

Rpt. 4b

Date of writing report 10 OCT. 1959.

Received London

Port DJAKARTA

No. 3660

Survey held at TANDJONG PIRIK

No. of visits

In shops

On vessel

25

First date

13 APRIL

Last date

9 OCT.

1959.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 32517 Name m.v. "TANDJUNG TORAWITAN" (EX. "IVAN GONTCHAROS") Gross tons 1712

Owners REPUBLIK INDONESIA Managers P.E.L.N.I. Port of Registry DJAKARTA

Hull built at TAMISE, BELGIUM By JOS BOEL & SONS LTD Yard No. 1229 When 1951

Main Engines made at AMSTERDAM By WERKSPOOR N.V. Eng. No. 1215 When 1951

Gearing made at ZURICH By MAAG

Donkey boilers made at ANNAN SCOTLAND By COCHRANE & CO, LTD Blr. Nos. 18618 When 1951

Machinery installed at TAMISE By JOS BOEL & SONS LTD When 1951

Particulars of restricted service of ship, if limited for classification INDONESIAN ARCHIPELAGO

Particulars of vegetable or similar cargo oil notation, if required NOT REQUIRED

Is ship to be classed for navigation in ice? NO 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 FREON

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 ONE No. of propellers ONE Brief description of propulsion system SINGLE REDUCTION GEARING

MAIN RECIPROCATING ENGINES. Licence Name and Type No. WERKSPOOR TYPE TMABS 398 Supercharged

No. of cylinders per engine 8 Dia. of cylinders 390 mm stroke(s) 680 mm 2 or 4 stroke cycle 4 Single or double acting SNGL

Maximum approved BHP per engine 1700 at 275 RPM of engine and 112.6 RPM of propeller.

Corresponding MIP 9.98 Kg/Cm2 (For DA engines give MIP top & bottom) Maximum cylinder pressure 60 Kg/Cm2 Machinery numeral 340

Are the cylinders arranged in Vee or other special formation? NO 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? YES Are the undersides of the pistons arranged as supercharge pumps? NO No. of exhaust gas driven blowers per engine ONE No. of supercharge air coolers per engine NONE Supercharge air pressure 35 Kg/Cm2 Can engine operate without supercharger? ----

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

Material of cylinder covers CAST IRON Material of piston crowns CAST IRON (NOT NOW USED) Is the engine equipped to operate on heavy fuel oil? YES (not used)

Cooling medium for :—Cylinders WATER Pistons LUB.OIL Fuel valves FUEL 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? NO Is the engine of crosshead or trunk piston type? TRUNK Total internal volume of crankcase ---- No. and total area of explosion relief devices 8-963 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? NO Is the engine secured directly to the tank top or to a built-up seating? TANK TOP How is the engine started? COMP. AIR

Can the engine be directly reversed? YES 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 22-9-1958 State barred speed range(s), if imposed

MAIN ENG. R.P.M. For working propeller Below 90 For spare propeller BELOW 90 Is a governor fitted? YES Is a torsional vibration damper or detuner fitted to the shafting? NO

Where positioned? X9- ---- Type 495- mm No. of main bearings 9 Are main bearings of ball or roller type? NO Distance between inner edges of bearings in way of crank(s) 495 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines ----

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

Diameter of journals 310 mm Diameter of crankpins Centre 300 mm (WITH 155 mm DIAM. CENTRAL HOLES). Breadth of webs at mid-throw 500 mm Axial thickness of webs 125 mm

If shrunk, radial thickness around eyeholes ---- Are dowel pins fitted? ---- Crankshaft material Journals STEEL Pins STEEL Minimum Tensile strength

Diameter of flywheel 1500 mm Weight 1240 Kg Are balance weights fitted? No 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) FITTED AT COUPLINGS OF CRANK & PINION SHAFTS

013008-013017-0049 1/2

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? SINGLE If single, position of gear thrust bearing NO THRUST BEARING Is gearing of epicyclic type? YES
 PCD of pinions: First reduction _____ Second reduction _____ PCD of wheels: First reduction _____ Main _____
 Material of pinions STEEL Tensile strength _____ Material of wheel rims STEEL Tensile strength _____
 Are gear teeth surface hardened? _____ How are teeth finished? _____ Diameter of pinion journals 300 mm Wheel shaft journals 300 mm Are the wheels of welded construction? NO Is gearcase of welded construction? NO Has the wheel/gearcase been heat treated on completion of welding? _____ Where is the propeller thrust bearing located? AFT OF GEARING Are gear bearings of ball or roller type? NO

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. NONE

Can the main engine be used for purposes other than propulsion when declutched? _____ If so, what? _____

STRAIGHT SHAFTING. Diameter of thrustshaft 280 mm Material STEEL Minimum approved tensile strength _____
 Shaft separate or integral with crank or wheel shaft? SEPARATE Diameter of intermediate shaft 260 mm Material STEEL
 Minimum approved tensile strength _____ Diameter of screwshaft cone at large end 305 mm Is screwshaft fitted with a continuous liner? YES
 Diameter of tube shaft. (If these are separate shafts) NONE Is tube shaft fitted with a continuous liner in way of stern tube? _____ Thickness of screw/tube shaft liner at bearings 17.5 & 18 mm Thickness between bearings 13.5 mm Material of screw/tube shaft STEEL Minimum approved tensile strength _____
 Is an approved oil gland fitted? NO If so, state type _____ Length of bearing next to and supporting propeller 1230 mm
 Material of bearing LIGNUM VITEA 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 4000 mm Pitch 3600 mm Built up or solid SOLID Total developed surface 4.933 M2
 No. of blades 4 Blade thickness at top of root fillet 148.8 mm Blade material BRONZE Moment of inertia of dry propeller _____
 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 IRON Moment of inertia _____

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine NONE Can they be declutched? _____
 No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) TWO. 84 CU MTRS. PER HR. EACH.
 CLUTCH DRIVEN BY FORWD. INBD. AND FORWD. OUTBD. AUXILIARY ENGINES. HAMWORTHY, POOLE, ENGLAND. Nos. 86542 and 86543

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate)
 TWO MAIN (UPPER AND LOWER PORT SIDE) 2.5 CU. METRES EACH.
 FOUR AUXILIARY (FORWD. UPPER, FORWD. LOWER, AFT. UPPER, AFT. LOWER, PORT SIDE) TOTAL 0.2 CU. MTRS.
 How are receivers first charged? MANUAL COMPR. 2-STAGE Maximum working pressure of starting air system 30 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 ONE No. of main engine lubricating oil coolers ONE

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure 2 M.E. SETT. TKS. (AFT. E.R.P.&S. INBD); 2 M.E. DAILY SERVICE TKS. (ENG. RM. TOP, FORWD. P & S); 2 AUX. ENG. DAILY SERVICE TKS. (ENG. RM. TOP, PORT SIDE, FORWD. & AFT); 2 BLR. OIL DAILY SERVICE TKS. (ENG. RM. TOP, STBD. SIDE, FORWD. AFT).

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) NONE ON MAIN ENGINE. ONE DRIVEN BY MAIN ENGINE

REDUCTION GEARING FOR LUBRICATION OF REDUCTION GEARING. _____

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										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
BALLST. (FORWD.S) E.D.	X	X	X			X				X	X				
BILGE/G.S (AFT.S) E.D.	X	X	X			X									
M.E.S.W. COOL (MID.S) E.D.		X				X				X	X				
M.E.F.W. COOL (INBD.S) E.D.		X			X		X			X	X				
FIRE/F.W. (A.PORT) E.D.		X			X	X	X			X	X		X		
FIRE/DK (OUTBD.S) E.D.					X					X	X				
LUB.OIL (M.E.GEAR) (P) E.D.								X						X	
LUB.OIL.2 (M.E.) (1&O.S) E.D.								X						X	X
O.F. TRANS. 2 (1&O.S) E.D.				X								X			
FD.PPS. 2 (UP & L.P) STM							X		X						
O.F. TRANS. (A.PORT) STM				X								X			
CAPACITY M. TONS PER HR. BALLST 80; BILGE/GS 60															

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room No.1 HOLD: 2-90 mm DIAM 70 mm
 No.2 HOLD: 2-90 mm DIAM. No.3 HOLD: 2-90 mm DIAM. (FORWD.) & 2-75 mm. (AFT.)
 No. and size connected to main bilge line in main engine room 1 P & 1 S-80 MM, 1 FORWD. C & 1 AFT. C-50 mm In tunnel 1-90 mm
 In aux. engine room NO AUX. ENG. ROOM Size and position of direct bilge suction in machinery spaces 2 PORT
 2 STBD. 150 mm DIAM Size and position of emergency bilge suction in machinery spaces 1 STBD. SIDE. 150 mm DIAM
 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? 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)
FORWD. OUTBD.	DIESEL ENGS.	LA MEUSE	CRANKSHAFT: LLOYD'S 2028 M.J. 17-10-50	65 KW) CLUTCH DRIVEN
FORWD. INBD.	4 CYL. 4 STR.	LA MEUSE	CRANKSHAFT: LLOYD'S 2029 M.J. 17-10-50	65 KW) STARTING AIR
AFT. OUTBD.	SINGLE ACT. DIESEL ENG.	LA MEUSE	CRANKSHAFT: LLOYD'S N.12.2041 MJ 23-11-50	65 KW) COMPRESSORS
AFT. INBD.	3 CYL. SA. 4 STR	LA MEUSE	CRANKSHAFT: LLOYD'S 1921 MJ 6-10-50	18 KW
ALL AUXILIARY ENGINES ON BOTTOM PLATFORM, PORT SIDE				

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 1-65 KW AT SEA Is an electric generator driven by Main Engine? NO
 2-65 KW ENTERING/LEAVING PORT Type COCHRANE COMPOSITE
 STEAM INSTALLATION. No. of donkey boilers burning oil fuel ONE W.P. 100 LB No. of donkey boilers heated by exhaust gas only? NONE W.P. _____
 Position ENGINE ROOM TOP, AFT
 Is a superheater fitted? NO Are these boilers also heated by exhaust gas? YES No. of donkey boilers heated by exhaust gas only? NONE W.P. _____
 Type _____ Position _____ 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? STM, DELIVERED TO STM, RANGE Port and No. of report on donkey boilers LLOYD'S No. 23416 Is steam essential for operation of the ship at sea? NO Are any steam pipes over 3 ins. bore? NO 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 1 GRAVITY No. of steam condensers ONE No. of Evaporators NONE
 STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) TEL-HYD, HASTIE & CO, GREENOCK
 ONE ELECTRIC MOTOR, HUGH J. SCOTT & CO, BELFAST
 Have the Rule Requirements for fire extinguishing arrangements been complied with? YES Brief description of arrangements CO2 45 RECEIVERS. TOTAL
 CAPACITY FOR HOLDS & ENG. ROOM 26,730 CU. FT & FIVE PORTABLE 2- GALL CHEMICAL
 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 _____ Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) NONE
 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.

Machinery built to Lloyd's Register of Shipping Classification and Survey

Not installed in vessel under Survey

Please see London letter 22nd September 1958, Eng.

Main Engine not to be operated continuously below 90 engine R.P.M. with either the working or spare propeller fitted.

The Main and auxiliary Machinery has been opened up, examined and found or placed in good condition.

The workmanship is good.

The Machinery of this vessel is eligible in my opinion to be classed with the Society, with Record of Classed + LMC 10,59; TS (CL) 8,59; and ES 10,59.

(Please see Report 9 regarding the Donkey Boiler).

(J.A.Boater).

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 LLOYD'S: 12292, 12293, 12293, 12293, 12294, 12295, 12295, KK 18-1-51

9907 KK 2-3-50

CRANKSHAFT ~~OR ROTOR SHAFT~~ LLOYD'S No. 12785. KK 2-3-51. C. 968. 38067 142 1904

FLYWHEEL SHAFT

THRUSTSHAFT LLOYD'S No. 12843. KK 8-3-51

GEARING (MAIN ENGINE SHAFT): LLOYD'S No. 1765. JNB 11-4-51. 21- 13550 D

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS (BRANZE, WORKING): LLOYD'S No. 2473. AVH 21-2-51 SCHROEF No. 45788

OTHER IMPORTANT ITEMS MAIN STARTING AIR RESERVOIRS

UPPER: LLOYD'S TEST No. 12609. 48 KG PER CM2 KG 20-2-51

LOWER: LLOYD'S TEST No. 12608. 48 KG PER CM2 KG 20-2-51

Is the installation a duplicate of a previous case? YES

If so, state name of vessel TANDJUNG DATU, RAYA

Date of approval of plans for crankshaft

Straight shafting

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 crankshaft 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

FRIDAY 11 DEC 1959

Decision

See Rpt. 1.

Special Survey Fee

CLASS 23.200.==

DBS 1.400.==

TS 1.000.==

Expenses

500.==

Date when A/c rendered

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