

REPORT ON STEAM TURBINE MACHINERY. No. 19254.

Received at London Office 17 JAN 1948

Writing Report 3rd JAN, 1948 When handed in at Local Office 5th JAN, 1948 Port of SOUTHAMPTON.

Survey held at SOUTHAMPTON. Date, First Survey 14th February 46. Last Survey 10th December 1947.

g. Book. on the T.S.S. EL MALEK FOAD

Yard No. 4108 When built 1947-12

By whom built John S. Thompson & Co. Ltd

Engine No. 4108 When made 1947-12

By whom made John S. Thompson & Co. Ltd

Boiler No. 4108 When made 1947-12

By whom made John S. Thompson & Co. Ltd

Port belonging to ALEXANDRIA

Owners THE DIVIAL MAIL LINE. S.A.E.

Is Refrigerating Machinery fitted for cargo purposes NO

Is Electric Light fitted YES.

ade for which Vessel is intended MAIL-PASSENGER SERVICE. ALEXANDRIA - MARSEILLES.

AM TURBINE ENGINES, &c.—Description of Engines

of Turbines Ahead 2HP, 2LP Direct coupled single reduction geared to 2 propelling shafts. No. of primary pinions to each set of reduction gearing 2.

Astern 2 i. l. p. s. double reduction geared

coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;

Direct Current Generator

applying power for driving Propelling Motors, Type

Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

BINE DING.		H. P.			I. P.			L. P.			ASTERN.		
		HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
EXPANSION		.64	36.92	1									
"		1.02	27.36	1				1.5	32.0	3	2.5	41.5	1
"		1.0	14.00	4				1.875	32.75	3	4.26	43.5	1
"		1.1875	17.375	7				2.375	33.75	3	6.0	45.5	1
"		1.5	18.0	7				3.125	35.25	2			
"		1.9375	18.875	7				3.8125	36.625	2			
"		2.5625	20.125	7				4.75	38.5	2			
"								5.875	40.75	2			
"								7.0	43.0	1			
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H.P. 1750 1880 aff

I.P. 1750 2120 aff

L.P. 1750 2120 aff

H.P. 3533 3695 aff

I.P. 3533 3695 aff

L.P. 2691 2815 aff

Revolutions per minute, at full power, of each Turbine Shaft

1st pinion 6.8558 1st reduction wheel

2nd pinion 8.9982 main wheel 101.8369

Pitch Circle Diameter

1st pinion 14 1/2

2nd pinion 14 1/2

main wheel 16"

Width of Face

1st reduction wheel

main wheel 18 + 3 Gap.

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings

1st pinion 5 1/2

2nd pinion 6 1/2

main wheel 16"

Pinion Shafts, diameter at bearings

External 1st 5 1/2

Internal 1st 6 1/2

diameter at bottom of pinion teeth

1st 6.71"

2nd 8.8524"

Shafts, diameter at bearings

1st 11"

main 11"

diameter at wheel shroud, 1st 8'-1"

Propelling Motor Shaft, diameter at bearings

as per rule 10.08"

as fitted 10.125"

Thrust Shaft, diameter at collars

as per rule 10.63"

as fitted 11"

Tube Shaft, diameter

as per rule 10.836"

as fitted 11.25"

Shafts, diameter

as per rule 11.24"

as fitted 11.25"

Is the shaft fitted with a continuous liner NO

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

by fusion through the whole thickness of the liner

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a

material insoluble in water and non-corrosive

If two liners are fitted, is the shaft lapped or protected between the liners

Is an approved Oil Gland

appliance fitted at the after end of the tube shaft

YES. U.S. Metallic Packing Co. Ltd

Length of Bearing in Stern Bush next to and supporting propeller 56"

Propeller, diameter 9'-8"

Pitch 8'-11-9'-10"

No. of Blades 4

State whether Movable NO

Total Developed Surface 40.5 square feet.

Angle Screw, are arrangements made so that steam can be led direct to the L.P. Turbine TWIN Screw.

Can the H.P. or L.P. Turbine exhaust direct to the

enser NO

No. of Turbines fitted with astern wheels 2

Feed Pumps

No. and size 2-9'x10'x24" each 50% 1-80T/hr

How driven Steam

Electric, Submersible large electric pump

Pumps connected to the Main Bilge Line

No. and size 2-9'x10'x24" each 50% 1-80T/hr

How driven Steam

Lubricating Oil Pumps, including Spare Pump, No. and size 3-5 1/2'x6"x15"

Two independent means arranged for circulating water through the Oil Cooler

YES

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room E.P. 2-2 1/2'x10'x10' B.R. 2-2 1/2'x10'x10' from well.

olds, &c. 1-10'x10'x10' 1-8'x10'x10' TUNNEL 3-3'x10'x10' Upperhold 2-3'

Water Circulating Pump Direct Bilge Suctions, No. and size 2-11"

Independent Power Pump Direct Suctions to the Engine Room

No. and size 2-4 1/2'x10'x10' B.R. 2-4 1/2'x10'x10'

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES

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 YES

All Sea Connections fitted direct on the skin of the ship YES

Are they fitted with Valves or Cocks VALVES

They fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YES

Are the Overboard Discharges above or below the deep water line BELOW

They each fitted with a Discharge Valve always accessible on the plating of the vessel YES

Are the Blow Off Cocks fitted with a spigot and brass covering plate YES

Pipes pass through the bunkers Oil Fuel Suctions & Heating pipes

How are they protected

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 YES

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 spaces, or from one

partment to another YES

Is the Shaft Tunnel watertight YES

Is it fitted with a watertight door YES

worked from Upper deck

BOILERS, &c. (Letter for record 5.) Total Heating Surface of Boilers 9560 sq. ft.
 Is Forced Draft fitted? Yes No. and Description of Boilers 2 vertical Boilers Working Pressure 300 lbs
 Is a Report on Main Boilers now forwarded? Yes Please see Boiler letter 19/5/47
 Is Donkey Boiler fitted? Yes Spanner Boiler No 326 If so, is a report now forwarded? NO 50 lb/Hr. Pres
 Plans. Are approved plans forwarded herewith for Shaffing (If not state date of approval) 2-4-47 Main Boilers 20-11-46 Heating Boilers Yes Donkey Boilers ✓
 Superheaters 20-11-46 General Pumping Arrangements 2-1-47 Oil Fuel Burning Arrangements 2/11/18/12/47
 Spare Gear. State the articles supplied:— Spare gear for turbines, auxiliaries and boilers supplied as per Rule requirements, also additional spare gear has been supplied to Owner special requirements.

JOHN I. THORNHROFT & Co., LIMITED

J. D. Mather
 Joint Managing Directors, Manuf.

The foregoing is a correct description.

Dates of Examination of principal parts—Casings 22-1-47 - 1/9/47 Rotors 22-1-47 - 24/7/47 Blading 25/3/47 - 24/7/47 Gearing 25/3/47 - 24/7/47 Screw shaft 25/3/47 - 24/7/47
 Wheel shaft 16-6-47 Thrust shaft 16-6-47 Intermediate shafts 2/2/47 - 4/11/47 Tube shaft 10/6/47 - 19/6/47 Screw shaft 25/3/47 - 24/7/47
 Propeller 28/10/47 Stern tube 10/6/47 - 19/6/47 Engine and boiler seatings 10/6/47 Engine holding down bolts 21-9/47
 Completion of pumping arrangements 19/6/47 Boilers fired 3-10-47 Engines tried under steam 24-11-47
 Main boiler safety valves adjusted 300 lb/Hr. Thickness of adjusting washers
 Rotor shaft, Material and tensile strength Steel 34/38 T/O Identification Mark See following
 Flexible Pinion Shaft, Material and tensile strength ✓ Identification Mark ✓
 Pinion shaft, Material and tensile strength Steel (nickel steel) for HP & LP pinion shafts Identification Mark ✓
 1st Reduction Wheel Shaft, Material and tensile strength ✓ Identification Mark ✓
 Wheel shaft, Material Steel Identification Mark ✓ Thrust shaft, Material Steel Identification Mark ✓
 Intermediate shafts, Material Steel Identification Marks ✓ Pinion shafts, Material Steel Identification Marks ✓
 Screw shaft, Material Steel Identification Marks ✓ Steam Pipes, Material Steel Test pressure 900 lb

Date of test 14/9/3/10/47 Is an installation fitted for burning oil fuel YES
 Is the flash point of the oil to be used over 150°F. YES Have the requirements of the Rules for the use of oil as fuel been complied with YES
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo NO If so, have the requirements of the Rules been complied with ✓
 Is this machinery a duplicate of a previous case NO If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under Special Survey in accordance with the Rules and the Secretaries the secretaries' management are in accordance with, is required to, the plans on the approved plans.
Materials & workmanship are good and on completion of fitting on the main & auxiliary machinery tried under full working conditions with satisfactory results.
The machinery of this vessel is eligible in our opinion to be the record of LMC 12, 47.

The amount of Entry Fee ... £ ... :
 Special ... £ 220 0 :
 Donkey Boiler Fee ... £ ... :
 Travelling Expenses (if any) £ ... :
 When applied for, 6/1/1948
 When received, 19
 J. P. W. Mason & Son, Ltd.
 Engineers, Surveyors to Lloyd's Register of Shipping.

Committee's Minute 20 FEB 1948

Assigned + LMC 12, 47
 Fitted for oil fuel 12.47 Flash point above 100°F. FD. O.G.
2 WTB 300 lb Spt.
D.B. 50 lb

Rpt. 9a.

Port of SOUTHAMPTON Continuation of Report No. 19254 dated 3rd JAN, 1948 on the

T.S.S. "ELMAHEK FORD"

IDENTIFICATION MARKS ON ROTOR SHAFTS

STARBOARD H.P. PORT H.P.
 E.S.G. E.S.G.
 48364 T. S. 1080 48363 T. S. 1080.
 LLOYD'S J.H.N. 1-10-46 LLOYD'S J.H.N. 1, 11-46

L.P. aft end. L.P. aft end.
 E.S.G. E.S.G.
 48365 T. S. 1080 48366 T. S. 1080.
 LLOYD'S J.H.N. 28-10-46 LLOYD'S J.H.N. 28-10-46.

L.P. Forward end. L.P. Forward end.
 E.S.G. E.S.G.
 48367 T. S. 1080. 48368 T. S. 1080.
 LLOYD'S J.H.N. 17-11-46 J.H.N. LLOYD'S J.H.N. 28-10-46.

Under General Please see Electrical 1st Entry Report re this machine.
This machine is placed at the forward starboard side of Engine Room on the 3rd platform. Engine No. T.2/48354. Set No 16. 300 BHP.
Built by Messrs. W. H. Allen & Sons, Ltd. under Admiralty Survey. Please see letter to the Secretary dated 1-1-48.

J. Mather