

Rpt. 4b

Date of writing report 26/6 1958

Survey held at Norrköping

Received London Port of Stockholm

No. of visits In shops 23 On vessel

No. 11581

First date 20.5.57 Last date 14.2.1958

19.8.57 10.4.1958

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 42388 Name m/s "CECILIA FALKLAND" Gross tons 3211

Owners Rederi A/B Wallen Managers Axel Falkland Port of Registry Helsingborg

Hull built at Norrköping By A/B Norrköpings Varv & Verkstad Yard No. 158 Year Month 1958 4

Main Engines made at Trollhättan By Nydqvist & Holm A/B Eng. No. 1697 When 1957

Gearing made at - By - Blr. Nos. - When -

Donkey boilers made at - By - When -

Machinery installed at Norrköping By A/B Norrköpings Varv & Verkstad When 1958 4

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? Yes Is ship intended to carry petroleum in bulk? No

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? in E.R. Top platform 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 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 Direct driven propeller by diesel engine.

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

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?

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 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 hull top or to a built-up seating? B.U. 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 1/9/58 354V. 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

Weight Are balance weights fitted? Total weight Radius of gyration

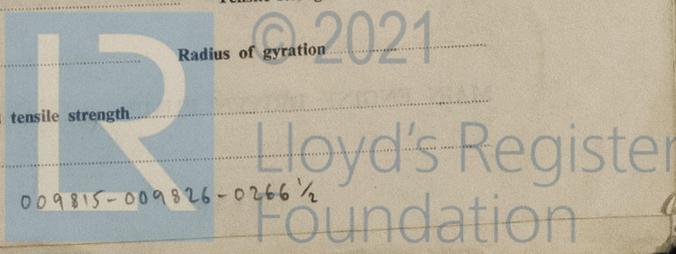
Diameter of flywheel Diameter of flywheel shaft Material Minimum approved tensile strength

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

SEE GOT. RPT. No 23548

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24/7/58

7E in line



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 _____ See Got. Rpt. No. 23548 Material _____ Minimum approved tensile strength _____

Shaft separate or integral with crank or wheel shaft? _____ Diameter of intermediate shaft _____ 230 mm Material S.M. Steel
 Minimum approved tensile strength As per rule _____ Diameter of screwshaft cone at large end _____ 275 mm Is screwshaft fitted with a continuous liner? _____ Yes
 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 _____ and _____ Thickness between bearings _____ 17.5 mm Material of screw/tube shaft _____ S.M. Steel Minimum approved tensile strength _____ As per
 Is an approved oil gland fitted? _____ No If so, state type _____ Length of bearing next to and supporting propeller _____ 3830 mm.
 Material of bearing _____ Lig. Vit. 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 _____ 3100 mm Pitch _____ 2200 mm Built up or solid _____ Solid Total developed surface _____ 58 %

No. of blades _____ 4 Blade thickness at top of root fillet _____ 125 mm Blade material _____ Bronze Moment of inertia of dry propeller _____ 5940 kgm^2
 If propeller is of special design, state type _____ No Is propeller of reversible pitch type? _____ No If so, is it of approved design? _____
 State method of control _____ Material of spare propeller _____ Cast Steel Moment of inertia _____ 5705 kgm^2

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) _____ Port Side in E.R. 2 off. main 78 m³/h.
 El. driven Sou. No. D.10695-96. 1 Aux. platform top E.R. aft 13.4 C.ft./min. Diesel Eng. Sou. D. 10519.
 No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) _____ 2 x 4 m³ port forw., 1 x 40 litres Stbd. aft.
 See Got. Rpt. 23548 (2 off Main) 1 Aux. Got. Cert. No. 22885.
 How are receivers first charged? _____ Hand operated compressor Maximum working pressure of starting air system _____ 25 kg/cm² Are the safety devices in accordance with the Rules? _____ Yes Has the starting of the main engines been tested and found satisfactory? _____ Yes

COOLERS. No. of main engine fresh water coolers _____ 2 No. of main engine lubricating oil coolers _____ 1

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	EM Bilge	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	Sea
Main Bilge Pump ER. Stbd. El. motor 70 t/h.	X	X															X
Ballast Pump ER. Stbd. El. motor 100 t/h.	X		X	X		X											X
Cooling S.W. Pump ER. Port S. El. motor 163 t/h.						X			X		X						X
Tire Pumps ER. Port S. (2 off) El. motor						X									X		
Cooling F.W. Pump ER. Port S. El. motor					X							X					
Spare Cooling S.W. & E.W. ER Port El. motor					X	X					X	X					
Auxiliary Cooling F.W. ER Port El. motor					X							X					
O.F. Transfer P. ER. Forw. El. motor				X									X				
Lub. Oil P. M.E. ER Stbd. (2 off) El. motor									X						X	X	
Pressure pump steering gear Steer. gear room. El. motor																	
Emergency Fire Pump Steer. gear room. Oil eng.						X								X			

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room No. 1 2 x 3 1/2", No. 2 Forw. 2 x 3 1/2", Aft. 2 x 3 1/2".

No. and size connected to main bilge line in main engine room 1 x 3" Stbd. Forw., 1 x 3" Port Aft. In tunnel

In aux. engine room Size and position of direct bilge suction in machinery spaces 1 x 4" Port Forw.

1 x 4" Stbd. Aft. Size and position of emergency bilge suction in machinery spaces 6" Port Side. Middle.

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 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)
Stbd. Aft ER. (No.1)	Diesel Eng.	Ruston	Not. Cert. No. 25904	180 KVA. Each.
Stbd. Forw. ER. (No.2)	"	"		
Port Side ER. (No.3)	"	"		
Harbour Gen. Platform Top E.R.	"	"	Not. Cert. No. 26302	38 KVA.

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 180 KVA. Is an electric generator driven by Main Engine? No.

STEAM INSTALLATION. No. of donkey boilers burning oil fuel _____ W.P. _____ Type _____
 Position One heat water boiler only for heating purposes not classed O.F.

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

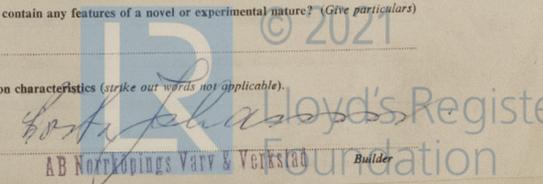
Is steam essential for operation of the ship at sea? No Are any steam pipes over 3 ins. bore? _____ If so, what is their material? _____ For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? Yes No. of oil burning pressure units _____ One No. of steam condensers _____ No. of Evaporators _____

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Electric-Hydraulic and hand operated hydraulic "SVENDBORG" type 110/9 LR., one el. driven pump P 9-326.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements Sufficient water jets, Total flooding in cargo holds and E.R. APPR. Sufficient portable extinguishers (Arrangement to Swedish B.O.T. Req.)

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 10th April, 1958. 6 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).



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 as herein described has been constructed and installed under Special Survey in accordance with The Rules, approved plans and the Secretary's letters. The material and workmanship are good. The main engine and all auxiliaries have been tested during a trial trip and found satisfactory. The machinery is eligible, in my opinion, to be classed with the notation of +LMC 4.58 (strengthened for navigation in ice) and TS/CL, (subject to the main engine not being run continuously below 77 r.p.m.)

(not required for classification purposes)

Note:- The Owners wish to adopt the Continuous Survey system for the machinery of this ship.

[Signature]
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 } See Got. Rpt. 23548.
 THRUSTSHAFT }
 GEARING }
 INTERMEDIATE SHAFTS LLOYDS HNO. No. 616 KN. 26.7.57.
 SCREW AND TUBE SHAFTS Fitted:- LLOYDS HNO. No. 614 26.7.57., Spare:- LLOYDS HNO. No. 615 KN. 22.7.57.
 PROPELLERS Fitted Bronze:- LLOYDS HAM. No. 367/57 30.8.57 H.Ka., Spare:- LLOYDS HAM. No. 1566/57 24.8.57 H

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 2.8.1956 Gearing Clutch
 Separate oil fuel tanks Pumping arrangements 14.12.1956 & 5.4.1957. Oil fuel arrangements 5.4.1957.
 Cargo oil pumping arrangements Air receivers Donkey boilers
 Dates of examination of principal parts:-
 Fitting of stern tube 1.10.57 Fitting of propeller 4.10.57 Completion of sea connections 10.10.57 Alignment of crankshaft in main bearings 18.12.57
 Engine checks & bolts 10.12.57 Alignment of gearing Alignment of straight shafting 18.12.57 Testing of pumping arrangements 20.3.
 Oil fuel lines 1.4.58 Donkey boiler supports Steering machinery 10.4.1958 Windlass 10.4.1958
 Date of Committee TUESDAY 19 AUG 1958 Installation Special Survey Fee Kr. 1.860:--
 Decision *LMC* Expenses Kr. 1.148:--
oil Eng
CL
ES 4.58

