

Rpt. 4b

26 NOV 1958

16910.

Date of writing report 27-6-58 Received London Port Copenhagen No. 26-6-58  
Survey held at Copenhagen & Nakskov No. of visits In shops 29 First date 21-2-58 Last date 23-10-58  
On vessel 32

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name m.t. "ANNAM" Gross tons 12499  
Owners A/S Det Østasiatisk Kompagni Managers Port of Registry Copenhagen Year Month  
Hull built at Nakskov By Nakskov Skibsværft Yard No. 150 When 1958-10  
Main Engines made at Copenhagen By Burmeister & Wain Eng. No. 6230 When 1958-6  
Gearing made at No gearing By Wrights Forge & Eng. Co. Ltd. J.2024 1958-7  
Donkey boilers made at Aalborg By Aalborg Værft A/S Blr. Nos. 1586-87 When 1958-6  
Machinery installed at Nakskov By Nakskov Skibsværft When 1958-10  
Particulars of restricted service of ship, if limited for classification none  
Particulars of vegetable or similar cargo oil notation, if required none

Is ship to be classed for navigation in ice? no Is ship intended to carry petroleum in bulk? yes  
Is refrigerating machinery fitted? yes If so, is it for cargo purposes? no Type of refrigerant C Cl<sub>2</sub> F<sub>2</sub>  
Is the refrigerating machinery compartment isolated from the propelling machinery space? yes 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 1 No. of propellers 1 Brief description of propulsion system Reversible, heavy oil eng. Direct to propeller.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. B&W-Dm 874 VTBF-160, Turbocharged, crosshead type, solid injection

No. of cylinders per engine 8 Dia. of cylinders 740 mm stroke 1600 mm 2 or 4 stroke cycle 2 Single or double acting single

Maximum approved BHP per engine 10000 at 115 RPM of engine and 115 RPM of propeller.

Corresponding MIP 7.9 kg/cm<sup>2</sup> (For DA engines give MIP top & bottom) Maximum cylinder pressure 55 kg/cm<sup>2</sup> Machinery numeral 2000

Are the cylinders arranged in Vee or other special formation? no 100% Number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? no valve in the cyl. cover No. and type of mechanically driven scavenge pumps or blowers per engine and how driven none

No. of exhaust gas driven scavenge blowers per engine 2 Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? yes

If a stand-by or emergency pump or blower is fitted, state how driven electrically driven No. of scavenge air coolers 2 Scavenge air pressure at full power 0.42 kg/cm<sup>2</sup> Are scavenge manifold explosion relief valves fitted? yes

FOUR STROKE ENGINES. Is the engine supercharged? No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharge?

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel 2 Inlet cyl. Exhaust 1 Starting 1 Safety 1

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

Cooling medium for: Cylinders fresh water Pistons lub. oil Fuel valves fuel oil

Is the crankcase separated from the underside of pistons? yes Is the engine of crosshead or trunk piston type? type Total internal volume of crankcase 156 m<sup>3</sup> No. and total area of explosion relief devices 17-9000 cm<sup>2</sup> Are flame guards or traps fitted to relief devices? no Is the crankcase readily accessible? yes

Is the engine secured directly to the tank top or bulkhead? yes How is the engine started? by compressed air

Can the engine be directly reversed? yes

Has the engine been tested working in the shop? yes How long at full power? 6 hours

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 23-1-58 State barred speed range(s), if imposed for working propeller none For spare propeller none Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

No. of main bearings 10 Are main bearings of ball or roller type? no Distance between inner edges of bearings in way of crank 958 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines

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

Diameter of journals 550 mm Diameter of crankpins 115 mm centr. hole 115 mm centr. hole Axial thickness of webs 335/280 mm Pins SM-Steel Minimum 44 kg/mm<sup>2</sup>

If shrunk, radial thickness around eyeholes 320/300 mm Are dowel pins fitted? no Crankshaft material Journals SM-Steel Approved

Web SM-Steel Tensile strength

WD<sup>2</sup> Diameter of flywheel 4400 kgm<sup>2</sup> Weight 26300 kgm<sup>2</sup> Are balance weights fitted? yes Total weight

Diameter of flywheel shaft 500 mm Material SM-Steel Minimum approved tensile strength 44 kg/mm<sup>2</sup>

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







(I) Electr. driven (II) INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps. (III) Steam turbine driven (IV) Oil engine driven	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	SEA
Engine Room forward																
(I) Oil fuel transfer			X	X		X						X				X
Engine Room port																
(III) Butterworth & fire						X							X			
(II) Two feed pumps							X		X							
(II) One feed pump							X		X							
(I) Cond. circ. & SW for ME		X				X				X						
(I) SW & FW cooling f. ME		X			X	X				X	X					
(I) FW cooling for ME					X						X					
(I) Lub. oil pump								X						X	X	
Engine Room stbd.																
(I) Fire & bilge 2x20 tons/h	X					X							X			X
(I) Ballast 80-180 tons/h	X	X	X			X						X				X
(I) SW cooling for aux. engs.						X				X						
(I) FW cooling for aux. engs.					X						X					
Boiler Room																
(I) Two feed pumps							X		X							
(I) Oil feed pump			X													
(II) Unit pressure pumps			X													
Forw. end of ship																
(II) Oil fuel transfer			X									X				
(II) Ballast 80 tons/h	X	X	X		X							X				X
(IV) Fire pump					X								X			

BILGE SUCTIONS. No. and size ~~XXXXXX~~ Forward end of ship: 3-3 ins. fine pump

No. and size connected to main bilge line in main engine room 5-2 1/2 ins. (include 2 C.P.)

~~XXXXXX~~ Size and position of direct bilge suction in machinery spaces Port: -

1-3 1/2 ins. Stbd.: 1-5 ins. Aft: 1-5 ins. Size and position of emergency bilge suction in machinery spaces Port: 1-8 ins.

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, ~~XXXXXX~~ 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)
Engine Room		Burmeister		
Stbd. forward	heavy oil	& Wain	Cpn. Rpt. No. 16910	250 KVA generator ✓
Stbd. aft	" "	" "	" " " 16910	250 KVA " " ✓
Port	steam turbine	A/S Atlas	" " " 16910	350 KVA " " ✓
Forward end of ship	heavy oil N° 408001	Ruston & Hornsby	Not. Cert. No. 24411	2 fire pumps ✓
	PAZ 1	Petter	Run 751970	Compressor

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 1

Is an electric generator driven by Main Engine? no

STEAM INSTALLATION. No. of donkey boilers burning oil fuel 2 Prim. 50 kg/cm<sup>2</sup> Water tube with indirect evaporation in sec. system

Position In a separate boiler room abaft the engine room

Is a superheater fitted? yes Are these boilers also heated by exhaust gas? no No. of donkey boilers heated by exhaust gas 1 w.p. 12 kg/cm<sup>2</sup> and oil fired

Type Spanner Position in funnel Can the exhaust heated boilers deliver steam directly to the steam range yes Port and No. of report on donkey boilers Cpn. 16910

Is steam essential for operation of the ship at sea? no Are any steam pipes over 3 ins. bore? yes If so, what is their material? Copper & Steel

For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? yes No. of oil burning pressure units 3 No. of steam condensers 1 No. of Evaporators (Atlas Freshwater Generator) 1

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) 2-25 HP AC motors Nos. 189839-840

(Hugh J. Scott & Co. Belfast) and 2-hydraulic pumps Nos. K 10271-72 (J. Hastie & Co., Greenock)

Have the Rule Requirements for fire extinguishing arrangements been complied with? yes Brief description of arrangements 16 hydrants, 2-200 litres

froth tanks, CO<sub>2</sub> installation, Steam extinguishing, 1-45 litres and 19 portable extinguishers.

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 23/10-1958, 12 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)



AKTIESELSKABET  
NAKSKOV SKIBSVÆRFT  
C. Tougaard

BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI  
Builder

0147 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 has been constructed and installed under special survey in accordance with the Rules, approved plans and Secretary's letters.

The material has been tested as required by the Rules and the workmanship is good.

The machinery is in our opinion eligible to be classed with the notations

+LMC 10/58, Oil engine, CL, 2 WTDB (Spt.) Primary 710 lbs. Secondary 170 lbs.,

1 DB 170 lbs.

Note:- Interim certificate issued. Copy attached.

*K. Hansen*  
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 Piston rods:- Lloyd's Cpn. Nos. 3893-3894-3895 VL 28-4-58

Connecting rods:- Lloyd's Cpn. Nos. 3890-3892 VL 28-4-58

CRANKSHAFT OR ROTOKSHAF Forw.  $\frac{1}{2}$  length:- Lloyd's Cpn. No. 3900 VL 29-4-58

~~KEYHOLE SHAFT~~ Aft  $\frac{1}{2}$  length:- Lloyd's Cpn. No. 3901 VL 29-4-58

THRUSTSHAFT Lloyd's Cpn. No. 3902 VL 29-4-58

~~GEARING~~

INTERMEDIATE SHAFTS Lloyd's Cpn. Nos. 3621 (V.H.K. 2-12-57) & 3824 V.L. 31-3-58

SCREW ~~AND TUBE~~ SHAFTS Lloyd's Cpn. Nos. 3639 (working) & 3638 (spare) VL 12-12-57

## PROPELLERS

OTHER IMPORTANT ITEMS Crossheads:- Lloyd's Cpn. Nos. 3908-3942 VL. 5-5 & 24-5-58

Pistons:- Lloyd's Test Cpn. 5 Atm. VL 21-2 & 30-4-58

Cylinder liners & jackets:- Lloyd's Test Cpn. 7 Atm. VL 21-5-58

Cylinder covers:- Lloyd's Test Cpn. 10 Atm. VL 19-5-58

Is the installation a duplicate of a previous case? NO

If so, state name of vessel -

Date of approval of plans for crankshaft 19-7-57

Straight shafting 13-11-57

Gearing -

Clutch -

Separate oil fuel tanks 5-7-57

Pumping arrangements 9-10-57

Oil fuel arrangements -

Cargo oil pumping arrangements 16-10-58

Air receivers 18-8-56

Donkey boilers W.T. 7-11-57

Dates of examination of principal parts:-

Fitting of stern tube 11-6-58

Fitting of propeller 17-6-58

Completion of sea connections 11-6-58

Alignment of crank shaft in main bearings 22-7-58

Engine chocks & bolts 29-7-58

Alignment of gearing -

Alignment of straight shafting 5-8-58

Testing of pumping arrangements 16-10-58

Oil fuel lines -

Donkey boiler supports 17-10-58

Steering machinery 23-10-58

Windlass 23-10-58

Date of Committee

FRIDAY 19 DEC 1958

Decision

See Rpt. 1

Special Survey Fee

Construction kr. 6660,-

Installation kr. 3660,-

Expenses kr. 1430,-

Date when A/c rendered

28 1958 & 10/11 1958

ENTERED IN COPENHAGEN ROUGH FEE BOOK ON THE

31/7 1958

ENTERED IN COPENHAGEN ROUGH FEE BOOK ON THE

10/11 1958