenge air pressure at full power 0.95 Kg/cm2 Are scavenge manifold explosion relief valves fitted? yes one

TWO AND FOUR STROKE ENGINES. Is the engine supercharged? yes Are the undersides of the pistons arranged as supercharge pumps? no No. of exhaust gas driven blowers per engine 4 No. of supercharge air coolers/per engine two Supercharge air pressure 0.95Kg/cm2 Can engine operate without supercharger? yes

No. of valves per cylinder: Fuel one Inlet none Exhaust none Starting one Safety one

Material of cylinder covers S.M. steel Material of piston crowns S.M. steel Is the engine equipped to operate on heavy fuel oil? yes

Cooling medium for: Cylinders fresh water Pistons lubricating oil Fuel valves fresh water Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? - Is welded construction employed for: Bedplate? yes Frames? yes Entablature? no Is the crankcase separated from the underside of pistons? yes

Is the engine of crosshead or trunk piston type? crosshead Total internal volume of crankcase 236m3 No. and total area of explosion relief devices 9x30300 cm2 Are flame guards or traps fitted to relief devices? yes 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? built up seating How is the engine started? by compressed air

Can the engine be reversed? yes If not, how is reversing obtained? -

Has the engine been tested working in the shop? yes How long at full power? 3 hours 278 62 544 P.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 11/7/63 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? yes axial

Where positioned? ford. end of crankshaft Type ANSALDO-FIAT No. of main bearings 11 Are main bearings of ball or roller type? no Distance between inner edges of bearings in way of crank(s) 1220mm. 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 700mm. Diameter of crankpins Centre 700mm. Breadth of webs at mid-throw 1330mm. Axial thickness of webs 420mm. Side - Pins S.M. cast steel Minimum

If shrunk, radial thickness around eyeholes 312.5mm. Are dowel pins fitted? no Crankshaft material: Journals S.M. forged steel Approved 55 Kg/cm2 Webs S.M. cast steel Tensile strength

Diameter of flywheel 2870mm. Weight 3800Kg. Are balance weights fitted? yes Total weight No. 3 aft. web 940Kg. 939.7mm. No. 5 ford. web 840Kg. 939.7mm. No. 6 each web 1020Kg. 960 mm. No. 9 each web 1020Kg. 960 mm. Minimum approved tensile strength 55 Kg/mm2

Diameter of flywheel shaft 700mm. Material S.M. steel

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

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Electr. cent. 50m3/hr  
 F/W & S/W circ. M.E. stbd.  
 Elect. cent. 800/600m3/hr

Service for which each pump is connected to be marked thus X

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	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			
	Oily water separator Port fwd.																	
Electr. recip. 56m3/hr	X															Oily water separator		
Diesel alt. circ. Stbd.																		
Electr. cent. 20m3/hr						X					X							
T/A cond. extract Stbd.																		
Electr. cent. 6m3/hr																		
Blr. circ. Stbd. aft.																		
Electr. cen. 50m3/hr								X			X							
Blr. F/O Blr. rm.																		
Electr. cen. 3.5x0.3m3/hr				X														
Blr. feed Stbd. aft.																		
Electr. cen. 8m3/hr						X					X							
L/O trans. Port																		X
Electr. cen. 20m3/hr								X										
M.E.F/O booster- Fwd.																		
Electr. cen. 8.6m3/hr				X														
M.E. fuel valve clg. Stbd. fwd.																		
Electr. cen. 17m3/hr					X													
Comp. S/W circ. Port fwd.																		
Electr. cen. 22m3/hr								X										
Comp. S/W circ. Port fwd.																		
Electr. cen. 1.5m3/hr								X										
Aux. diesel O/F Fwd.																		
Electr. cen. 1m3/hr				X									X					
Aux. diesel pre. lub. Stbd. fwd.																		
Electr. cen. 16m3/hr									X									

MAIN CARGO PUMPROOM-																			
Bilge Port fwd.																			
Steam duplex 40m3/hr																			Overboard
Ballast Stbd. aft.																			
Electr. cent. 1250m3/hr.				X				X											
-FWD. PUMPROOM-																			
Bilge & ballast Mid. aft.																			
Steam duplex 250m3/hr.	X			X				X											Fuel oil or ballast tks.
Fuel oil trans. Stbd.																			
Steam duplex 100m3/hr				X	X			X											X overboard
Emerg. fire Port																			X
Diesel 250m3/hr																			X



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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
Cond. circ. Stbd. fwd. elect. centrif. 600m <sup>3</sup> /hr. Blr. feed						X									X
Electr. centrif. 35m <sup>3</sup> /hr. Atmos. cond. circ. Stbd. 300m <sup>3</sup> /hr. F/O trans. Stbd. fwd. 72m <sup>3</sup> /hr. Electr. cent. Daily service F/O trans. - Stbd. Fwd. 36m <sup>3</sup> /hr. Electr. cent. M.E. lub. oil Stbd. aft. 500m <sup>3</sup> /hr. Electr. cent. F/W & S/W circ. M.E. stbd. 800/600m <sup>3</sup> /hr. Electr. cent. Aux. S/W circ. Stbd. 120m <sup>3</sup> /hr. Electr. cent. General service Port fwd. 100m <sup>3</sup> /hr. Electr. cent. Bilge Port fwd. 40m <sup>3</sup> /hr. Steam duplex Port 250m <sup>3</sup> /hr. Electr. cent. Fire pump Port 250m <sup>3</sup> /hr. Electr. cent. Bilge Port fwd. 120m <sup>3</sup> /hr. Electr. cent.				X							X				

**BILGE SUCTIONS.** No. and size in each hold, deep tank or pump room. Main Pump Room. One fwd. & one aft. - 100mm.  
 Fwd. pumproom one cent. - 63mm. Boatswain store one port & one stbd. - 63mm. Chain locker one - 63mm.  
 No. and size connected to main bilge line in main engine room 1-aft. tunnel well - 125mm. 1 aft. E.R. 100mm. 2 P&S fwd. 125mm.  
 Blr. 1-port 1stbd. Fwd. M.E. coff. 100mm. 3-P. cent. S. Fwd. coff. 50mm.  
 In aux. engine room 1 port & 1 stbd. fwd. 65mm. 1 Port & 1stbd. aft. 80mm. Size and position of direct bilge suction in machinery spaces. 2 P&S mid. E.R. 150mm. 1-Fwd. E.R. - 100mm. Size and position of emergency bilge suction in machinery spaces. 1-Stbd. E.R. 350mm.  
 Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? yes Do the piping arrangements comply with the Rules including special requirements for oil tankers, ships carrying cargo oil & ~~or~~ classified for navigation in ice Class xxx 3? (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)
Port fwd. Eng. Room	Diesel Sulzer	C.R.D.A.	5818 TRIESTE <sup>601</sup> ✓	550kW
Stbd. Inbd. Eng. Room	6B. CAH. 29	C.R.D.A.	5817 Rpt. 4c. ✓	550kW
Stbd. Outbd. Eng. Room	" "	C.R.D.A.	5816 No. 16254. ✓	550kW
Stbd. Outbd. tween dk. level	Steam turbine	ANSALDO MECC.	GEN. same No. attached ✓	450kW
Stbd. Inbd. " "	Diesel.	M.A.N.	AUGSBURG. 1802. <sup>ref</sup> ✓	200kW
Stbd. boatdeck aft.	Diesel. 4 S.C.S.A.	BREDA	MILAN M. 2827. <sup>601</sup> ✓	Emergency. 150kW
Fwd. pumproom	Diesel	"ALFA ROMEO"	MILAN No. 00505 - Cert. No. 51 ✓	Emergency fire pump. 250m <sup>3</sup> /hr
Port E.R. comp. flat.	Hand start single cyld. diesel	REGGIO EMILIA	Marked 6762. ✓	Aux. air comp. 15m <sup>3</sup> /hr.

Is electric current used for essential services at sea? yes If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea one - 450 kW Is an electric generator driven by Main Engine? no  
**STEAM INSTALLATION.** No. of aux. ~~donkey~~ boilers burning oil fuel two W.P. 12 kg/cm<sup>2</sup> Type ANSALDO FOOSTER WHEELER Water Tube  
 (See Circular 2144) Position Port & Stbd. aft. eng. room 'tween deck level (enclosed space up to upper deck level)  
 Is a superheater fitted? no Are these boilers also heated by exhaust gas? no No. of aux./donkey boilers heated by exhaust gas only? one W.P. 8/12 Kg/cm<sup>2</sup>  
 Type CASINGHINI "DIESECON G." Position just below funnel casing 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? yes. Steam at 8 Kg/cm<sup>2</sup> can be delivered to turbo alternator. Port and No. of report on aux. ~~donkey~~ boilers E.G. Milan No. 54. O.F. Genoa. Same No. attached. Is steam essential for operation of the ship at sea? yes Are any steam pipes over 3 ins. bore? yes If so, what is their material? M.S. Solid drawn and copper For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? yes No. of oil burning pressure units two No. of steam condensers one No. of Evaporators two

**STEERING GEAR.** (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars including particulars of alternative means of steering) electric hydraulic  
4 ram. Two electr. motors driving two hydraulic pumps. Greenock Cert. No. C. 224.  
 Have the Rule Requirements for fire extinguishing arrangements been complied with? yes Brief description of arrangements Steam smothering in Blr. Rm. & cargo tanks. CO2 in Blr. Rm., Eng. Rm., Emergency Gnr. Room. Foam ext. in cargo tanks. Fixed & portable fire exts. evenly distributed throughout ship. Hydrants and hoses with Spaay & jet nozzles.  
 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 sea trials of main engines 1/12/64 - 8 hours Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) no

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics. (Strike out words not applicable.)  
 ANSALDO S.p.A. - CAN  
 STABILIME TO MECCANICI  
 Builder  
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**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 main engine has been built and installed under special survey of tested materials and in accordance with the approved plans, Secretary's letters and rule requirements.

The materials and workmanship are good and the engine has been satisfactorily tested in the shop under full power and overload conditions. After shop trials the engine has been dismantled and the parts found to be in good condition.

The torsional vibration characteristics of the main propelling installation have been approved for a service speed of 122 RPM.

The machinery of this ship is eligible, in my opinion, to be classed in the Society's Register Book with the notation +LMC 12/64 C.L. "OIL ENGINE".

*B.S. Thompson*  
 (B.S. THOMPSON & S. DINNEN)  
 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 S247 S505 S524(two) S674(two) S504(two) S45 16.4.64 - B.T.  
 Upper piston rods LLOYD'S GEN 7469, 8245, 8205, 7471, 8083, 8084, 8150, 7463, 8086. 21.5.64 - B.T.  
 Piston rods LLOYD'S GEN P1135, P1115, P1114, P1113, P1112, P1067, P1068, P1069, P578 - 18.5.64 - B.T.  
 Air Pump piston rods LLOYD'S GEN P86(six) P65(two) P61 LLOYD'S GEN 7.1.64 - B.T. -

**CRANKSHAFT OR ROTORSHAFT**

FLYWHEEL SHAFT } Shaft LLOYD'S GEN. SS402-29.11.63-B.T.-  
 THRUSTSHAFT } Thrust Disc. LLOYD'S GEN. SS106 29.11.63-B.T.-

**GEARING**

INTERMEDIATE SHAFTS S.1142 GEN. G.M. 1/7/64.  
 SCREW AND TUBE SHAFTS S.1151 GEN. G.M. 26.6.64 - Spare:- S.1153 GEN. G.M. 22.7.64.  
 PROPELLERS GEN. Cert.No.C.24497. P.1063 G.M. 3.9.64

OTHER IMPORTANT ITEMS Exhaust gas driven scavenge blowers - GENOA Cert.M.7121.

M.E. crossheads. LLOYD'S GEN. 1057/1, 1057/2, 1057/3, 1057/4, 1071/1, 481/5, (two), 482/4, 483/4 - 9.4.64

Is the installation a duplicate of a previous case?  yes If so, state name of vessel ANSALDO YARD No.1593 - "LEONARDO DA VINCI"

Date of approval of plans for crankshaft 27/8/62 Straight shafting 23/10/62 Gearing - Clutch -

Separate oil fuel tanks 25/10/63 Pumping arrangements 12/3/63 Oil fuel arrangements 30/3/62

Cargo oil pumping arrangements 5/4/62 Air receivers 14/8/62 Aux. ~~boiler~~ boilers Oil fired: 24/18/64  
 Exhaust gas: 18/18/64

Dates of examination of principal parts:-  
 Fitting of stern tube 16/7/64 Fitting of propeller 12/10/64 Completion of sea connections 19/7/64 Alignment of crankshaft in main bearings 8/9/64  
 Engine chocks & bolts 14/11/64 Alignment of gearing - Alignment of straight shafting 14/11/64 Testing of pumping arrangements 8/12/64  
 Oil fuel lines 23/11/64 Aux. ~~boiler~~ boiler supports 2/9/64 Steering machinery 1/12/64 Windlass 1/12/64

Date of Committee **FRIDAY 19 MAR 1965**

Decision **+LMC ES**  
**ABS**  
**SPS**  
**TS(CL)** } **12-64**

Special Survey Fee **DURING CONSTRUCTION**  
 Lit. 1,391.250 plus fee for vel  
 Lit. 97.090 = Lit. 1,488.34  
 - Actual Exps = Lit. 6.75  
 R.T. (See our A/c N: 7382 dd. H/)

**Expenses FEE DURING INSTALLATION**  
 Lit. 200.000  
 Exps (See Rpt 1)  
 Date when A/c rendered 20/1/1965

