

Rpt. 4b

Date of writing report
11/6 1959

Received London
15 JUN 1959

Port
of Stockholm

No.
12047

Survey held at
Gävle

No. of visits
In shops
8

First date
9.6.58

Last date
18.2.59

On vessel
23

First date
13.8.58

Last date
28.4.59

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B.
92246

Name
Twin Screw Motorship "ALDAN"

Gross tons
1500

Owners
U.S.S.R.

Managers
-

Port of Registry
Leningrad

Hull built at
Gävle

By
A/B Gävle Varv

Yard No.
100

Year Month When
1959 4

Main Engines made at
Hamburg

By
Maschinenfabrik Augsburg-Nürnberg

Eng. No.
s. 405252-53

Year Month When
1958 9

Steering gear
Sävsjö, Sweden

By
A/B Vatten och Ånga

Donkey boilers made at
Sävsjö, Sweden

By
A/B Vatten och Ånga

Blr. Nos.
25306

Year Month When
1958

Machinery installed at
Gävle

By
A/B Gävle Varv

Year Month When
1959 4

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo if installation is required

Is ship to be classed for navigation in ice?
Yes

Is ship intended to carry petroleum in bulk?
No

Is refrigerating machinery fitted?
Domestic only

If so, is it for cargo purposes?
No

Type of refrigerant

Is the refrigerating machinery compartment isolated from the propelling machinery space?

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
2

No. of propellers
2

Brief description of propulsion system
2 engines - 2 screw shafts - 2 alternating pitch propeller units

MAIN RECIPROCATING ENGINES. Licence Name and Type No. MAN type G40V 40/60 (with supercharging)

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

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 tank top or to a built-up seating?

Tank Top

How is the engine started?

Compressed air

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 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

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)

~~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 (A small diagram should be attached showing gas cycle.)	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.)~~

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
Material of pinions	Tensile strength	Main
Are gear teeth surface hardened?	How are teeth finished?	Material of wheel rims
journals	Are the wheels of welded construction?	Tensile strength
of welding?	Where is the propeller thrust bearing located?	Diameter of pinion journals
		Wheel shaft
		Is gearcase of welded construction?
		Has the wheel/gearcase been heat treated on completion
		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 280 mm ✓ Material SM-steel Minimum approved tensile strength 50 kg/mm²

Shaft separate or integral with crank or wheel shaft? Separate Diameter of intermediate shaft 210 mm Material SM-Steel

Minimum approved tensile strength 44 kg/mm² Diameter of screwshaft 240 mm with 80 mm ✓ Is screwshaft fitted with a continuous liner? No

bearing _____ Thickness of bearing bracket _____ Material of screw _____ SM-Steel _____ Minimum approved tensile strength 44 kg/cm²
 Is an approved oil gland fitted? Yes If so, state type Cedervall Length of bearing next to and supporting propeller ✓ 1000 mm
 Material of bearing White metal In multiple screw vessels is the liner between stern tube and A bracket continuous? Yes If not, is the exposed length of shafting between
 liners readily visible in dry dock? -

PROPELLER. Diameter of propeller 2500 mm Pitch Variable Built up or solid - Total developed surface -

No. of blades 3 Blade thickness at top of root fillet - Blade material Stainless Steel Moment of inertia of dry propeller 2720 kgm²

If propeller is of special design, state type KAMEWA Is propeller of reversible pitch type? Yes If so, is it of approved design? Yes

State method of control Hydraulic Material of spare propeller blades, stainless steel Moment of inertia -

INDEPENDENT PUMPS

Name below essential pumps, state position and how driven. Give capacity of bilge pumps.

how driven. Give capacity of bilge pumps.	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Water Cooling	Sea	Feed Tanks	Lub. Oil	pitch prop. units	Boiler Feed	Water Cooling	Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	pitch prop. units	Sea
Electr. driven																		
Bilge pump, s.s., 80 m ³ /h.	x	x	x			x												x
Electr. driven																		
Ballast pump, s.s., 100 m ³ /h	x	x	x	x		x							x					x
Electr. driven Fire pump s.s.						x								x				
Diesel driven Emerg. fire pump; steer.gear compartm.						x								x				
Electr. driven																		
O.F. transfer pump, p.s.				x									x					
Electr. driven																		
2 lub.oil standby pumps, p.s.								x							x			
El.driv.port,centre & stbd fwd.																		
3 main cool.w.pumps(SW & fr.w)					x	x					x	x						x
El.dr.2 standby cool.w.pumps(SW&fr.w) for aux.engs in ME room, p.s.aft.					x	x					x	x						
El.dr. 1 standby cool.w.pump for aux.engs.in aux. E.R.						x					x							x
El.dr.2 standby lub.oil pumps for altern. pitch prop. units, p&s									x								x	
Steam driven Donkey Boiler feed pump, s.s.							x			x								
El. driven																		
D.B. feed pump, s.s.							x			x								

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room. No. 1 hold: 2 off 2". - Provision store: 1 off 2½" + 1 off 2".

Compressor room: 2 off 3". - Salv. pump room: 2 off 2". - No. 2 hold: 2 off 2 1/2".

No. and size connected to main bilge line in main engine room. 3 off 3" + 2 off 2". Coff.dams: 1 off 3" in each In tunnel 2 off 2" + 1 off 2½"

In aux. engine room..... 2 off 3"..... ME room: Size and position of direct bilge suctions in machinery spaces 1 off 4" at fwd. end.-

1 off 5" at aft end.- 1 off 4" in aux. ER. Size and position of emergency bilge suction in machinery spaces See direct suction above.

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

STEAM & OIL ENGINE AUXILIARIES

[illegible]

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 generator, 200 KVA Is an electric generator driven by Main Engine? No

STEAM INSTALLATION. No. of donkey boilers burning oil fuel 1 w.p. 85 lbs/sq.in. Type Single ended multitubular "Univex"

Position in a separate compartment on starboard side in aux. eng. room.

Is a superheater fitted? No Are these boilers also heated by exhaust gas? No No. of donkey boilers heated by exhaust gas only? None WEP

Type	Position	Can the exhaust heated boilers deliver steam directly to
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
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96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

Do steam tugs or dr. they operate only as tugs and haulers in conjunction with oil lined rollers?

boiler **Gothenburg No. 24200** Is steam essential for operation of the ship at sea? **No** Are any steam pipes over 3 ins. bore? **No**

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

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Maker: A/S Svendborg Skibsvaerft; Type

140/13 BGR⁴; 1 hydr. pump electr. driven with double pipes to steering gear; 1 hand operated hydr. pump in

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. 16.4.1959. - 5 hours

Does this machinery installation contain any features of a novel or experimental nature? (Give particulars)

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*).

Aktionen und Güter von...

0250 2/2

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 vessel has been installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters, and tested under working conditions on trial trip and found satisfactory.

The workmanship and materials are good.

The machinery of this vessel is eligible, in our opinion, to be classed in the Register Book with the record of +LMC 4.59 and OG., and with the notation "Strengthened for Navigation in Ice", the engines not to be operated continuously between 80 and 100 r.p.m.

For J. Lager and self. J. Eriksberg.

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 Hamburg report No. 6876

CRANKSHAFT OR ROTOR SHAFT Hamburg report No. 6876.

FLYWHEEL SHAFT

Port:- LLOYD'S Dtm. J.L. 746 31.7.57. HAM. 8.11.57. H.Ka.

THRUST SHAFT

Starb:- LLOYD'S Dtm. J.L. 746A 31.7.57 HAM. 8.11.57. H.Ka.

GEARING

Port:- LLOYD'S SKM No. 915 KE 9.6.58 DTM J.L. 14.9.57.

LLOYD'S Got. No. 905 BJ 30.7.58.

Starb:- LLOYD'S SKM No. 861 KE 9.6.58 DTM JL 4.9.57.

INTERMEDIATE SHAFTS

Starb:- LLOYD'S Got. No. 905 BJ 30.7.58.

SCREW AND TUBE SHAFTS

Port:- LLOYD'S Got. No. 832 BJ 30.7.58.

Starb:- LLOYD'S Got. No. 834 BJ 30.7.58.

PROPELLERS

Please see Got. cert. No. 24895 attached hereto.

OTHER IMPORTANT ITEMS OK - couplings between screw shafts and intermediate shafts:-

Port side:- LLOYD'S SKM No. 8750 S.W. 23.9.57.

Starb. side:- LLOYD'S SKM No. 8745 S.W. 23.9.57.

Is the installation a duplicate of a previous case?

Yes

If so, state name of vessel

"PAMIR"

Date of approval of plans for crankshaft

See HAM. certs
Nos. 58/708 & 709

Straight shafting

18.4.1957

Cranks

Cranks

Separate oil fuel tanks

20.1.58 & 1.3.58.

Pumping arrangements

19.10.57.

Oil fuel arrangements

19.10.57.

Cargo oil pumping arrangements

Air receivers

See HAM cert. No.
58/453 & AUG. certs. Nos.
58/920 & 58/1195

Donkey boilers

See Got. rpt. No. 242

Dates of examination of principal parts:-

Fitting of stern tube

13-14.8.58

Fitting of propeller

20.8.58

Completion of sea connections

28.8.58

Alignment of crankshaft in main bearings

16.9.58

Engine checks & bolts

10.9.58

Alignment of gearing

Alignment of straight shafting

16.9.58

Testing of pumping arrangements

22.4.59

Oil fuel lines

23.4.59

Donkey boiler supports

13.8.58

Steering machinery

and

Windlass

working 16.4.59.

Date of Committee

FRIDAY 24 JUL 1959

Special Survey Fee

Kr. 2.790:--

Decision

See Rpt. 1.

Special

Att.

Fee

Kr. 85:--

Expenses

Kr. 1.186:--

Date when A/c rendered

11/6 1959.

