

Rpt. 4b/4f REPORT ON INSTALLATION OF INTERNAL COMBUSTION MACHINERY
(Inst) (Sheet 1)

Received London

FOR CONSIDERATION BY THE COMMITTEE OF LLOYD'S REGISTER OF SHIPPING

Note.—The particulars in this report are to 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 items are marked with an asterisk the particulars need not be repeated here if they have already been given on the relevant Rpt. 4b (Cons) or 4f (Cons). Wording not applicable to be cancelled.

Ship's Name **m.s. "BARTH".** Port **Groningen**
 Processing Number: **LR 652285** Date of completing rpt. **21-1-66** Rpt. No. **3078b.**
 Gross tons **499.02** Place of survey, if different from above **Lemmer.**
 No. of visits:
 In shops **-** First date **-** Last date **-**
 On ship **17** First date **2-9-65** Last date **17-12-65**
 Owners **Deutsche Seereederei.** Port of registry **Rostock**
 Ship built by **N.V. Scheepswerf Friesland.** Yard No. **286/41** When **1965** Yr. **12** Mo.
 Main engines made by **Deutz- Köln.** Engine No. **4300447-454.** When **1965**
 Gearing made by **Lohmann Stolterfoht..** Gear No. **Gua 525502/1262** When **1965**
 Aux./donkey boilers made by **-** Boiler No. **-** When **-**
 Machinery installed by **Scheepsbouw & Machinefabriek "Welgelegen", Makkum.** When **1965**
 Particulars of service of ship if limited for classification **-**
 Particulars of vegetable oil or other special cargo notation, if required **-**

If ship is to be classed for navigation in ice, state whether class 1, 2 or 3 **Class 2.**
 Is ship an oil tanker? **no.** Is refrigerating machinery fitted? **no.**
 If so, is it for cargo purposes? **-** Type of refrigerant **-**
 Is the refrigerating machinery space isolated from the propelling machinery space? **-**
 Is the refrigerated cargo installation to be classed? **-**
 No. of main engines **one** Brief description of propulsion system **Reversible engine with reduction gear to propeller.**
 No. of propellers **one** Fee **Fl. 982.50** Expenses **Fl. 177.--**

MAIN INTERNAL COMBUSTION RECIPROCATING ENGINE	
To be reported on Rpt. 4b (Cons)	Port Köln Rpt. No. 1069
MAIN GAS TURBINES	
To be reported on Rpt. 4f (Cons)	Port - Rpt. No. -
ELECTRIC PROPULSION. (Internal combustion reciprocating engines or gas turbines)	
Electrical particulars to be reported on Rpt. 4d	Port - Rpt. No. -
REDUCTION GEARING. (Internal combustion reciprocating engines or gas turbines)	
To be reported on Rpt. 4e	Port Dtm. Rpt. No. 65/935

*Are flame guards or traps fitted to crankcase relief devices?	-	No. of lub. oil coolers	MAIN 1	AUX. -
*Is a torsional vibration damper or detuner fitted to the shafting?	-	Is engine fitted directly on tank top, or on a built-up seating?	built up.	
*Where positioned?	-	*Can engine/turbine be reversed?	-	
*Type	-	*If not, how is reversing effected?	-	

Is the engine equipped to operate on heavy fuel?	no.	Cooling medium for	CYLINDERS -	
No. of fresh water coolers	MAIN 1 AUX. -	PISTONS	FUEL VALVES -	

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 Surveyor to Lloyd's Register of Shipping

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CLUTCHES, FLEXIBLE COUPLINGS, &c. If a clutch or other flexible connection is fitted between engine/turbine and gearing, or between engine and line shafting, give Makers' name, brief description and, for clutches, state how operated.

between engine and gearing, type Vulkan EZ 201. Rubber.

If main engine can be used for purposes other than propulsion when declutched, state what purpose also at what maximum B.H.P. & R.P.M.

AIR COMPRESSORS AND RECEIVERS

State No. of independently driven air compressors, also capacity of each and whether a separator or filter is provided between each compressor and the air receivers, type of prime mover, position in ship, Port and No. of cert.

One, capacity 28.2 cfm, separator fitted, electric motor driven S.aft engine room. Ham.cert. no. 65/1444.

State No. of starting air receivers, both main and auxiliary, capacity of each, position in ship, Port and No. of cert.

one main 500 ltrs. P. cert. Hno. C65/730.
 one main 500 ltrs. S. cert. Hno. C65/729.
 one aux. 250 ltrs. S. cert. Hno. C65/588.

How are air receivers first charged? Hand & Battery started generator, to supply electric power.

Are the safety devices in accordance with the Rules? yes
 Are bursting discs or flame arresters fitted at the starting air valves on each cylinder? yes

Maximum working pressure of starting air system 30

Has the starting of the main engines been tested and found satisfactory? yes

STEAM INSTALLATION

No. of aux./donkey boilers (see Key to R.B.) burning oil fuel -

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? -

Working pressure -

Port and rpt. of cert. Nos. for aux./donkey boilers -

Type -

Position -

Is a superheater fitted? -

Is steam essential for the operation of the ship at sea? -

Are these boilers also heated by exhaust gas? -

If so, are any steam pipes over 3 ins. bore? -

No. of aux./donkey boilers (see Key to R.B.) heated by exhaust gas only -

What is their material? -

Working pressure -

For oil-fired boilers, is the arrangement of pipes, valves, controls, &c., in accordance with Rules? -

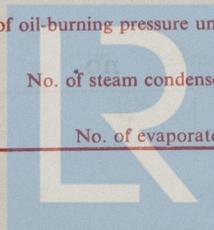
Type -

No. of oil-burning pressure units -

Position -

No. of steam condensers -

No. of evaporators -



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Ship's Name **m.s. "BARTH".**

Port **Groningen.**

Rpt. No. **3078b.**

Date of approval of torsional vibration characteristics of the propelling machinery system with:—

Particulars of barred speed range(s) if imposed, with:—

(a) Working propeller **24-8-65** *629 Z*

(a) Working propeller -

(b) Spare propeller -

(b) Spare propeller -

STRAIGHT SHAFTING

Max. BHP/SHP approved for each line of shafting
THRUST SHAFT. Separate or integral with crank, wheel or electric motor shaft?

1320 @ 380 RPM Corresponding RPM of propeller

240 MN **264**

incorporated in gearing.

Thickness of liner between bearings -
How is the after end of the liner made watertight in the propeller boss? -

Diameter adjacent to collar -

Material of screw/~~xx~~ shaft **Ck 22.**

Material -

Minimum approved tensile strength **44 kg/cm²**

Minimum approved tensile strength -

Is an oil gland fitted? **yes**

INTERMEDIATE SHAFT

Diameter **220**

What type? **seal type**

Material **SM.**

If an approved type, state name **Simplex. Deutsche Werft.**

Minimum approved tensile strength

44 kg/cm²

Length of bearing next to and supporting propeller **1180 mm.**

SCREWSHAFT.

Dia. of cone at large end **275 mm.** *apls. 265 mm @ 240 mm at coupling*

Material of bearing **white metal.**

Is screwshaft fitted with a continuous liner? **no.**

Material of sterntube **steel**

TUBE SHAFT (if separate)

Diameter -

Is sterntube fabricated? **yes**

Is tube shaft fitted with a continuous liner in way of stern tube? -

In multiple screw ships, is the liner between sterntube & "A" bracket continuous? -
If not, is the exposed length of shafting between liners readily visible in drydock? -

Thickness of screw/tube shaft liner at bearings -

PROPELLER

If of special design, state type -

State method of control -

Is it of reversible pitch type? -

If so, is it of approved design? -

PROPELLER	BLADE MATERIAL	TENSILE STRENGTH kg/mm ²	BUILT OR SOLID	LEFT HAND (LH) OR RIGHT HAND (RH)	NO. OF BLADES	DIAMETER mm.	PITCH mm.	TOTAL DEVELOPED SURFACE
Working	Bronze	51.6	solid	LH	4	2550	1875	57%.
Spare	-							

FOR ICE STRENGTHENING ONLY

PROPELLER	DESIGN MOMENT OF INERTIA OF PROPELLER (DRY) kg/m ²	CLASS 1, 2 OR 3	THICKNESS OF BLADES			LENGTH OF BLADE SECTION AT 30% RADIUS	RAKE OF BLADES
			AT TOP OF ROOT FILLET	AT 30% RADIUS	AT TIP		
Working	2700	2	-	113 mm.	22 mm.	661 mm.	10°
Spare							

OIL FUEL TANKS

No. and position of oil fuel settling or service tanks not forming part of ship structure } **none**

LUBRICATION

One attached to gearing
two attached to engine
one spare for gearing, two independent elec. motor

Is an alarm device fitted to indicate failure or reduction of supply from the pumps? **yes**

No. of lub. oil pumps and how driven **driven for main engine.**

No. of oil coolers **(one for gearing one for M.E.)**

Can normal supply be maintained with any one pump out of action? **yes**

No. of duplex oil strainers **one m.e. one gearing**

Is an emergency supply automatically available as per Rule? **yes**

Are the strainers of magnetic type? **no.**

M.Th. Putting.

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INDEPENDENT PUMPS	SERVICE FOR WHICH EACH PUMP IS CONNECTED TO BE MARKED THUS X														
	SUCTION									DELIVERY				Ballast.	
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel Tanks	Condenser Extraction	Sea	Feed Tanks	m.e.	Boiler Feed	Main engine	Oil Fuel Burners	Oil Fuel Tanks	Fire Main		Overboard
Name below each essential pump and state its position. Give capacities of bilge pumps															
Bilge-Ballast-Fire SW cooler. 40 m ³ /h P.side.	X	X	X			X				X			X	X	X
Bilge-Ballast-Fire SW cooler. 40 m ³ /h S.side	X	X	X			X				X			X	X	X
L.O. main engine S.aft.									X	X					
FW cooling. P.aft inboard.								X		X					
SW cooling P.fwd. inboard.						X				X					
FW-SW cooling. P out-board stand by						X	X			X					
F.O. transfer S.side				X								X			
Fire. platform S.						X							X		

BILGE SUCTIONS
No. and size in each hold, deep tank, cofferdam and pump room

Hold. P.fwd and aft 3 1/4" ✓
S.fwd and aft 3 1/4" ✓

Sizes and positions of direct suctions in machinery spaces

one 3 1/4" P.side.

No. and size connected to main bilge line in:—
Main engine room

one 3 1/4" aft.

Sizes and positions of emergency suctions in machinery spaces

one 3 1/4" S.side.

- Aux. engine room -
- Boiler room -
- Tunnel -

Are all suctions of non-return type? yes

Has the bilge or ballast system means for separating oily water on the overboard discharge side? yes

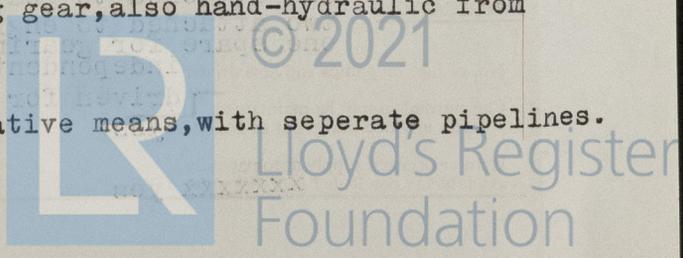
Do the pumping arrangements comply with the Rules, ~~XXXX~~ oil, or classed for navigation in ice Class ~~XXXX~~ (Strike out words not applicable) yes

If to be classed for navigation in ice, state means provided for clearing ice from ship's side valves

Compressed air 6 atm. and S.W. recirculating. main- & aux. eng.

STEERING GEAR. (State type, also No. of steam engines, electric motors, hydraulic pumps and other particulars, including particulars of the alternative means of steering)

One Atlas electric-hydraulic steering gear, also hand-hydraulic from the wheel.
One electric motor.
One electric driven pump.
One hand-pump at the wheel as alternative means, with separate pipelines.



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Ship's Name **m.s. "BARTH".**

Port **Groningen**

Rpt. No. **3078b.**

STEAM AND OIL ENGINE AUXILIARIES

REF	POSITION OF EACH	TYPE	MADE BY
a	P.eng.room.	Diesel 4 SCSA	VEB.Vereinigte Diesel motoren Werke,Leipzig.
b	S.eng.room.	Diesel 4 SCSA	" " "
c	S.platform eng.room.	Diesel 4 SCSA	" " "
d			
e			
f			
g			
h			

REF	PORT & No. OF REPORT OR CERTIFICATE	DRIVEN MACHINERY (for electric generators state kw, volts & amps)
a	Leipzig 3.11/3070/GA-1-80738 DSRK. Gro.3078b.	elec.generator 70 KVA, 390 V, 104 Amps.
b	Leipzig 3.11/3070/1-80739 DSRK. Gro.3078d.	" " 70 KVA, 390 V, 104 Amps.
c	Leipzig 3.11/3070/1-21401. DSRK. Gro. 3078c.	(" " 20 KVA, 390 V, 29.6 Amps (Fire pump.
d		
e		
f		
g		
h		

If electric current is used for essential services at sea, state the minimum No. and capacity of generators required

- (1) So that the ship may operate at sea **one 70 KVA**
- (2) For refrigerated cargo purposes **-**

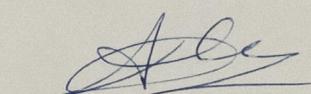
Has the spare gear required by the Rules been supplied? **yes**
Has all the machinery been tried under full working conditions & found satisfactory? **yes**

Date & duration of full-power sea trials of main engines **7-12-65, 12 hours.**
Has the manœuvring of the main engines been tried and found satisfactory? **yes.**

DECLARATION TO BE SIGNED BY INSTALLING ENGINEERS

To the best of our knowledge this machinery has been installed in conformity with the Rules, Regulations and requirements of Lloyd's Register of Shipping, and the foregoing particulars of main and auxiliary machinery and pressure vessels (as shown on sheets 1, 2 & 3) are correct.

17-1-'66
(date)


(signature)

A previous similar case was for (name) **-**

Port and Rpt. No. **-**

IDENTIFICATION MARKS (copies of certificates to be forwarded)

Thrust shaft **-**

Intermediate shafts **19-8-65. 3-9-65 HL 185 M ST.50N 10468. Kln.rpt. 1069. cert.DTM.65/604.**
" bearing Lloyd's DTM HD-6/7/65 550474.

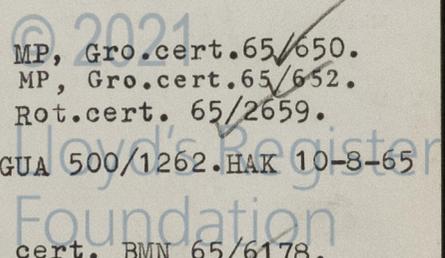
Screw ~~xxxx~~ shafts / screwshaft coupling Lloyd's Dsf.365 HB/Gro.6-9-65 MP, Gro.cert.65/650.
6-9-65 MP, Gro.cert.65/652.

Propellers / Lloyd's Rot. 1515 WB-31/8/65. Rot.cert. 65/2659.

Other important items gearing Lloyd's DTM.525502-0 GUA 500/1262.HAK 10-8-65 cert. DTM.65/936.

Steering gear Lloyd's BMN 6178 RB 19-8-65. cert. BMN 65/6178.

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DATES OF APPROVAL OF PLANS

Straight shafting	24-8-65	Oil burning arrangements	-
Air receivers	-	Compressed air system	16-6-65
Clutch	-	Main steam pipes	-
Reversing gear & control	-	Boiler feed system	-
Flexible coupling	-	Main boilers	-
Separate fuel tanks	-	Superheaters	-
General pumping arrangements	10-5-65	Aux. boilers	-
Bilge, ballast & oil fuel pumping arrangements in the machinery space	16-6-65	Donkey boilers	-
Oil fuel piping & fittings at settling & service tanks	16-6-65	Feed water economisers	-
Cargo oil pumping arrangements	-	Steam heated steam generators Propeller (including spare, if supplied)	26-7-65
		Stern gear Oil-retaining gland (if not shown on shafting plan)	-

DATES OF EXAMINATION OF:-

Fitting of stern tube	7-9-65	Alignment* of straight shafting	light 17-11-65
Fitting of propeller	6-9-65	Testing of pumping arrangements	30-11-65
Completion of sea connections	9-9-65	Oil fuel lines	15-10-65
Alignment* of crankshaft on board	light 17-11-65	Boiler supports	-
Alignment* of turbines/engines & gearing	light 28-9-65	Steering machinery	7-12-65
Holding down bolts & chocks	17-11-65	Windlass	7-12-65

*State if aligned when ship in light, ballast or loaded condition

† The machinery reported above has been constructed and installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The materials and workmanship are good, the spare gear required by the Rules has been supplied and the machinery is eligible, in my opinion, to be classed. ‡ *** LMC 12-65 "Oil Engine" "O.G."**.

M. Th. Putting.

Surveyor to Lloyd's Register of Shipping

Date of Committee **FRIDAY 11 FEB 1966**

Minute

**† LMC ES
TS(OA) } 12-65**

- † (a) If the installation contains any features of a novel or experimental nature, give particulars.
 (b) If centralised and/or bridge control is fitted for main propelling and/or essential auxiliary machinery, state on a Rpt.-(cont.) where the control room is situated, the machinery controlled from it and give a brief description of the control system, including any automatic system for controlling essential auxiliary machinery.
 ‡ Include any special notation to be assigned.



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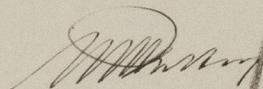
NOTE.—Where existing machinery is submitted for classification, the circumstances are to be explained as fully as possible, and the recommendation should be suitably amended.

Ship's Name ~~SS~~/MS "BARTH".

Port Groningen

Rpt. No. 3078b.

In addition to normal hand control at the engine pneumatic bridge control has been fitted from ^h were manoeuvring, starting, stopping, reversing and speed regulation can be carried out. During the sea trials this equipment was tried out and found satisfactory working.



M.Th. Putting.

