

Report on Steam Turbine Machinery.

No. 123020.

Form 4a.

Date of writing Report 6th JUNE 1956 When handed in at Local Office 19 Port of LONDON Received at London Office 26 JUN 1956
No. in Survey held at PETERBOROUGH Date, First Survey 10:456 Last Survey 31 MAY 1956
Reg. Book "San Marzano" (Number of Visits 9)

on the Tons { Gross Net
Built at BIRKENHEAD By whom built MESSRS CAMMELL LAIRD Yard No. 1242 When built
Engines made at PETERBOROUGH By whom made MESSRS P. BROTHERHOOD Engine No. 30511Y When made 1956
Boilers made at By whom made Boiler No. When made
Shaft Horse Power at Full Power Owners Port belonging to
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines 22/23" 1+7 stage, single cycle, axial flow impulse turbine.
No. of Turbines Ahead 1 Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing 1
Astern
Direct coupled to Alternating Current Generator 3 phase 60 periods per second rated 687.5 KVA 450 Volts at 1200 revolutions per minute;
or supplying power for driving Propelling Motors, Type Direct Current Generator
ated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE	H. P.	I. P.	L. P.	ASTERN.
LOADING.				
Impulse loading	No. of rows 2 rows CURTIS + 7 RATEAU			
Reaction loading	No. of stages			
	No. of rows in each stage			

Shaft Horse Power at each turbine { H.P. 1,000 I.P. - L.P. -
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 6,000 I.P. - L.P. -
1st reduction wheel 1,200
main shaft
Motor Shaft diameter at journals { H.P. 3.5 I.P. - L.P. -
Pitch Circle Diameter { 1st pinion 5.356 1st reduction wheel 26.638
2nd pinion - main wheel -
Width of Face { 1st reduction wheel 10"
main wheel -
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 8.5" 1st reduction wheel 9.5"
2nd pinion - main wheel -

Pinion Shafts, diameter at bearings { External 1st 4.25 2nd - diameter at bottom of pinion teeth 1st 6.133 2nd -
Internal 1st 23.25 2nd -
Wheel Shafts, diameter at bearings { 1st 5" + 6" diameter at wheel shroud, { 1st 23.25 Generator Shaft, diameter at bearings
main - Propelling Motor Shaft, diameter at bearings
Intermediate Shafts, diameter as per rule as fitted
Thrust Shaft, diameter at collars as per rule as fitted

Tube Shaft, diameter as per rule as fitted
Screw Shaft, diameter as per rule as fitted
Is the { tube screw } shaft fitted with a continuous liner {
Bronze Liners, thickness in way of bushes as per rule as fitted Thickness between bushes as per rule as fitted
Is the after end of the liner made watertight in the
propeller boss. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner.
the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive.
two liners are fitted, is the shaft lapped or protected between the liners. Is an approved Oil Gland or other appliance fitted at the after end of the tube
aft. If so, state type. Length of Bearing in Stern Bush next to and supporting propeller.

Propeller, diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.
Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbines exhaust direct to the
Condenser No. of Turbines fitted with astern wheels Feed Pumps { No. and size How driven
Pumps connected to the Main Bilge Line { No. and size How driven
Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size ONE ~ 30 gall. p. min.

Are two independent means arranged for circulating water through the Oil Cooler. Suctions, connected both to Main Bilge Pumps and Auxiliary
Bilge Pumps, No. and size:—In Engine and Boiler Room In Pump Room
Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
Pipes, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges.
all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Overboard Discharges above or below the deep water
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass
covering plate. What pipes pass through the bunkers How are they protected
that pipes pass through the deep tanks Have they been tested as per rule

all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times
the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery
ices, or from one compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

HEATERS, &c.—(Letter for record) Total Heating Surface of Boilers Working Pressure
Forced Draft fitted No. and Description of Boilers
Report on Main Boilers now forwarded?

Is { a Donkey
an Auxiliary }

Boiler fitted?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only?

Plans. Are approved plans forwarded herewith for Shafting.
(If not, state date of approval)

Main Boilers.

Auxiliary Boilers.

Donkey Boilers.

Superheaters.

General Pumping Arrangements.

Oil Fuel Burning Arrangements.

Geared turbines
situated aft.

Have torsional vibration characteristics of system been approved.

Date of approval.

SPARE GEAR.

Has the spare gear required by the Rules been supplied.

Yes.

State the principal additional spare gear supplied. Rotor bearings, gear-box bearings; all springs; governor drive spindle, worm, worm-wheel & bevel gear; gland packing rings; 5% nuts & bolts; throttle valve spindle, valve & seat; condenser tubes; steam nozzles & non return valve for air ejector; extraction pump impeller, shaft, sleeve and bearings; governor gear as follows: - weights & carrier, hammer, roller, sleeve & pin; water level gauge tubes.

The foregoing is a correct description,



Manufacturer.

Dates of Survey while building
During progress of work in shops - 10th, 12th & 20th APRIL, 3RD, 10th, 15th, 23RD, 30th & 31ST MAY, 1956.
During erection on board vessel - - -
Total No. of visits.

Dates of Examination of principal parts—Casings 10th & 12th APRIL, 1956. Rotors 23:5:56. Blading 20:4:56. Gearing 15:5:56.
15:5:56. 23:5:56. 23:5:56.

Wheel shaft 23:5:56. Thrust shaft. Intermediate shafts. Tube shaft. Screw shaft.

Propeller. Stern tube. Engine and boiler seatings. Engine holding down bolts.

Completion of fitting sea connections. Completion of pumping arrangements. Boilers fixed. Engines tried under steam.

Main boiler safety valves adjusted. Thickness of adjusting washers.

Rotor shaft, Material and tensile strength. Identification Mark ESC. 30001. W.D. LON. 23:5:56.

Flexible Pinion Shaft, Material and tensile strength. Identification Mark.

Pinion shaft, Material and tensile strength. Electric Furnace Steel. 34.4 ton/10". Identification Mark SHE. JS643. W.D. LON. 23:5:56.

; Chemical analysis.

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment.

1st Reduction Wheel Shaft, Material and tensile strength. Identification Mark 4427 800B. W.D. LON. 4495 23:5:56.

Wheel shaft, Material. Identification Mark. Thrust shaft, Material. Identification Mark.

Intermediate shafts, Material. Identification Marks. Tube shaft, Material. Identification Marks.

Screw shaft, Material. Identification Marks. Steam Pipes, Material. Test pressure.

Date of test. Is an installation fitted for burning oil fuel.

Is the flash point of the oil to be used over 150°F. Have the requirements of the Rules for the use of oil as fuel been complied with.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. If so, have the requirements of the Rules been complied with.

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with.

Is this machinery a duplicate of a previous case. If so, state name of vessel.

General Remarks. (State quality of workmanship, opinions as to class, &c.) This turbine has been built under special survey in accordance with plans approved (H.O. letter 30:5:52.) from materials manufactured under the supervision of Surveyors to the Society, for Messrs Bannell Laird & Co. Contract No 1242. The Workmanship is good.

The turbine, driving through single reduction gearing, "G.E.C." manufactured Alternator No ESP/549/2, connected to resistance bank, was tested in the shops on full load for 4 hours, + 25% overload for 2 hours; governor & overspeed trip were checked; the results being satisfactory. Post trial examination of the turbine & gearing internals showed all in good condition. The turbine is eligible in my opinion, to be fitted to a classed vessel.

The above Generator has been properly installed on board the vessel, examined under full load, full working conditions, & found satisfactory.

Liverpool 5-10-1956

W. Waddle

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 30 : - : When applied for

Special ... £ : : 22 JUN 1956

Donkey Boiler Fee ... £ : : When received

Travelling Expenses (if any) £ 5 : 5 :

(The Committee's Minute)

Assigned

See Liv 78



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Lloyd's Register
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