

Report on Steam Turbine Machinery. No. 109984

Writing Report 19 When handed in at Local Office -1. DEC. 1952,19 Port of NEWCASTLE-ON-TYNE Received at London Office 5-DEC-1952
 Survey held at NEWCASTLE ON TYNE Date, First Survey 24th September 1952 Last Survey 21st November 1952
 Book 7(s) on the S. S. "CALTEX LIVERPOOL" (Number of Visits 116)
 at NEWCASTLE ON TYNE By whom built R. W. HAWTHORN LESLIE & CO. Ltd. Card No. 706 Tons {Gross 1184 Net 688.6
 es made at Do Do By whom made Do Do Engine No. 4090 When built 1952
 rs made at Do Do By whom made Do Do Boiler No. 4090 When made 1952
 Horse Power at Full Power 8,200 (MAX) 7,300 (SERV) Owners Port belonging to
 Horse Power as per Rule 1,640 (MAX) 1,460 (SERV) Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 for which Vessel is intended CARRYING PETROLEUM IN BULK

TURBINE ENGINES, &c.—Description of Engines SINGLE SCREW DOUBLE REDUCTION
 Ahead I.H.P. Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing Two
 Astern I.L.P. double reduction geared
 coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;
 supplying power for driving Propelling Motors, Type Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

LINE	H. P.	I. P.	L. P.	ASTERN.
ING.				
No. of rows	13		1	2-3 ROW CURTIS WHEELS.
No. of stages			12	
No. of rows in each stage			ONE MOVING ONE FIXED	

Horse Power at each turbine H.P. 4160/4510 I.P. 8-9982 L.P. 3140/3690
 Shaft diameter at journals H.P. 4 1/2" I.P. 8-9982 L.P. 3 1/2" Pitch Circle Diameter 1st pinion 14.14003 1st reduction wheel 56.13164 2nd pinion 17.1334 main wheel 143.9232
 between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 16 1/4" 1st reduction wheel 16 1/4" 2nd pinion 16 1/4" main wheel 2'-8" HP 8-8562
 Pinion diameter 1st 8 3/8" 2nd 8 3/8" Pinion Shafts, diameter at bearings External 1st HP 1" 2nd HP 12" Internal 1st LP 1" 2nd LP 12" diameter at bottom of pinion teeth 1st LP 13.998 2nd LP 16.8852
 Shafts, diameter at bearings 1st 8" 2nd 8" main 19" diameter at wheel shroud, 1st 56.13164 Generator Shaft, diameter at bearings main 144.5632 Propelling Motor Shaft, diameter at bearings
 Intermediate Shafts, diameter as per rule 17 3/4" as fitted 17 3/4" Thrust Shaft, diameter at collars as per rule as fitted
 ft, diameter as per rule as fitted 19 3/8" as fitted 19 3/8" Is the tube screw shaft fitted with a continuous liner YES

Liners, thickness in way of bushes as per rule 7/8" as fitted 8" Thickness between bushes as per rule 27/32" as fitted 32" Is the after end of the liner made watertight in the boss YES If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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
 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
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller 6'-5 3/4"
 diameter 19'-0" Pitch 15'-9" No. of Blades 4 State whether Moveable NO Total Developed Surface 156 square feet.
 screw, are arrangements made so that steam can be led direct to the L.P. Turbine YES Can the H.P. or L.P. Turbines exhaust direct to the
 YES No. of Turbines fitted with astern wheels ONE (LP) Feed Pumps No. and size ONE 6" x 8 1/2" x 13" HARBOUR FEED - 1530 GALS/H.R. TWO TURBINE MULTISTAGE - 13,650 GALS/H.R.
 How driven STEAM

connected to the Main Bilge Line No. and size ONE F.B. 14" x 10" x 15" - 160 T/H. ONE G.S. 10 1/2" x 7" x 10" - 50 T/H. ONE ROTARY G.S. 400 GALS/MIN.
 How driven STEAM ELECT. MOTOR.
 Pumps, No. and size NONE Lubricating Oil Pumps, including Spare Pump, No. and size TWO 5" DRYSDALE 180 GALS/MIN.
 dependent means arranged for circulating water through the Oil Cooler YES Suctions, connected both to Main Bilge Pumps and Auxiliary
 ps, No. and size:—In Engine and Boiler Room ONE 4" P.S. (FOR) ONE 4" AFT WELL ONE 2 1/2" I.D. c/d In Pump Room 3-4"
 GAIN LAR HAT 1-2" P.S. FOR CARGO HOLD 1-2" P.S. FOR PUMPROOM 1-2" FOR c/d 1-4" ER SIDE c/d 1-2" P.S.

er Circulating Pump Direct Bilge Suctions, No. and size ONE - 14" Independent Power Pump Direct Suctions to the Engine Room
 and size ONE - 6" Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES
 e 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

Connections fitted direct on the skin of the ship YES Are they fitted with Valves or Cocks BOTH
 ed 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
 Are 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
 ate YES What pipes pass through the bunkers How are they protected
 pass through the deep tanks Have they been tested as per rule

es, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times YES
 gement 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
 om one compartment to another YES Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from
 &c.—(Letter for record Total Heating Surface of Boilers
 Draft fitted YES No. and Description of Boilers TWO - WATER TUBE Working Pressure 480 LBS/SQ IN
 on Main Boilers now forwarded? YES

Is { a Donkey Boiler fitted? No. If so, is a report now forwarded? ☒
 { an Auxiliary }
 Is the donkey boiler intended to be used for domestic purposes only? ☒
 Plans. Are approved plans forwarded herewith for Shafting 7-8-51 Main Boilers. Auxiliary Boilers. ☒ Donkey Boilers. ☒
 (If not, state date of approval)
 Superheaters 1-10-51 General Pumping Arrangements 26-10-52 Oil Fuel Burning Arrangements
 Geared turbines situated aft. Have torsional vibration characteristics of system been approved? YES Date of approval 21-8-51

SPARE GEAR.

Has the spare gear required by the Rules been supplied? YES

State the principal additional spare gear supplied.

The foregoing is a correct description.

R. & W. HAWTHORN LESLIE & CO. LIMITED.

Dates of Survey while building
 During progress of work in shops - (1951) SEPT. 27, OCT. 19, NOV. 28, 22, 30, DEC. 11, 18 (1952) JAN. 22, 24, 28, FEB. 1, 15, 25, MAR. 6, 10, 12, 14, 28, APR. 15, 17, 21, 23, 25, 29, 31, MAY 1, 15, 19, 20, 21, 22, 23, 24, 29, JUNE 4, 6, 11, 13, 14, 19, 25, 26, 27, 30, JULY 1, 3, 4, 9, 11, 15, 16, 17, 18, 21, 23, AUG. 5, 6, 11, 14, 15, 19, 21, 22, SEPT. 2, 3, 4, 8, 9, 10, 12, 16, 17, 18, 22, 23, 24, 25, 26, 27, 30, OCT. 1, 2, 5, 6, 7, 8, 9, 10, 14, 16, 17, 30, 31, NOV. 3, 4, 6, 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, DEC. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, JAN. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, FEB. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, MAR. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, APR. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, MAY 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, JUNE 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, JULY 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, AUG. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, SEPT. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, OCT. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, NOV. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, DEC. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 116.
 Total No. of visits.

Dates of Examination of principal parts—Casings 10-12-51 Rotors 24-5-52 Blading 24-5-52 Gearing 23-5-52
 Wheel shaft 15-4-52 Thrust shaft 15-4-52 Intermediate shafts 23-29-5-52 Tube shaft ☒ Screw shaft 7-5-52
 Propeller 7-5-52 Stern tube 7-5-52 Engine and boiler seatings 17-7-52 Engine holding down bolts 15-8-52
 Completion of fitting sea connections 22-5-52 Completion of pumping arrangements 11-11-52 Boilers fixed 21-7-52 Engines tried under steam 12-7-52
 Main boiler safety valves adjusted 31-10-52 Thickness of adjusting washers PORT { DRUM .245" PSPT .448" STAR .480" STAR { DRUM .45" PSPT .471" STAR .521"
 Rotor shaft, Material and tensile strength SIEMENS STEEL 28/40 T/D" Identification Mark HP N° 8737
 Flexible Pinion Shaft, Material and tensile strength SIEMENS STEEL 28/40 T/D" Identification Mark LP N° 8737
 Pinion shaft, Material and tensile strength SIEMENS STEEL OVER 40 T/D" Identification Mark HP N° 8739
 ; Chemical analysis 3 1/2% NICKEL STEEL. Identification Mark LP N° 8739
 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 SIEMENS STEEL HP N° 8737
 Wheel shaft, Material SIEMENS STEEL Identification Mark N° 8737
 Intermediate shafts, Material O.H.I.S. Identification Marks L.R. N° 2981 (N° 1) L.R. N° 3044 (N° 2) Thrust shaft, Material SEE WHEEL SHAFT Identification Mark ☒
 Screw shaft, Material O.H.I.S. Identification Marks L.R. N° S 1863 (SPARE) " S. 2081 Tube shaft, Material ☒ Identification Marks ☒
 Date of test 29-5-52 AND SUBS. Steam Pipes, Material S.D. STEEL. Test pressure MAIN 150 LBS. AUX 100 LBS.
 Is the flash point of the oil to be used over 150°F. YES ☒ Is an installation fitted for burning oil fuel? YES ☒
 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? NO If so, state name of vessel.

General Remarks. (State quality of workmanship, opinions as to class, &c.)
 This machinery has been constructed and installed under Special Survey in accordance with the Rules of the Society, Approved Plans Secretary's letters.

The materials and workmanship are good.
 The machinery was examined under working conditions during mooring trial and under full working conditions at sea with satisfactory results and is eligible in my opinion for Classification with the following remarks:-
 # L.M.C. 11-52 T.S. (C.L.)

AGREED FEE = 25% OLD FEE } E.B. CONSTR. 100% NEW FEE INSTALLATION
 75% NEW FEE
 The amount of Entry Fee
 25% E.B. (CONST. OLD) 70-9-0
 Special
 75% " " (NEW) 205-6-0
 Donkey Boiler Fee
 INSTALLATION (100% NEW) 151-0-0
 Travelling Expenses (if any)
 E.W. (30 TONS) 8-15-0
 When applied for 4 DEC 1952
 When received 19

T.O. Morris
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned + LMC 11, 52
 FRI. 9 JAN 1953
 FD. CL 2WTB 480lb (SPT 470lb)
 (with torsional endorsement)