

t. 4b  
 of writing report 22.11.60 Received London Port Bremen No. 4892  
 held at Bremen No. of visits In shops 6 11.8.60 20.9.60  
 On vessel 12 First date 11.8.60 Last date 20.2.61

**FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY**

R.B. Name SELF-PROPELLER PONTOON "GABBAR" Gross tons  
 for a Floating Crane  
 Suez-Canal Authority Managers Port of Registry Alexandria  
 Built at Bremen By A.G. "WESER" Yard No. 1343 Year Month 1960/9  
 Engines made at Mannheim By Motorenwerke Mannheim Eng. No. 15042/012/320 15042/012/321 When 1960/7  
 Boilers made at - By - Blr. Nos. - When -  
 Machinery installed at Bremen By A.G. "WESER" When 1960/9  
 Areas of restricted service of ship, if limited for classification Crane pontoon, Alexandria to Suez-Canal  
 Areas of vegetable or similar cargo oil notation, if required None  
 To be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No  
 Refrigerating machinery fitted? No If so, is it for cargo purposes? No Type of refrigerant -  
 Refrigerating machinery compartment isolated from the propelling machinery space? - Is the refrigerated cargo installation intended to be classed? No

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 answer 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.

Main engines 2 No. of propellers 2 Brief description of propulsion system 2011 engines through mechanical clutch as to V.S. ~~directional propeller~~  
 RECIPROCATING ENGINES. Licence Name and Type No. MWM Mannheim AG., TRH435S supercharged  
 Cylinders per engine 6 Dia. of cylinders 250 mm stroke(s) 350 mm 2 or 4 stroke cycle 4 Single or double acting Single  
 Minimum approved BHP per engine 550 at 500 RPM of engine and 90 RPM of propeller.  
 Working MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral

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?  
 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  
 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?  
 Inlet-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full load  
 Are scavenge manifold explosion relief valves fitted?

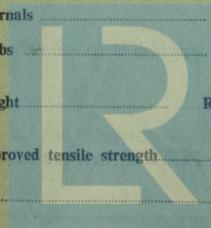
THREE STROKE ENGINES. Is the engine supercharged? Are the undersides of the pistons arranged as supercharge pumps? No. of exhaust gas driven blowers per engine  
 No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharger?

FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel Inlet Exhaust Starting Safety  
 Material of piston crowns Is the engine equipped to operate on heavy fuel oil?  
 Medium for :—Cylinders F.W. Pistons Fuel valves Overall diameter of piston rod for double acting engines  
 Is the engine equipped with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the cylinder covers?  
 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 access to bearings, etc?  
 Is the engine secured directly to the tank top or to a built-up 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?

FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 12.4.60 State barred speed range(s), if imposed  
 Minimum approved propeller speed Not below 140 RPM For spare propeller Is a governor fitted? Is a torsional vibration damper or detuner fitted to the shafting?

Number 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  
 Type: Built, semi-built, solid. (State which)  
 Journals Diameter of crankpins Centre Breadth of webs at mid-throw Axial thickness of webs  
 Side Pins Minimum radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved Tensile strength  
 Webs  
 Flywheel Weight Are balance weights fitted? Total weight Radius of gyration  
 Flywheel shaft Material Minimum approved tensile strength  
 Shaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

SEE MANNHEIM REPORT NO 25



Lloyd's Register Foundation

012868-012874-0086 (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.)

**In Voith-Schneider propeller - see Augsburg certificate no. 60/1387**

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. **Mechanical clutch betw. M.E. & straight shafting hand-operated**

Can the main engine be used for purposes other than propulsion when declutched? **Yes** If so, what? **Dirving generator through clutch & gearing for power supply for electric operated crane.**

**STRAIGHT SHAFTING** (Diameter of thru shaft) ..... Material ..... **Clutch 170** Minimum approved tensile strength .....

Shaft separate or integral with crank or wheel shaft? ..... Diameter of intermediate shaft **108 mm** Material **ST 42.2 (test result 48.8 kg)**

Minimum approved tensile strength **44 kg/mm<sup>2</sup>** Diameter of screwshaft cone at large end ..... Is screwshaft fitted with a continuous liner? **NO**

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 .....

Thickness between bearings ..... Material of screw/tube shaft ..... Minimum approved tensile strength .....

Is an approved oil gland fitted? ..... If so, state type ..... Length of bearing next to and supporting propeller .....

Material of bearing ..... 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? .....

**Voith-Schneider PROPELLER.** Diameter of propeller ..... Pitch ..... Built up or solid ..... Total developed surface .....

No. of blades **4** Blade thickness at top of root fillet ..... Blade material **ST X20 Cr13** Moment of inertia of dry propeller .....

If propeller is of special design, state type **Voith-Schneider** Is propeller of reversible pitch type? **Yes** If so, is it of approved design? **Yes**

State method of control **Hydraulic through levers** Material of spare propeller ..... 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) **2 - 21 m<sup>3</sup>/h aux. engine through clutch port & stbd. Emden certificate no. 60/2658 & 60/2696**

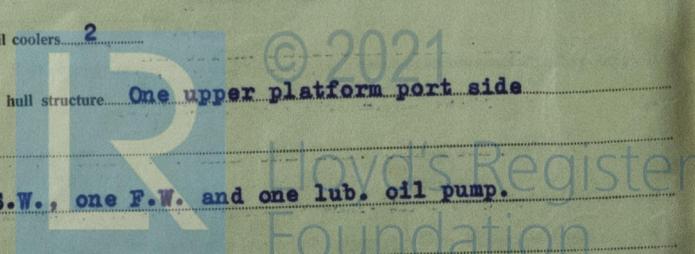
No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) **2 - 250 & 150 litres, stbd. side upper & lower HNO certificate no. 59/302, KLN certificate no. 60/109**

How are receivers first charged? **Through electr. started aux. engine (Batteries charged by handstarted aux. engine)** Maximum working pressure of starting air system **30/ kg/cm<sup>2</sup>** 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 **2**

**OIL FUEL TANKS.** No. and position of oil fuel settling or service tanks not forming part of hull structure **One upper platform port side**

**MAIN ENGINE DRIVEN PUMPS** (No. and Purpose) **Each ME has one S.W., one F.W. and one lub. oil pump.**



Service for which each pump is connected to be marked thus X

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	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
<b>All electr. driven</b>															
Bilge, stbd.fwd. 40 m <sup>3</sup>	X	X											X		
Bilge-fire stbd.aft 30 m <sup>3</sup>	X	X											X		
SW/FW cooling					X	X				X	X				
O.F. transfer				X								X			
Lubricating oil							X							X	
O.F. transfer (hand)				X								X			

BILGE SUCTIONS. No. and size in ~~mm diameter~~ **Compartment other than main engine space 2 - 50 mm diameter**

No. and size connected to main bilge line in main engine room **4x 50 mm diameter** *all after 50 mm* In tunnel **-**

In aux. engine room **-** Size and position of direct bilge suction in machinery spaces **80 mm dia.**

**port after** Size and position of emergency bilge suction in machinery spaces **80 mm dia. starboard centre**

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Do the piping arrangements comply with the Rules including

~~.....~~ (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)
Port after	RHS 518 S	Süddeutsche	AUG No. 3150/DH49	El. generators 90 KW air compr. through clutch.
Starboard after	RHS 518 S	Bremer AG.	AUG No. 3151/DH38	El. generator 2x 45 KW air compr. through clutch
Port forward	RHS 518 Z	Munich	AUG No. 60/1177	El. generator 25 KW

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 - 90 KW** Is an electric generator driven by Main Engine? **2 90 KW through gear & clutch**

STEAM INSTALLATION. No. of donkey boilers burning oil fuel **None** W.P. Type

Position

Is a superheater fitted? Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? 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? Port and No. of report on donkey

boilers Is steam essential for operation of the ship at sea? 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? No. of oil burning pressure

units No. of steam condensers No. of Evaporators

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) **Voith-Schneider directional propeller**

Have the Rule Requirements for fire extinguishing arrangements been complied with? **Yes** Brief description of arrangements **4 hydrants, 2 hoses & nozzles;**

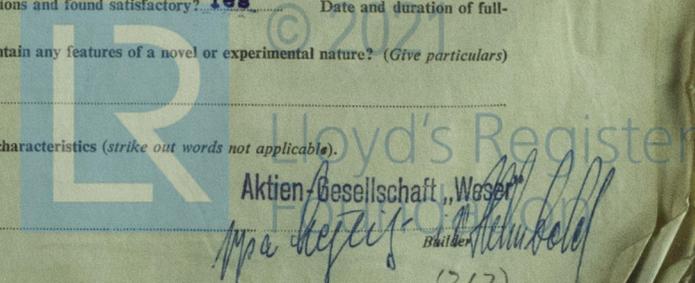
**one 60 ltr. foam, 3-10 ltr. foam, 3-6 ltr. CO2-dry extinguishers**

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 **28.9.60 - 4 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 main and auxiliary machinery of this crane pontoon has been built and installed under Special Survey in accordance with the Rules, Secretary's letters and approved plans, the workmanship and material being good. On completion the machinery was examined under working condition during sea trials and all found in good order. No gear hammer or rough running could be observed during trials, at all speeds.

At the instigation of A.G. "Weger" a notice board was fitted at the control station stating "Main engine not to be run continuously between 400-440 and below 275 RPM". Torsiograph records were taken and copies will <sup>be</sup> forwarded.

The crane pontoon is eligible in my opinion to have the notation +LMC  
2 Oil engines 4 stroke S.A. each 6 cylinder 250 x 350 mm each connected to V.S. directional propeller through mechanical clutch. Motorenwerke Mannheim.

*H. Brunhallet*

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 Lloyds KLN 699 AS 3.3.60

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS Lloyds KLN 639 AS 11.2.60

SCREW AND TUBE SHAFTS

PROPELLERS Voith-Schneider Lloyds AUG DH 64-65 GF1 11.7.60 & 18.7.60

OTHER IMPORTANT ITEMS

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 20-1-60 Gearing Clutch 20.1.60  
Separate oil fuel tanks 3.3.60 Pumping arrangements 30.1.60 Oil fuel arrangements 3.3.60  
Cargo oil pumping arrangements - Air receivers - Donkey boilers -

Dates of examination of principal parts:-

Fitting of stern tube - Fitting of propeller 31.8.60 Completion of sea connections 31.8.60 Alignment of crankshaft in main bearings 20.9.60  
Engine chocks & bolts 16.9.60 Alignment of gearing Alignment of straight shafting 16.9.60 Testing of pumping arrangements 23.9.60  
Oil fuel lines 14.9.60 Donkey boiler supports - Steering machinery 28.9.60 Windlass 28.9.60

Date of Committee THURSDAY - 8 JUN 1961

Special Survey Fee ~~£ 67 - 10 - 6~~

Decision

During Installation £ 81 - 0 - 0

+ LMC ES 2.61

Expenses £ 8 - 0 - 0



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Date when A/c rendered

Lloyd's Register  
Foundation

Account Rendered  
- 8 MAR 1961  
From LONDON