

29 JAN 1960

Rpt. 4b

Date of writing report 2nd Dec., 1959. Received London KOBE No. FE-7273
 Survey held at Kobe & Mukaishima In shops 45 12th Aug., 1959 9th Nov., 1959.
 No. of visits 26 On vessel 26 First date 20th Sept. 1959 Last date 14th Nov., 1959.

RECD. **FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY**

No. in R.B. _____ Name Steel Twin Screw Motor Oil Barge "STANVAC JURONG" Gross tons 690.48
 Owners Standard Vacuum Oil Co., Ltd. Managers _____ Port of Registry Singapore
 Hull built at Mukaishima, Japan By Mukaishima Dock Yard Co., Ltd. Yard No. 48 Year Month 1959-11
 Main Engines made at Kobe By Nippon Hatsudoki Co., Ltd Eng. No. 6687, 6688 When 1959-9
 Gearing made at _____ By _____
 Donkey boilers made at _____ By _____ Blr. Nos. _____ When _____
 Machinery installed at Mukaishima, Japan By Mukaishima Dockyard Co., Ltd. When 1959-10

Particulars of restricted service of ship, if limited for classification A.1. "Oil Tanker" for Service at Singapore Harbour
 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 Oil in bulk? Yes (above 150°F flashpoint)
 Is refrigerating machinery fitted? No If so, is it for cargo purposes? _____ Type of refrigerant _____
 Is the refrigerating machinery compartment isolated from the propelling machinery space? _____ 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 2 No. of propellers 2 Brief description of propulsion system Two (2) Oil Engines coupled by clutch to two screw shafts
 MAIN RECIPROCATING ENGINES. Licence Name and Type No. Nippon Hatsudoki 36NV-129L type, vertical 4 cycle single acting, trunk piston direct (MAX type)
 No. of cylinders per engine 6 Dia. of cylinders 290 mm stroke(s) 420 mm 2 or 4 stroke cycle 4 Single or double acting Single
 Maximum approved BHP per engine 520 at 380 RPM of engine and 380 RPM of propeller.
 Corresponding MIP 8.75 kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 55 kg/cm² Machinery numeral 208

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? _____

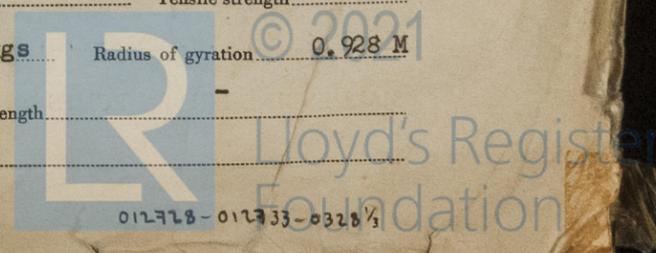
FOUR STROKE ENGINES. Is the engine supercharged? Yes Are the undersides of the pistons arranged as supercharge pumps? No No. of exhaust gas driven blowers per engine 1 No. of supercharge air coolers per engine None Supercharge air pressure 0.163kg/cm² Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1 Starting 1 Safety 1
 Material of cylinder covers Cast Iron Material of piston covers Cast Iron Is the engine equipped to operate on heavy fuel oil? No
 Cooling medium for:—Cylinders F.W. Pistons None Fuel valves None Overall diameter of piston rod for double acting engines _____
 Is the rod fitted with a sleeve? _____ Is welded construction employed for: Bedplate? No Frames? No Entablature? _____ Is the crankcase separated from the underside of pistons? No Is the engine of crosshead or trunk piston type? Trunk piston Total internal volume of crankcase 49.98 ft³ No. and total area of explosion relief devices 6x7.8 in² Are flame guards or traps fitted to relief devices? Yes 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? seating How is the engine started? by compressed air
 Can the engine be directly reversed? Yes If not, how is reversing obtained? _____

Has the engine been tested working in the shop? Yes How long at full power? 4 1/2 hours
 CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 11th Dec., 1959 Date barred speed range(s), if imposed _____
 for working propeller 290-330 r.p.m. spare propeller _____ Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No
205-240 r.p.m.

Where positioned? _____ Type _____ No. of main bearings 7 Are main bearings of ball or roller type? No Distance between inner edges of bearings in way of crank(s) 338 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 185 mm Diameter of crankpins 180 mm Breadth of webs at mid-throw 270 mm Axial thickness of webs 95 mm
 If shrunk, radial thickness around eyeholes _____ Are dowel pins fitted? _____ Crankshaft material Journals S.F. Minimum _____ Approved 55 kg/cm²
 Webs _____ Tensile strength _____

Diameter of flywheel 1060 mm Weight 704 kgs Are balance weights fitted? No Total weight 704 kgs Radius of gyration 0.928 M
 Diameter of flywheel shaft _____ Material _____ Minimum approved tensile strength _____
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crank shaft.



29 JAN 1960

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? 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. Radial expansion type friction clutch being fitted inside the fly wheel rim.

Can the main engine be used for purposes other than propulsion when declutched? Yes If so, what? Cargo pumping Manual operation

STRAIGHT SHAFTING. Diameter of thrustshaft 155 mm Material S.F. Minimum approved tensile strength 50 kg/mm²

Shaft separate or integral with crank or wheel shaft? Separate Diameter of intermediate shaft 160 mm Material S.F.

Minimum approved tensile strength 45 kg/mm² Diameter of screwshaft cone at large end 150 mm Is screwshaft fitted with a continuous liner? No

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 screwshaft liner at bearings Fwd 12mm Aft 12.5 mm Thickness between bearings - Material of screwshaft S.F. Minimum approved tensile strength 45kg/mm²

Is an approved oil gland fitted? Yes If so, state type Newark Type Length of bearing next to and supporting propeller 670 mm

Material of bearing Lignumvitae In multiple screw vessels is the liner between stern tube and A bracket continuous? No If not, is the exposed length of shafting between liners readily visible in dry dock? Invisible

PROPELLER. Diameter of propeller 1530 mm Pitch 1150 mm Built up or solid Solid Total developed surface 9027 cm²

No. of blades 4 Blade thickness at top of root fillet 58.9 mm Blade material Manganese Bronze Moment of inertia of dry propeller 339 kg.cm.sec²

If propeller is of special design, state type - Is propeller of reversible pitch type? No If so, is it of approved design? -

State method of control - Material of spare propeller Manganese Bronze Moment of inertia 339 kg.cm.sec²

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

No. of identically driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate)

One Main, 80 HP Diesel Engine driven, 24 M³/H x 30 kg/cm², Starb'd fwd in E.R. Cert.No. Kobe M-59538

One Aux. 2HP " " " 13.3 " x 30 " " Port aft in E.R. Cert.No. Kobe M-59538

No. of starting receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate)

Two for M.E. 300 l. each, port fwd (inb'd & outb'd) in E.R. Cert.Nos. Kobe AR-60395 & 60396.

Two for M.E. 300 l. each, starb'd fwd (inb'd & outb'd) in E.R. Cert.Nos. Kobe AR-60393 & 60394.

One for main gen. engine, 85 l. starb'd outb'd in E.R. Cert.No. Kobe AR-59611.

One for air phone, 300 l. port fwd in E.R. Cert. No. Kobe AR-60022.

One for aux. diesel engine, 45 l. port aft in E.R. Cert.No. Kobe AR-59611.

One for G.S. pump's diesel engine, 30 l. port outb'd (fwd) in E.R. Cert.No. Kobe AR-59611.

One for bilge & ballast pump's diesel engine, 30 l. port outb'd (aft) in E.R. Cert. No. Kobe AR-59611.

0328 1/4

in upper space, Two-Kerosine Oil Tanks, 250 l. each, Std aft (outb'd & Inb'd) in Mach'y Room, One-F.O. service tank, 200 l. Std outb'd in E.R., One-F.O. service tank, 200 l. Fwd centre in upper space of E.R.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose)

1-F.W. Cooling pump, 1-bilge pump, 1-L.O. pump for engine.

1-Cargo Oil Pump (Clutch connection) - per engine.

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															
	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	F.W. Head Tank
Bilge & Ballast Pump Diesel Engine Driven																
35M ³ /Hx30M, Port Outb'd in E.R.	x	x				x					x		x			
G.S. & Fire Pump, Diesel Engine Driven																
27M ³ /Hx30M, Port Outb'd in E.R.	x	x				x					x		x			
F.O. Transfer Pump, Motor Driven																
Std aft in E.R.																
L.O. Transfer Pump, Motor Driven												x				
Std aft in E.R.																
F.W. pump, Motor Driven															x	
Std inb'd in E.R.																x

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room Chain locker, 2-2", Coff. 1-2", Pump Room 1-2"

No. and size connected to main bilge line in main engine room 1-3", 2-2", 2-2" (Connected to M.E. Bilge Pump) In tunnel -

In aux. engine room - Size and position of direct bilge suction in machinery spaces 1-3" Aft. Center

Size and position of emergency bilge suction in machinery spaces 1-3" Aft. Centre

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 including special requirements for ships carrying Oil in bulk, Oil (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)
Std fwd in E.R.	4SCSA, Yanmar Diesel Engine	Yanmar Diesel Engine Co., Ltd.	Kobe O-59355	45KW D.C. Main Generator & 24M ³ /H Main Air Compressor
Port Outb'd (Fwd) in E.R.	"	"	Kobe M-59684	G.S. & Fire Pump
Port Outb'd (Aft) in E.R.	"	"	Kobe M-59684	Bilge & Ballast Pump
Port aft in E.R.	"	"	Kobe M-59685	15 K.W. D.C. Aux. Generator & 13.3M ³ /H Aux. Air 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 One - 15 KW D.C. Generator Is an electric generator driven by Main Engine? No

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 pre-reheaters -

units - No. of steam condensers None No. of Evaporators None

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars)

One off, Electro Hydraulic Janney Type

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements

2-@ 27,000 cm³ Sand Box, Engine Room: 1-Portable 9 l Foam Extinguisher, 2- " @15 lbs CO2 Bottle, Pump Room: 2-Portable @9 l Foam Extinguisher & 2-Water Coupling, each with 2" dia. x 15M Canoes hose & CO2 System. CO2 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 12th Nov. 6 hrs, 14th Nov. 3 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).

Marine Superintendent: T. Kuchihata, Managing Director, S. Nishikawa

Mukaishima Dockyard Co., Ltd. Nippon Hatsudokico, Ltd. Builder

0328 1/4

Lloyd's Register Foundation

29 JAN 1960

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.

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.

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? 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. Radial expansion type friction clutch being fitted inside the fly wheel rim.

Can the main engine be used for purposes other than propulsion when declutched? Yes. If so, what? Cargo pumping. Manual operation.

STRAIGHT SHAFTING. Diameter of thrustshaft. 155 mm. Material. S.F. Minimum approved tensile strength. 50 kg/mm²

Shaft separate or integral with crank or wheel shaft? Separate. Diameter of intermediate shaft. 160 mm. Material. S.F.

Minimum approved tensile strength. 45 kg/mm². Diameter of screwshaft cone at large end. 150 mm. Is screwshaft fitted with a continuous liner? No.

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 screwshaft liner at

bearings. Fwd 12 mm. Aft 12.5 mm. Thickness between bearings. Material of screwshaft. S.F. Minimum approved tensile strength. 45 kg/mm²

Is an approved oil gland fitted? Yes. If so, state type. Newark Type. Length of bearing next to and supporting propeller. 670 mm.

Material of bearing. Lignumvitae. In multiple screw vessels is the liner between stern tube and A bracket continuous? No. If not, is the exposed length of shafting between

liners readily visible in dry dock? Invisible.

PROPELLER. Diameter of propeller. 1530 mm. Pitch. 1150 mm. Built up or solid. Solid. Total developed surface. 9027 cm²

No. of blades. 4. Blade thickness at top of root fillet. 58.9 mm. Blade material. Manganese Bronze. Moment of inertia of dry propeller. 339 kg.cm. sec²

If propeller is of special design, state type. Is propeller of reversible pitch type? No. If so, is it of approved design?

Material of spare propeller. Manganese Bronze. Moment of inertia. 339 kg.cm. sec²

How are receivers first charged? Diesel Engine driven Aux. Compressor. 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. None. No. of main engine lubricating oil coolers. 1 per engine.

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure. Two-F.O. service tanks, 800 l. each, Aft Cr. & port aft

in upper space, Two-Kerosine Oil Tanks, 250 l. each, Std aft (outb'd & Inb'd) in Mach'y Room, One-F.O. service tank, 200 l. Std outb'd in E.R., One-F.O. service tank, 200 l. Fwd centre in upper space of E.R.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose). 1-F.W. Cooling pump, 1-bilge pump, 1-L.O. pump for engine.

1-Cargo Oil Pump (Clutch connection) - per engine.

Table with columns for INDEPENDENT PUMPS, SUCTION, and DELIVERY. Lists various pumps like Bilge & Ballast Pump, G.S. & Fire Pump, etc.

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room. Chain locker, 2-2", Coff. 1-2", Pump Room 1-2"

No. and size connected to main bilge line in main engine room. 1-3", 2-2", 2-2" (Connected to M.E. Bilge Pump) In tunnel -

In aux. engine room. Size and position of direct bilge suction in machinery spaces 1-3" Aft. Center

Size and position of emergency bilge suction in machinery spaces. 1-3" Aft. CENTRE.

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 including

special requirements for ships carrying Oil in bulk, ~~or~~ (strike out words not applicable). Yes

STEAM & OIL ENGINE AUXILIARIES

Table with columns for Position of each, Type, Made by, Port and No. of Rpt. or Cert., and Driven Machinery (For electric generators, state output).

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 - 15 KW D.C. Generator. Is an electric generator driven by Main Engine? No.

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. 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. No. of oil burning pre-re

units. No. of steam condensers. None. No. of Evaporators. None.

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars).

One off, Electro Hydraulic Janney Type. Engine Room: 1-Portable 9 l Foam Extinguisher,

2-@ 27,000 cm³ Sand Box, 2-@ 15 lbs CO2 Bottle, Pump Room: 2-Portable @ 9 l Foam Extinguisher &

2-Water Coupling, each with 2" dia. x 15M Canocs hose & CO2 System. CO2 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. 12th Nov. 6 hrs, 14th Nov. 3 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).

Marine Superintendent: T. Kuchihata, Managing Director. S. Nishikawa. Builder

Mukaishima Dockyard Co., Ltd. Nippon Hatsudokico, Ltd.

0328 1/4



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 material and workmanship are satisfactory.

The machinery has been examined under full working conditions in the shop and found satisfactory.

The machinery has been installed on the vessel at Mukaishima in a proper manner and found satisfactory when tested at sea under full working condition and eligible in our opinion for classification with the records of +LMC 11,59 and Tail Shaft - Oil Gland - Port and Starboard 11,59.

NOTE:- Pending final decision a temporary notice board has been fitted at the control station stating that (a) With the propeller clutch engaged. The engine is not to be operated above 350 r.p.m. and continuous operation should be avoided between 290-330 r.p.m. in addition to the engine builders.

Recommended restricted speed range between 205 and 240 r.p.m. (b) With the cargo pump engaged the engine should be operated only at the constant speed of 350 r.p.m.

P. Manson & K. Tabuchi & S. Hashiguchi

Engineer Surveyor to Lloyd's Register of Shipping.
P. Manson, Y. Hamada, K. Tabuchi & S. Hashiguchi.

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

	Port	Starboard
RODS	No. DT-F485-1-8	No. DT-F486-1-8
CRANKSHAFT	No. CI-CK454	No. CI-CK 453
FLYWHEEL SHAFT		
THRUSTSHAFT	No. CI-F 992	No. CI-F991
GEARING	-	-
INTERMEDIATE SHAFTS	Working F492 Spare F487	F491 F489
SCREW AND TUBE SHAFTS	Working F490 Spare H630 ✓	F488 H629 ✓
PROPELLERS	H636 ✓	H631 ✓
OTHER IMPORTANT ITEMS	Crankpin Brass No. KOC-848 to 850	
	Turbo Charger No. Y-13738-6 No. Y-13732	

Is the installation a duplicate of a previous case? No If so, state name of vessel -

Date of approval of plans for crankshaft 15-6-59 Straight shafting 22-7-59 Gearing - Clutch 22-7-59

Separate oil fuel tanks 1-7-59 Pumping arrangements 1-7-59 Oil fuel arrangements 1-7-59

Cargo oil pumping arrangements 25-8-59 Air receivers 10-8-59 Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube 12-10-59 Fitting of propeller 14-10-59 Completion of sea connections 3-10-59 Alignment of crankshaft in main bearings 23-10-59

Engine chocks & bolts 23-10-59 Alignment of gearing - Alignment of straight shafting 27-10-59 Testing of pumping arrangements 12-11-59

Fuel lines 6-11-59 Donkey boiler supports - Steering machinery 29-10-59 Windlass 12-11-59

Date of Committee FRIDAY 26 FEB 1960

Decision See Apt. 1.

Special Survey Fee ...

Expenses ...

Date when A/c rendered