

REPORT ON STEAM TURBINE MACHINERY.

No. 14953

Received at London Office 13 APR 1950

10 When handed in at Local Office

8/4/10⁵⁰ Port of Belfast

o. in Survey held at
Reg. Book.

Belfast

Date, First Survey 26 Oct 1948 Last Survey 24 March 1950

on the

Turn Screw Steamer "Runic"

(Number of Visits)

Tons Gross 13586.87

uilt at

Belfast

By whom built Harland & Wolff Ltd.

Yard No. 1414 When built 1950

Engines made at

- D. -

By whom made

- D. -

Engine No. 1414 When made 1950

Boilers made at

- D. -

By whom made

- D. -

Boiler No. 1414 When made 1950

Shaft Horse Power at Full Power 14,000 SERVICE 15,400 MAX.

Owners Shaw Savill & Albion Co. Ltd.

Port belonging to Southampton

om. Horse Power as per Rule 3280 MW

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

rade for which Vessel is intended

Ocean Going

STEAM TURBINE ENGINES, &c. — Description of Engines Parsons' All-Reaction Forward Turbines; All-Impulse

No. of Turbines 6 Direct coupled, single reduction geared to Two propelling shafts. No. of primary pinions to each set of reduction gearing THREE

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

upplying power for driving

Propelling Motors, Type

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

RBINE
IDING.

END TIGHTENED H.P. REACTION			END TIGHTENED I.P. REACTION			RADIAL L.P. REACTION			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.
0.73	1'-8.96"	13	1.42	2'-1.84"	8	2.76	3'-7.52"	3			
0.91	1'-9.32"	12	2.07	2'-3.14"	8	3.46	3'-8.92"	1	H.P. IMPULSE		
1.12	1'-9.74"	12	2.45	2'-3.9"	7	3.955	3'-9.91"	1	0.74	3'-9.74"	1
1.4	1'-10.3"	12	3.35	2'-5.7"	7	4.555	3'-11.11"	1	1.27	3'-10.27"	1
1.55	1'-10.6"	12	4.25	2'-7.5"	7	5.2	4'-0.4"	1	2.4	3'-11.4"	1
						5.945	4'-1.89"	1			
						6.79	4'-3.58"	1	L.P. IMPULSE		
						7.735	4'-5.47"	1	2.2	4'-7.7"	1
						8.43	4'-6.86"	1	4.0	4'-9.75"	1
						8.925	4'-7.85"	1	5.6	4'-11.6"	1
						9.42	4'-8.84"	1			

ft Horse Power at each turbine { H.P. 2333 ✓
I.P. 2333 ✓
L.P. 2333 ✓
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 2232 ✓
I.P. 2232 ✓
L.P. 2232 ✓
1st reduction wheel -
main shaft 119 Rev. ✓
123 Rev. ✓

or Shaft diameter at journals { H.P. 6 1/2" WITH Pitch Circle Diameter { 1st pinion 7.927" 1st reduction wheel -
I.P. 6 1/2" 2nd pinion - main wheel 148.6847" Width of Face { 1st reduction wheel -
L.P. 7 1/2" Hole main wheel 40 + 14 GAP

tance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 2'-7 3/4" 1st reduction wheel -
2nd pinion - main wheel 3'-3 7/8"

able Pinion shafts, diameter { 1st - Pinion Shafts, diameter at bearings External 1st 6 1/2" 2nd - diameter at bottom of pinion teeth { 1st 7.35" ✓
2nd 1 1/2" 2nd -

eel Shafts, diameter at bearings { 1st - diameter at wheel shroud, { 1st - Generator Shaft, diameter at bearings
main 20" ✓ main 11'-11 3/4" Propelling Motor Shaft, diameter at bearings

ermediate Shafts, diameter as per rule app. 16 1/8" ✓ Thrust Shaft, diameter at collars as per rule app. 17" ✓
as fitted

oe Shaft, diameter as per rule - as fitted - Screw Shaft, diameter as per rule app. 18" ✓ Is the { type screw } shaft fitted with a continuous liner { yes ✓
as fitted

onze Liners, thickness in way of bushes as per rule app. 15/16" ✓ Thickness between bushes as per rule app. 25/32" ✓ Is the after end of the liner made watertight in the
as fitted

eller boss yes ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -
he 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 -

wo 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
No ✓ If so, state type Length of Bearing in Stern Bush next to and supporting propeller 6'8" ✓

propeller, diameter 17'9" Pitch 16.42 No. of Blades 4 State whether Moveable Solid Total Developed Surface 110.3 square feet.
ngle Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Turn Screw. Can the H.P. or I.P. Turbine exhaust direct to the

tenser yes No. of Turbines fitted with astern wheels H.P. & L.P. Feed Pumps { No. and size 2 Turbo 158,500 lb/hr., 2 Aux. 4,500 lb/hr.
How driven ✓ Steam ✓ Elec. Motor ✓

aps connected to the Main Bilge Line { No. and size Ballast 200 tons/hr., Gen. Ser. 200 tons/hr., Bilge 175 tons/hr.
How driven Electric Motor

last Pumps, No. and size 1 c 200 tons/hr. ✓ Lubricating Oil Pumps, including Spare Pump, No. and size 3 c 12,000 gals./hr. ✓
two independent means arranged for circulating water through the Oil Cooler yes ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

ps, No. and size: — In Engine and Boiler Room 8 c 4", 4 c 2 1/2", 2 c 2 1/2", 1 c 3 1/2" Tunnel well In Pump Room
olds, &c. N°1-2 c 3 1/2", N°2-2 c 3 1/2", N°3-2 c 3 1/2", N°4-2 c 3 1/2", N°5-2 c 3 1/2" + 2 c 3", N°6-2 c 3", 2-3 1/2" N°4 Turn sk.

n Water Circulating Pump Direct Bilge Suctions, No. and size 2 c 15" ✓ Independent Power Pump Direct Suctions to the Engine Room
es, No. and size 2 c 6" ✓ Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bones 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 + fabricated boxes. Are they fitted with Valves or Cocks Both ✓

they fired 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 Both ✓
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 ✓
at pipes pass through the bunkers None ✓ How are they protected -
at pipes pass through the deep tanks None ✓ 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 platform.

BOILERS, &c.—(Letter for record **E**) Total Heating Surface of Boilers **28980 sqft.**
 Is Forced Draft fitted **Yes** No. and Description of Boilers **2 Foster Wheeler controlled SW** DESIGN **490 lb.**
 Is a Report on Main Boilers now forwarded? **Yes**
 Is **a Donkey** Boiler fitted? **Yes** If so, is a report now forwarded? **Yes**
 Is the donkey boiler intended to be used for domestic purposes only? **No**
 Plans. Are approved plans forwarded herewith for Shafting **10-8-48** Main Boilers **11-5-48** Auxiliary Boilers **—** Donkey Boilers **11-5-48**
 (If not state date of approval)
 Superheaters **18-6-48** General Pumping Arrangements **12-10-49** Oil Fuel Burning Arrangements **12-10-49**
 Has the spare gear required by the Rules been supplied? **Yes** **SPARE GEAR** (See list attached)
 State the principal additional spare gear supplied

Spare Tail Shaft

LLOYD'S
 52914
 10-10-49 ROB

For HARTLAND AND WOLFF, LIMITED

J. V. Park

The foregoing is a correct description,

1948 Oct 26 Nov 18, 24 Dec 13, 23 Jan 4 28 Mar 3, 10, 22, 25, 28, 31 Apr 6, 7 May 17, 18, 23, 24, 26, 31 June 1, 2, 3, 6, 7, 8, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 28, 29, 30 July 1, 5, 6, 18, 19, 20, 22, 26, 29 Aug 1, 2, 3, 4, 5, 8, 9, 10, 12, 15, 17, 18, 19, 22, 23, 24, 29, 30 Sept 1, 2, 5, 6, 7, 8, 9, 14, 15, 16, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30 Oct 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, 26, 27, 28 Nov 1, 2, 3, 4, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 21, 22, 23, 25, 29, 30 Dec 1, 2, 5, 6, 7, 8, 9, 12, 13, 14, 15, 16, 19, 20, 21, 22, 29, 30 1949 Jan 3, 4, 5, 6, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 25, 26, 27, 30, 31 Feb 1, 2, 3, 4, 6, 7, 8, 9, 10, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 Mar 1, 2, 3, 4, 5, 8, 9, 13, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 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 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 Jun 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 Jul 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 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 Sep 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 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 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 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

Dates of Examination of principal parts—Casings **28-9-49** Rotors **To 28-10-49** Blading **To 28-10-49** Gearing **To 5-10-49**
 Wheel shaft **5-1-9-49** Thrust shaft **7-10-49** Intermediate shafts **To 19-10-49** Tube shaft **—** Screw shaft **8-5-10-49**
 Propeller **28-2-49** Stern tube **14-9-49** Engine and boiler seatings **20-10-49** Engine holding down bolts **5-12-1-50**
 Completion of fitting sea connections **20-10-49** Completion of pumping arrangements **17-3-50** Boilers fixed **27-10-49** Engines tried under steam **24-3-50**
 Main boiler safety valves adjusted **9-3-50** Thickness of adjusting washers **SAT. 1/32 SAT. 7/32 SV 3/16 SAT. 9/16 SH. 7/16 SV 3/16**
 Rotor shaft, Material and tensile strength **S.M. Steel** **36/38 T₀** Identification Mark **—**
 Flexible Pinion Shaft, Material and tensile strength **—** Identification Mark **—**
 Pinion shaft, Material and tensile strength **E.F. Steel** **43/46 T₀** Identification Mark **—**
 1st Reduction Wheel Shaft, Material and tensile strength **P-51609** Identification Mark **P-53643**
 Wheel shaft, Material **S.M. Steel** Identification Mark **S-2219** Thrust shaft, Material **S.M. Steel** Identification Mark **S-5364**
 Intermediate shafts, Material **S.M. Steel** Identification Marks **See attached list** Tube shaft, Material **—** Identification Marks **—**
 Screw shaft, Material **S.M. Steel** Identification Marks **P-52915 S-53828** Steam Pipes, Material **Steel** Test pressure **1275**
 Date of test **Nov. Dec. 1949** 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 **—**
 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 **Yes** If so, state name of vessel **S/S PERSIC Cammell Laird No. 1**

General Remarks (State quality of workmanship, opinions as to class, &c.) **This machinery has been constructed under special survey & installed in accordance with the Society's Rules, approved plans & Secretary's letters. The materials & workmanship are good. The machinery was run under full working conditions with satisfactory results.**

NOTE Forging certificates have been checked & will be forwarded with F.E. report of Sister vessel.

The machinery of this vessel is, in our opinion, to be classed in Register Book with Record of + LMC 3.50. 2 WT Boilers 490 lb (Spt 425 lb) DB 125 lbs, TS (C.L.) Filler for oil fuel 3.50. FP above 150°F. Subject to repair of lower tube in start boiler being run at Own convenience.

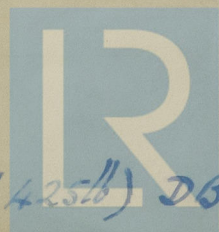
The amount of Entry Fee ... £ 527-0-0 When applied for,
 Special Structure ... £ 13-8-0 7.4 19.50
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 19.50

Committee's Minute

FRI. 5 MAY 1950

Assigned + LMC 3.50 Subject

FITTER FOR OIL FUEL 3.50 FLASH POINT ABOVE 150°F. F.D. C.L. 2 WT B 490 lb (Spt 425 lb) DB 125 lb.



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