

Rpt. 4a

MACHINERY OF SHIP NOT BUILT UNDER SURVEY

Date of writing report 3. 12. 64 Received London 22 MAR 1965 Port Nagasaki No. FE-1321

Survey held at Sasebo, Japan No. of visits { In shops -
On vessel 19 First date 13.10.64 Last date 2.12.64

FIRST ENTRY REPORT ON
STEAM TURBINE MACHINERY

No. in Register Book - Name "MOBIL PROGRESS" (now named "AUSTRALIAN PROGRESS") Gross tons 10186

Owners Associated Steamship Co., Ltd. Managers - Port of Registry Melbourne

Hull built at Hamburg By Schlieker Werft Yard No. 525 When 1960

Main engines made at San Francisco By Joshue Hendy Iron Works Engine No. HP 10997 LP 10994 When 1946

Gearing made at U. S. A. By Westinghouse Co. Gear No. 10579 When 1946

Machinery installed at Hamburg By Westinghouse Co. Engineering When 1960

Particulars of restricted service of ship if limited for classification -

If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3. No Particulars of vegetable or similar cargo oil notation if required -

Is ship an oil tanker? Yes Is a refrigerating installation fitted? Yes If so, is it for cargo purposes? No

Type of refrigerant Dichlorodi Fluoromethane Is the compartment containing the refrigerating machinery 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. Dashes, ticks and other signs of doubtful meaning are not to be used. Wording not applicable to the installation should be cancelled with a black line.

BOILERS AND OTHER STEAM PRESSURE VESSELS.

No. of main boilers 2 Type and licence name, if any Foster Wheeler Position Partial Deck in E.R. Aft (P & S)

No. of aux./donkey boilers - Type and licence name, if any - Position -

(See Circular 2144)

Saturated safety valve pressure, main boilers 565 lbs/in² Aux./donkey boilers -

Steam temperature if superheated 760°F Superheater safety valve pressure 484 lbs/in² Natural, forced or induced draught Forced

No. of steam heated steam generators 1 Generator safety valve pressure 177 lbs/in² (12.5 kg/cm²)

Report on main, aux./donkey boilers and steam heated steam generators (Port and No.) None

If the boilers are oil fired, is the arrangement of pipes, valves and controls in accordance with the Rules? Yes

Licence name of oil burning system Todd Oil Burners Co. No. and position of oil burning pressure units 2-Burning Pumps

upper & lower, starbd. fwd. in E.R., 1-F.O. Service & Transfer Pump (fwd. in E.R. P), 1-Cold Start Ignition Pump (aft in Boiler Room, P).

No. and position of oil fuel settling or service tanks not forming part of the hull structure None

No. of forced draught fans 3 How driven by electric motors

MAIN PROPULSION. (If the main steam turbines, generators or propelling motors have been constructed at another port and are covered by a separate report, the particulars given in that report should not be repeated below but the port and report No. must be stated and all other applicable information must be given.)

Gearred or electric transmission? Geared No. of propellers 1

Maximum S.H.P. for which each line of shafting has been approved 6000 at 85 R.P.M. Machinery numeral 1200

STEAM TURBINES. Description and licence name, if any. (State whether impulse, reaction, impulse-reaction, etc., and whether in tandem.)

1 - Westinghouse 2 cylinders Cross Compound, Impulse & Reaction.

No. of ahead turbines 2 No. of astern turbines 1

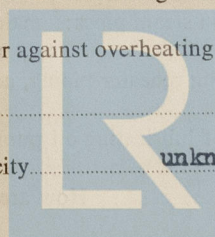
If ship is single screw, can steam be led direct to H.P. turbine and can either H.P. turbine exhaust direct to condenser? yes

Are ahead turbines fitted with emergency overspeed governors as per Rule? Yes Is provision made for reheating the exhaust steam from

the H.P. turbine? No If so, state pressure and temperature of steam on entering reheater -

and leaving reheater - What means are provided for protecting reheat boiler against overheating when by-passed? -

Temperature of stabilisation of H.P. rotor unknown Residual eccentricity unknown



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TURBINES	H.P.		M.P.		L.P.	
	Ahead	Astern	Ahead	Astern	Ahead	Astern
No. of velocity compounded impulse stages	1 stage (2 rows)	-			-	2 - Impulse stages
No. of other impulse stages	-					-
Material of blades	-	-				-
Material of nozzles	-				-	-
No. of rows of reaction blading	1st group 6 2nd group 8	-			1st group 5 2nd " 5	-
Material of blades	-					-
Type of glands	Carbon Rings Comprise with inner & outer sections				Carbon rings comprise with inner & outer sections	
Type of rotor construction	Solid				Solid	
Material of rotor shaft	Unknown				Unknown	
Tensile strength	-				9.490"	
Rotor shaft diameter at bearings	7.240"				-	
Span of bearing centres	-				-	
S.H.P. at approved maximum power	6,000				-	
Corresponding R.P.M.	85 max. 88				-	
Type of casing construction and material. State if fabricated	Sprit Horizontal, Cast Steel				Sprit Horizontal Cast Steel	

REDUCTION GEARING. (Full particulars to be reported on Form 4e) Port Nagasaki Report No. FE-1321

ELECTRIC PROPULSION. (Full particulars to be reported on Form 4d) Port - Report No. -

No. of alternators - Kw. each alternator - at - R.P.M. Position in ship -

No. of propulsion motors - S.H.P. each -

LINE SHAFTING. THRUST SHAFT (If not integral with gearwheel or electric motor shaft) Is it forward or abaft of the gear case or motor? Fwd end of Gear

Diameter at collar 21" Minimum approved tensile strength - INTERMEDIATE SHAFT Diameter 450 mm

Minimum approved tensile strength - SCREWSHAFT Diameter of cone at large end -

Is continuous liner fitted? Yes Type of propeller key Sled runner with adequate root radius

Diameter - Is continuous liner fitted in way of stern tube? Yes Thickness of screw/tubeshaft liner at bearings 20 mm

Thickness between bearings unknown How is end of liner made watertight in propeller boss? by rubber packing

Is an approved oil gland fitted? No If so, state type - Length of bearing next to and supporting propeller 2053 mm Material of bearing Lignum vitae In multiple screw ships, is the liner between stern tube and propeller -

"A" bracket continuous? - If not, is the exposed length of shafting between liners readily visible in drydock? -

Minimum approved tensile strength of screw/tubeshaft - Is screw/tubeshaft of approved corrosion resisting material? unknown

PROPELLER. If of special design, state type - Is it of reversible pitch type? No

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

If so, is it of approved design?				State method of control.										
Propeller	Diameter	Pitch	Built or solid	Area Ratio developed Area Ratio	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry)	For Class 1 or 2 ice strengthening <i>only</i>				Rake of blade
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius		
Working	^{mm} 5800	^{mm} 5612	Solid	0.628	4	^{mm} 190	Cu-Ni-Al-Br	-	-					
Spare	5800	5612	"	0.628	4	190	Cu-Ni-Al-Br	-	-					
not required (b) spare propeller -														

TORSIONAL VIBRATION CHARACTERISTICS. Date of approval with (a) working propeller not required (b) spare propeller -

State barred speed ranges if imposed with (a) working propeller - (b) spare propeller -

STEAM PIPES. Material of main steam pipes unknown Tensile strength -

External diameter 171 mm Thickness 7.5 mm How are flanges attached? by welding

Material of valves and fittings for superheated steam unknown Are any auxiliary steam pipes for essential services over 3" bore? Yes If so, what is the material? Steel Tensile strength -

Hydraulic test pressure on steam pipes: main - and - auxiliary 970 lbs/in² Is adequate drainage provided the steam piping, including reheater piping, and fittings? Yes

LUBRICATION. No. of lubricating oil pumps 2 Are their capacities sufficient to maintain normal oil supply with any one pump out action? Yes How are the pumps driven? Electric Motor

Is an emergency supply of oil automatically available as per Rule? Yes Is an alarm device fitted to give warning of failure or reduction of the oil supply from the pumps? Yes No. of oil coolers 2

Are duplex strainers/filters fitted on the suction/pressure side of the pumps? Both

Are they of magnetic type? Yes

FEED SYSTEM. Are all boilers provided with two separate means of feed? Yes No. of pressure feed heaters 2

Temperature of feed water at admission to boilers 110-130°C No. of duplex feed filters: suction 3 pressure 2 kg/cm² No. of feed water evaporators 2

Capacity of each in tons/hour Approx. 1.5 t/h Is feed water distilled from fresh water carried on board, or sea water? Both

Is the feed water single or double distilled? Single Is the feed system closed? Yes

No. of condensers: main 1 aux. 1-Vacuum Type Cooling surface of main condensers 780 M²

Material specification of condenser tubes unknown No. of air ejectors, main 1 aux. 1

PUMPS	Service for which each pump is connected to be marked thus x											
	SUCTION							DELIVERY				
Name below each essential pump and state its position. Give capacities of bilge pumps.	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel Main	Cond. Extr.	Sea	Feed Tanks	Boiler Feed	Main Cond. Cooling	Oil Fuel Burners	Oil Fuel Tanks	Fire Main
I.G.M. = Imperial Gallon/Minute												
Fire & Butterworth(P) 550 I.G.M.	x		x			x						x
Bilge (P) 370 I.G.M.	x	x				x						
Bilge, Ballast & General Service (S) 700 I.G.M.	x	x	x			x						x
Main Circulating (P), 9532 I.G.M.		x				x			x			
Auxiliary Circulating (S)						x			x			
Main Feed (inb'd & outb'd, P)							x		x			
Harbour Use Feed (P)							x		x			
Main Condensate (inb'd & outb'd, P)					x							
Fuel Oil Transfer (P)				x						x		
Fuel Oil Service (f'w'd & aft, S)				x					x	x		
Fuel Oil Service & Transfer (P)				x					x	x		
Sanitary & Emergency Fire (F. & A. S)			x			x					x	
Fuel Oil Transfer (Main Pump Room, S)				x								
Bilge & Strip (Main P'p Rm, P) 700 IGM		x				x						
Bilge & Ballast (Aux. P'p Rm, S) 700 IGM		x				x						
Bilge & Strip (Aux. P'p Rm, S) 700 IGM		x				x						x

BILGE SUCTIONS. No. and size in each hold, deck tank or pump room. in main pump room: 2 x 4", cofferdams 3 x 4", in aux. pump room: 2 x 3 1/2", cofferdams 2 x 3 1/2", cargo hold 2 x 3 1/2"

No. and size connected to main bilge line in main engine room 2 x 6", 6 x 4"

in aux. engine room - in boiler room - in tunnel -

Size and position of direct bilge suction in machinery spaces 6" - Aft, port, 4" - Aft, starboard.

Size and position of emergency bilge suction in machinery spaces 20" - port Are all bilge suction valves of non-return type? Yes Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Yes

Do the pumping arrangements comply with the Rules, including special requirements for oil tankers, ships carrying cargo oil, on classed for navigation in

~~on classed for navigation in~~ (Strike out words not applicable) Yes

Position of each	Prime Mover	Made by	Port and No. of Report or Certificate	Output in Kw.	Volts	Amps.
Partial Deck in E.R. S:						
Inboard	Steam Turbine	Siemens Schckertwerke	-	400	450	640
Outboard	"	"	-	400	450	640
Suxiliary Generator Room	Diesel Engine	"	-	150	450	240

If electric current is used for essential services at sea, state the minimum No. and capacity of generators required in order that the ship may operate at sea 1 - 400 A

STEERING GEAR. (State type, also No. of steam engines, electric motors, hydraulic pumps and other particulars, including particulars of the alternative means of steering) Two (2) sets of hydraulic pumps and electric motors with separate power leads (A.E.G. Rotary Vane Steering Gear. Rotary pumps driven by 440 V, 20A, Motors).

AIR COMPRESSORS AND RECEIVERS FOR ESSENTIAL SERVICES. (State purpose, capacity, prime mover, position in ship, Port and No. of Certificate) Air Compressor: 2-Ship Service, 110 f³/m, Electric motor, inboard & outboard, port, Hand:- Boat Deck, Air Receiver: 92 f³, port (for Ship Service Compressors), Capacity of a air receiver to emergency generator oil engine:- unknown Port & No. of Certificates: None

Have the Rules for fire extinguishing arrangements been complied with? Yes Brief description of arrangements 9-2 gal. Foam ext., 2-2 gal. dry powders, 1-10 gal. Foam ext., CO² nozzles (31), Steam Smothering for Boiler Compartment, 13-Fire Hydrants, 9-Fire Hoses, 5-Nozzle Applicators, 3-Sand Bozes, 1.8 cu/mtr Total with Scoops

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 Has the manœuvring of the main engines been tried and found satisfactory? Yes Date and duration of full-power sea trials of main engines 2nd December 1964 4 hours Does this machinery installation contain any features of a novel or experimental nature? (State particulars) -

Date of approval of plans for: Main boilers Auxiliary boilers None Donkey boilers None Superheaters Economisers Steam heated steam generators Main steam pipes Shafting Pumping and piping arrangements Separate oil fuel tanks None Propeller (including spare if supplied)

If the installation is a duplicate of a previous case, state name of ship - The foregoing description of the main engines and installation is correct and the particulars are as approved for torsional vibration characteristics. (Strike out words not applicable.)

GENERAL REMARKS. (State if 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 installed on board this ship have been opened out and examined in their entirety in accordance with the requirements of Chapter C, Section 11, of the Rules and Regulations and found to be, so far as seen, sound and free from defects, and sunsequently tested under full power working conditions with satisfactory results. All recommendations in connection with Rule requirements and letters relevant to plans approval have been carried out to our satisfaction. It is recommended that the machinery is eligible to be classed with notation of LMC without the distinguishing mark and with ES 12.64, TS(CL) 12.64, MBS 12.64, SGS 12.64 and SPS 12.64.

Y. Kojima W.A. Cook
Engineer Surveyor to Lloyd's Register of Shipping
Y. Kojima & W.A. Cook

PARTICULARS OF IDENTIFICATION MARKS (including port of origin) of important Forgings and Castings. Copies of certificates to be forwarded with report.

Turbine Rotors Not clear Turbine Casings Not clear Flexible Couplings Not clear Thrust Shaft Not clear Intermediate Shafts Not clear Screw ~~and other~~ Shafts Not clear Propellers Not clear Other important items

DATES OF EXAMINATION OF PRINCIPAL PARTS.

Casings 13.10.64 Rotors 13.10.64 Flexible Couplings 17.10.64 Alignment of Turbines and Gearing - Alignment of Straight Shafting - Boiler Supports 19.10.64 Fitting of Sterntube - Fitting of Propeller 29.10.64 Completion of Sea Connections 27.10.64 Testing of Pumping Arrangements 21.11.64 Oil Fuel Lines 21.11.64 Steering Machinery 13.11.64 Windlass 9.11.64

Date of Committee FRIDAY - 2 APR 1965

Decision LMC ES }
MBS } 12.64
SGS }
TS(CL) }
SPS }

Expenses

Date when a/c rendered

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