

Rpt. 4b

Date of writing report 11th July, 1962 Received London 30. AUG. 1962 Port KOBE No. FE-10186  
 Survey held at Osaka, Japan In shops 83 28th Sept., 1961 22nd March, 1962  
 No. of visits 26 First date 13th March, 1962 Last date 9th July, 1962.

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B.                      Name m. v. "OKHOTSK" Gross tons 11,105  
 Owners V/O "Sudimport" Moscow, U.S.S.R. Managers Hitachi Shipbuilding & Engineering Co., Ltd., Port of Registry Vladivostok  
Sakurajima Shipyard Year 1962 Month 7  
 Hull built at Osaka, Japan By do. Yard No. 3923 When 1962 7  
 Main Engines made at do. By do. Eng. No. 2151 When 1962 3  
 Gearing made at                      By                      Gear No.                      When                       
 Aux./donkey boilers made at Innoshima, Japan By Hitachi Shipbuilding & Eng. Co., Ltd., Bfr. Nos. 561 & 562 When 1962 2  
Innoshima Shipyard  
 Machinery installed at Osaka, Japan By Hitachi Shipbuilding & Engineering Co., Ltd., Sakurajima When 1962 7  
Shipyard.

Particulars of restricted service of ship, if limited for classification

None

Particulars of vegetable or similar cargo oil notation, if required

None

If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3

"Class 3"

Is ship an oil tanker? No

Is refrigerating machinery fitted? Yes

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? No

Machinery only recd.  
**F.E. FROM ACCTS.** 6 SEP 1962  
**F.E. FROM ADMIN/E** 10/9  
**PLANS RCD.** 30/8  
**CERTS. RECD.**  
**TO RPIS. DEPT.**

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 should 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 all other relevant particulars must be given and the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system 1-oil engine direct coupled to line shaftingMAIN RECIPROCATING ENGINES. Licence Name and Type No. Burmeister & Wain's, Hitachi B & W 874VT2BF-160No. of cylinders per engine 8 Dia. of cylinders 740mm stroke(s) 1600mm 2 or 4 stroke cycle 2 Single or double acting SingleMaximum BHP per engine approved for this installation 12000 BHP at 115 RPM of engine and 115 RPM of propeller.Corresponding MIP 9.5 kg/cm<sup>2</sup> (For DA engines give MIP top & bottom) Maximum cylinder pressure 65 kg/cm<sup>2</sup> Machinery numeral 2400

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? No

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? coverNo. and type of mechanically driven scavenge pumps or blowers per engine and how driven NoneNo. 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? YesIf a stand-by or emergency pump or blower is fitted, state how driven NoneNo. of scavenge air coolers 2 Scavenge air pressure at full power 0.7 kg/cm<sup>2</sup>

Are scavenge manifold explosion relief valves fitted? Yes

TWO AND 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 2 as aboveNo. of supercharge air coolers per engine 2 as above Supercharge air pressure 0.7 kg/cm<sup>2</sup> Can engine operate without supercharge? NoNo. of valves per cylinder: Fuel 2 Inlet None Exhaust 1 Starting 1 Safety 1Material of cylinder covers Cr. Mo. Cast Steel Material of piston crowns Cr. Mo. Cast Steel Is the engine equipped to operate on heavy fuel oil? YesCooling medium for: Cylinders Fresh Water Pistons Lub. Oil Fuel valves Fuel Oil Overall diameter of piston rod for double acting engines                     

Is the rod fitted with a sleeve? No

Is welded construction employed for: Bedplate? Yes

Frames? Yes

Entablature? Yes

Is the crankcase separated from the underside of pistons? Yes

Is the engine of crosshead or trunk piston type? Crosshead

Total internal volume of crankcase 163.47 M<sup>3</sup>No. and total area of explosion relief devices 17, 9021 cm<sup>2</sup>

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?                     

Is the engine secured directly to the tank top or to a built-up seating? Built up seating

How is the engine started? By compressed air

Can the engine be reversed? Yes

If not, how is reversing obtained?                     

Has the engine been tested working in the shop? Yes

How long at full power? 4 hours

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 11-4-61 State barred speed range(s), if imposed 505.5for working propeller None For spare propeller None Is a governor fitted? Yes

Is a torsional vibration damper or detuner fitted to the shafting? No

Where positioned?                      Type                      No. of main bearings 10 Are main bearings of ball or roller type? NoDistance between inner edges of bearings in way of crank(s) 1004.6 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines                     Crankshaft type: Built, semi-built, solid, (State which) BuiltDiameter of journals 620 mm Diameter of crankpins 220 mm Centre 620 mm Breadth of webs at mid-throw 1420 mm Axial thickness of webs 314 mmIf shrunk, radial thickness around eyeholes 345 mm Are dowel pins fitted? NoCrankshaft material: Journals Forged Steel Minimum 45 kg/mm<sup>2</sup>Webs Cast Steel Tensile strength 45 kg/mm<sup>2</sup>Diameter of flywheel 2240 mm Weight 8092 kg Are balance weights fitted? YesTotal weight 15140 kg Radius of gyration 1.125 mmDiameter of flywheel shaft 570 mm Material Forged Steel Minimum approved tensile strength 45 kg/mm<sup>2</sup>Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with thrustshaft.

Lloyd's Register  
 Foundation

012796-012800-0107 1/3



# 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. State Port and report No.)

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. Full particulars to be reported on Form 4e.)

Report 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.

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

STRAIGHT SHAFTING. Diameter of thrustshaft..... 570 mm Material..... Forged Steel Minimum approved tensile strength..... 45 kg/mm<sup>2</sup>

Shaft separate or integral with crank or wheel shaft?..... Integral with thrust shaft Diameter of intermediate shaft..... 460 mm Material..... Forged Steel

Minimum approved tensile strength..... 45 kg/mm<sup>2</sup> Diameter of screwshaft cone at large end..... 550 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..... 29 mm Thickness between bearings..... 29 mm How is the after end of the liner made watertight in the propeller boss?..... Neoprene ring

Material of screw/tube shaft..... Forged Steel Minimum approved tensile strength..... 45 kg/mm<sup>2</sup> Is an approved oil gland fitted?..... No If so, state type.....

Length of bearing next to and supporting propeller..... 2250 mm Material of bearing..... Lignumvitae 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. If of special design, state type..... No Is it of reversible pitch type?..... No

If so, is it of approved design?..... State method of control.....

Propeller	Diameter	Pitch	Built or solid	Total developed surface	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry) kg-cm-sec <sup>2</sup>	For Class 1 or 2 ice strengthening only			
										Blade thickness at 35% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade
Working	6100mm	4820mm	Solid	13,536M <sup>2</sup>	4	285.2mm	Mn.Br.	51.6 kg/mm <sup>2</sup>	324555	-	-	-	-
Spare	6100mm	At 0.7R 4720mm	Built	12,575M <sup>3</sup>	4	261.5mm	Cast Steel	49.7 kg/mm <sup>2</sup>	314000	-	-	-	-

## 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-Main 4.7M<sup>3</sup>/min Motor driven stbd fw'd & Kobe M-76770 1-Aux. 0.17M<sup>3</sup> Diesel Engine Driven Stbd Kobe M-76772-A 1-Ship Service 0.32M<sup>3</sup>/min Motor Driven Stbd Kobe M-76771 1-Dumper Control 0.14 M<sup>3</sup>/min Motor Driven Stbd on 2nd deck in E.R. Kobe M-76773

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate)..... 2-Main 11M<sup>3</sup> Stbd in boat and outboard under deck in E.R. Kobe AR-76568 2-Aux. 0.2M<sup>3</sup> port and starboard Kobe AR-73471 1-Ship Service 1.5M<sup>3</sup> Fw'd centre in E Kobe AR-76569 1-Dumper Control 0.17M<sup>3</sup> Starboard on 2nd deck in E.R. Kobe AR-74041

How are receivers first charged?..... Aux. air compressor driven by diesel engine Maximum working pressure of starting air system..... 25 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

No. of Fuel Valve Cooling Coolers: 1

### Fuel Oil Tank:

2-25M<sup>3</sup> Heavy oil settling tanks P. & S. on 3rd deck in E.R.

2-9.5M<sup>3</sup> Heavy oil service tanks Std. in. & outboard on 3rd deck in E.R.

1-6.5M<sup>3</sup> Diesel oil settling tank Std. 3rd deck in E.R.

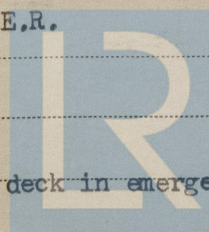
1-7.5M<sup>3</sup> Diesel oil service tank Std. 3rd deck in E.R.

1-2M<sup>3</sup> F.O. settling tank for Donkey boiler Std. on boiler flat.

1-0.9M<sup>3</sup> Diesel oil tank for emergency generator engine Std. on boat deck in emergency generator room.

1-0.2M<sup>3</sup> Kerosen tank for emergency fire pump In steering Room

1-0.5M<sup>3</sup> F.O. drain tank Std. in engine room.



© 2021

Lloyd's Register Foundation

he foregoing d



# 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. State Port and report No.)

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. Full particulars to be reported on Form 4e.) Port.....

Report 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.....

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

STRAIGHT SHAFTING. Diameter of thrustshaft..... 570 mm Material Forged Steel Minimum approved tensile strength 45 kg/mm<sup>2</sup>

Shaft separate or integral with crank or wheel shaft?..... Integral with thrust shaft Diameter of intermediate shaft..... 460 mm Material Forged Steel

Minimum approved tensile strength 45 kg/mm<sup>2</sup> Diameter of screwshaft cone at large end..... 550 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..... 29 mm Thickness between bearings..... 29 mm How is the after end of the liner made watertight in the propeller boss? Neoprene ring

Material of screw/tube shaft Forged Steel Minimum approved tensile strength 45 kg/mm<sup>2</sup> Is an approved oil gland fitted? No If so, state type.....

Length of bearing next to and supporting propeller..... 2250 mm Material of bearing Lignumvitae 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. If of special design, state type..... No Is it of reversible pitch type? No

If so, is it of approved design?..... State method of control.....

Propeller	Diameter	Pitch	Built or solid	Total developed surface	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry) kg-cm-sec <sup>2</sup>	For Class 1 or 2 ice strengthening only			
										Blade thickness at 35% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade
Working	6100mm	4820mm	Solid	13,536M <sup>2</sup>	4	285.2mm	Mn.Br.	51.6 kg/mm <sup>2</sup>	324555	-	-	-	-
Spare	6100mm	At 0.7R 4720mm	Built	12,575M <sup>3</sup>	4	261.5mm	Cast Steel	49.7 kg/mm <sup>2</sup>	314000	-	-	-	-

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine None Can they be declutched?.....

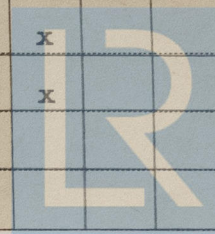
No. of independently driven air compressors (State capacity, prime mover, position in ship, and Port and No. of certificate) 2-Main 4.7M<sup>3</sup>/min Motor driven stbd fwd & A  
 Kobe M-76770 1-Aux. 0.173M<sup>3</sup> Diesel Engine Driven Stbd Kobe M-76772-A 1-Ship Service 0.32M<sup>3</sup>/min Motor Driven Stbd

As per attached sheet

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1-Fuel oil supply pump, 1-Fuel oil pump for each cylinder.



	BALLAST MAIN	OIL FUEL	SEA	LUB OIL	VACUUM TANK	DISTILL ING TANK				FEED TANK	OIL FUEL TANK	LUB. OIL	MAIN ENG.	OVER BOARD	ATMOS PHERE OVER BOARD	BRINE HEATER	FIRE MAIN
1-F.O.transfer & service pump Std. motor driven		X								X							
2-Heavy oil circulating pumps Std. in.&outboard motor driven		X											X				
1-Oily ballast water supply pump for bilge separator Std. motor driven	X		X											X			
2-Vacuum Pumps Std. Fw'd & Aft motor driven					X										X		
1-Brine pump for distilling plant Port motor driven			X													X	
1-Condensate pump for distilling plant Port motor driven						X			X								
1-Starting L.O.pump for generator E. Port motor driven				X								X					
1-L.O. service pump Std. motor driven				X								X					
1-Emergency fire pump diesel engine driven in steering E.R.			X														



© 2021

Lloyd's Register  
Foundation

0107 2/3



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																			OVER BOARD	EXH. GAS BOILER	BOILER BURNING UNIT
	SUCTION									DELIVERY												
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cool- ing	Sea	Feed Tanks	Lub. Oil	DONKEY BOILER	Boiler Feed	Salt Water Cool- ing	Fresh Water Cool- ing	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cool- ing	M.E F.O VALVE					
1-Fresh water cooling pump Port motor driven					X							X										
1-Sea water cooling pump Port motor driven 400M <sup>3</sup> /H		Emerg. X				X					X											
1-Common reserve cooling pump Port motor driven					X	X					X	X										
2-Lub. oil pumps Port fwd & aft motor driven								X							X	X						
2-Lub.oil pumps for turbo-charger Std.fwd & Aft 3rd dk in E.R. motor driven								X							X							
2-Fuel valve cooling pumps Std.in.& outboard motor driven				X													X					
1-Fuel oil transfer pump Std. motor driven				X									X									
1-Bilge pump 30M <sup>3</sup> /h Std. motor driven	X					X							Sludge X					X				
2-G.S. & Fire pumps Each 150M <sup>3</sup> /h Port & std. motor driven			X			X					X			X				X				
2-Bilge & ballast pumps Each 150M <sup>3</sup> /h Std.Fwd & Aft motor driven	X	X	X			X												X				
2-Boiler water circulating pumps Std.in. & outboard on boiler flat motor driven									X										X			
2-Feed water pumps Port.in.& outboard on boiler flat motor driven							X			X												
2-F.O. burning pumps Std.in.& outboard on boiler flat motor driven				X																X		

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

No.1	No.2	No.3F	No.3A	No.4	Duct Keel	No.5F	No.5A
P. 1-80mm	1-80mm	1-90mm	1-90mm	1-80mm	1-80mm	1-80mm	1-80mm
S. 1-80mm	1-80mm	1-90mm	1-90mm	1-80mm	1-80mm	1-80mm	1-80mm

No. and size connected to main bilge line in main engine room: 2-80mm P. & S. Fwd 2-80mm P&S Aft 1-80mm Centre Aft In tunnel 1-80mm  
2-50mm Coff.

In aux. engine room: \_\_\_\_\_ Size and position of direct bilge suction in machinery spaces: 1-80mm port aft

1-60 mm Starboard Aft \_\_\_\_\_ Size and position of emergency bilge suction in machinery spaces: 1-260mm Port Aft

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 oil tankers, ships carrying cargo oil or classed for navigation in ice Class 100 or 3? (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)
Starboard (No.1)	4 cycle single acting Hitachi B&W 625MTBH	Hitachi S.B. & E.Co., Ltd., Innoshima	Kobe O-77560	400 KVA A.C. Generator
Port inboard (No.2)	do.	do.	do.	do.
Port Outboard (No.3)	do.	do.	do.	do.
Starboard	4 cycle single acting Yanmar SS-4	Showa Precision Machinery Co.	Kobe O-76418	Aux. Air Compressor
Std. on Boat Deck	4 cycle single acting Aut. Start 3PSH-18 DEF	Daihatsu Kogyo K.K.	Kobe O-76849	60 KVA Emergency Generator
In Steering Room	4 cycle single acting 3PK-9A	do.	Kobe M-76901	Emergency fire pump

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: 1-400 KVA \_\_\_\_\_

Is an electric generator driven by Main Engine? Yes 1-150KVA for domestic use only.

**STEAM INSTALLATION.** No. of aux. boilers burning oil fuel: 2 W.P. 7 kg/cm<sup>2</sup> Type: Fusion Welded Cochran  
(See Circular 2144)

Position: Port and Starboard on boiler flat (Aft in Engine Room)

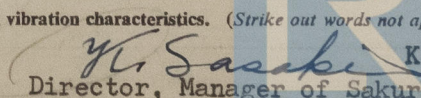
Is a superheater fitted? No \_\_\_\_\_ Are these boilers also heated by exhaust gas? No \_\_\_\_\_ No. of economiser boilers heated by exhaust gas only? 1 W.P. 9.5 kg/cm<sup>2</sup>

Type: Header & Coil Position: In funnel 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? As economisers only \_\_\_\_\_ Port and No. of report on aux./donkey boilers: Kobe M-77445 Economiser \_\_\_\_\_ Is steam essential for operation of the ship at sea? Yes \_\_\_\_\_ Are any steam pipes over 3 ins. bore? Yes \_\_\_\_\_ If so, what is their material? Seamless Steel Pipe \_\_\_\_\_ For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? Yes \_\_\_\_\_ No. of oil burning pressure units: 2 No. of steam condensers: 1 No. of Evaporators: 1

**STEERING GEAR.** (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars including particulars of alternative means of steering) \_\_\_\_\_  
1-2 Ram Electro Hydraulic type with 2-Heleshaw type pump driven by electric motors.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes \_\_\_\_\_ Brief description of arrangements: 8-9 L. Foam Extinguishers  
6-70mm dia. fire coupling with 20M canvas horse 2-45 L. Foam extinguishers 5-70 L. sand box  
Steam smothering in way of boilers, oil fuel unit, oil fuel tanks and generator engine, CO2 smothering system.  
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: 20-6-62 4 Hrs. \_\_\_\_\_ 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.)

  
 K. Sasaki  
 Director, Manager of Sakurajima Shipyard  
 Hitachi Shipbuilding & Engineering Co., Ltd. Builder  
 Sakurajima Shipyard

Lloyd's Register  
 of Shipping  
 0107 3/3



## 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 ship has been constructed under Special Survey in accordance with the Rules, Approved plans and Secretary's letters. The materials and workmanship are good. The machinery has been examined in the shops and also during comprehensive sea trials and found satisfactory.

It is recommended that the machinery is worthy to have the records of +LMC 7,62, Auxiliary Boiler Survey 7,62, Tailshaft Survey (Continuous Liner) 7,62 and Steam Pipe Survey 7,62 (Strengthened for Navigation in Ice Class 3).

*G.M. Kersey, L.O. Christensen & S. Hashiguchi*  
Engine 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 Rod: LLOYD'S KOB NO. HC-F1677-1 & 2, 1675-1 & 2, 1756, 1674, 1731, 1824 SH LR 26-1-62

Connecting Rod: LLOYD'S KOB NO. HC-F1867, 1853, 1813, 1784 KY IR 24-1-62, 1783, 1785, 1812 SH LR 28-11-62, 1857 SH LR 7-12-62

CRANKSHAFT OR ~~CRANKSHAFT~~ LLOYD'S KOB NO. KT-CK 477 EI LR 29-11-61 Reamer Bolt: KOB No. KT-CK 477-1&2 (Spare) EI LR 29-11-61

Cross Head

FLYWHEEL SHAFT LLOYD'S NAG NO. 4685-A to D, F & G GMK LR 31-1-62, No. 4685-E & G KT IR 6-2-62

THRUST SHAFT LLOYD'S KOB NO. HC-F1855 EI LR 29-11-61 Tie Rod: KOB NO. K-F3122-1 to 20, 3123-1 to 20 EI LR 13-12-61

## GEARINGS

INTERMEDIATE SHAFTS No. 1 LLOYD'S KOB NO. HC-F1898 SH 2-2-62 IR No. 2 NO. HC-F1905 KY 18-1-62 IR No. 3 No. HC-F1919 SH 16-3-62 IR

SCREW AND ~~OTHER~~ SHAFTS LLOYD'S KOB NO. HC-F1752 SH 8-3-62 IR Spare: HC F 1696 PM 28-8-61 LR

PROPELLERS: LLOYD'S SMK NO. 12061 KOI 24-2-62 LR (Original) LLOYD'S SMK NO. 12081 KOI 12-4-62 LR (Spare)

OTHER IMPORTANT ITEMS: Cyl. Cover: LLOYD'S KOB NO. HC-C1977, 1978, 2128, 2129, 1984, 1944, 2023, 1983 SH LR 9-2-62

Piston Crown: LLOYD'S KOB NO. HC-C1881, 1891, 1969, 1920, 1880, 1938, 1970, 1879 GMK IR 31-1-62

## OTHER IMPORTANT ITEMS

Coupling Bolts of Line Shaft: HC-F 1915 & 1916 KY 31-3-62 LR HC-F 2007 & 2009 LOC 30-4-62 IR HC-F1903 & 1904 LOC 4-5-62 LR

Is the installation a duplicate of a previous case? Yes If so, state name of vessel M.V. "OMSK" & "ORENBURG"

Date of approval of plans for crankshaft 8-3-61 Straight shafting 8-3-61 (Thrust) 10-7-61 Gearing None Clutch None

Separate oil fuel tanks 25-7-61 Pumping arrangements 16-1-62 Oil fuel arrangements 15-7-61

Cargo oil pumping arrangements None Air receivers 20-4-61 (Main) 12-7-61 (Aux.) Aux. ~~boilers~~ 27-3-61 Economiser 13-5-61

Dates of examination of principal parts:—

Fitting of stern tube 14-3-62 Fitting of propeller 15-3-62 Completion of sea connections 15-3-62 Alignment of crankshaft in main bearings 7-5-62

Engine checks & bolts 10-5-62 Alignment of gearing — Alignment of straight shafting 7-5-62 Testing of pumping arrangements 5-6-62

Oil fuel lines 27-4-62 22-5-62 Donkey boiler supports 2-4-62 Steering machinery 2-7-62 Windlass 2-7-62

Date of Committee

Decision

FRIDAY 21 SEP 1962

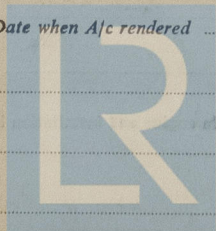
*Home and  
Aux B  
Sps  
Ch* } 7.62

Special Survey Fee

Construction: £ 612,250.-  
Installation: 340,000.-

Expenses

Date when A/c rendered



© 2021

Lloyd's Register  
Foundation