

REPORT ON MACHINERY.

No. 7191

Received at London Office WED. 18.4.

Date of writing Report 12th April 1917 When handed in at Local Office 19 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 8th Aug 1912 Last Survey 7th April 1917
 Reg. Book. S.S. Justitia (Number of Visits 214)
 Master Hamilton Built at Belfast By whom built Harland & Wolff L^o When built 1917
 Engines made at Belfast By whom made - when made -
 Boilers made at - By whom made - when made -
 Registered Horse Power ✓ Owners Atlantic Steam Navigation Co Port belonging to Liverpool
 Shaft Horse Power at Full Power 6200 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Gross 32120
 Tons Net 19738

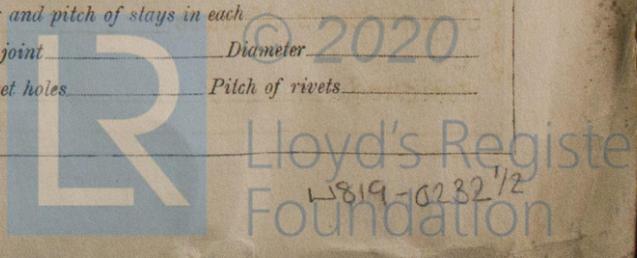
TURBINE ENGINES, &c.—Description of Engines Direct coupled Parsons type No. of Turbines one L.P
 Diameter of Rotor Shaft Journals, H.P. ✓ L.P. 22 1/2 with 15" hole Diameter of Pinion Shaft ✓
 Diameter of Journals ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle ✓
 Diameter of Wheel Shaft ✓ Distance between Centres of Bearings ✓ Diameter of Pitch Circle of Wheel ✓
 Width of Face ✓ Diameter of Thrust Shaft under Collars ✓ Diameter of Tunnel Shaft as per rule 13.8 ✓
 No. of Screw Shafts one Diameter of same as per rule 14.76 ✓ Diameter of Propeller 13'-0" Pitch of Propeller 10'-0"
 No. of Blades 4 State whether Moveable No Total Surface 73 sq ft. Diameter of Rotor Drum, H.P. ✓ L.P. 10'-10" Astern ✓
 Thickness at Bottom of Groove, H.P. ✓ L.P. 13" to 18" Astern ✓ Revs. per Minute at Full Power, Turbine 200 Propeller 200

PARTICULARS OF BLADING.

	H.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.
1ST EXPANSION				8"	12'-2 1/2"	8			
2ND				10.375"	12'-7 1/2"	8			
3RD				13.5"	13'-1 1/2"	7			
4TH				14.5"	13'-9 1/2"	7			
5TH				17.5"	13'-9 1/2"	7			
6TH				14.5"	13'-9 1/2"	6			
7TH									
8TH									

No. and size of Feed pumps
 No. and size of Bilge pumps
 No. and size of Bilge suction in Engine Room
 In Holds, &c.
 No. of Bilge Injections - sizes - Connected to condenser, or to circulating pump - Is a separate Donkey Suction fitted in Engine Room & size -
 Are all the bilge suction pipes fitted with roses - Are the roses in Engine room always accessible -
 Are all connections with the sea direct on the skin of the ship - Are they Valves or Cocks -
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates - Are the Discharge Pipes above or below the deep water line -
 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 are carried through the bunkers - How are they protected -
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times -
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges -
 Is the Screw Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

BOILERS, &c.—(Letter for record -) Manufacturers of Steel -
 Total Heating Surface of Boilers - Is Forced Draft fitted - No. and Description of Boilers -
 Working Pressure - Tested by hydraulic pressure to - Date of test - No. of Certificate -
 Can each boiler be worked separately - Area of fire grate in each boiler - No. and Description of Safety Valves to each boiler -
 Area of each valve - Pressure to which they are adjusted - Are they fitted with easing gear -
 Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers - Length - Material of shell plates -
 Thickness - Range of tensile strength - Are the shell plates welded or flanged - Descrip. of riveting: cir. seams -
 long. seams - Diameter of rivet holes in long. seams - Pitch of rivets - Lap of plates or width of butt straps -
 Per centages of strength of longitudinal joint - Working pressure of shell by rules - Size of manhole in shell -
 rivets - plates -
 Size of compensating ring - No. and Description of Furnaces in each Boiler - Material - Outside diameter -
 Length of plain part - Thickness of plates - Description of longitudinal joint - No. of strengthening rings -
 top - bottom - crown - bottom -
 Working pressure of furnace by the rules - Combustion chamber plates: Material - Thickness: Sides - Back - Top - Bottom -
 Pitch of stays to ditto: Sides - Back - Top - If stays are fitted with nuts or riveted heads - Working pressure by rules -
 Material of stays - Diameter at smallest part - Area supported by each stay - Working pressure by rules - End plates in steam space -
 Material - Thickness - Pitch of stays - How are stays secured - Working pressure by rules - Material of stays -
 Diameter at smallest part - Area supported by each stay - Working pressure by rules - Material of Front plates at bottom -
 Thickness - Material of Lower back plate - Thickness - Greatest pitch of stays - Working pressure of plate by rules -
 Diameter of tubes - Pitch of tubes - Material of tube plates - Thickness: Front - Back - Mean pitch of stays -
 Pitch across wide water spaces - Working pressures by rules - Girders to Chamber tops: Material - Depth and thickness of girder at centre -
 Length as per rule - Distance apart - Number and pitch of stays in each -
 Working pressure by rules - Steam dome: description of joint to shell - % of strength of joint - Diameter -
 Thickness of shell plates - Material - Description of longitudinal joint - Diameter of rivet holes - Pitch of rivets -
 Working pressure of shell by rules - Crown plates: Thickness - How stayed -



SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____

Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____

Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED? _____ If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied:— See other sheet ✓

The foregoing is a correct description for Harland & Wolff Ltd. Manufacturer.

Woburn

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits

See other sheet

Is the approved plan of main boiler forwarded herewith ✓

Dates of Examination of principal parts—Casings 17-3-14 Rotors 11-9-13 Blading 7-3-14 Gearing ✓

Rotor shaft 8-4-13 Thrust shaft ✓ Tunnel shafts 30-5-14 Screw shaft 30-5-14 Propeller 3-2-14

Stern tube 7-5-14 Steam pipes tested ✓ Engine and boiler seatings ✓ Engines holding down bolts ✓

Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam ✓

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓

Material and tensile strength of Rotor shaft S. Steel, 31.8 + 32.0 tons sq. Identification Mark on Do. LL04DS 7.5.14

Material and tensile strength of Pinion shaft ✓ Identification Mark on Do. 30.5.14

Material of Wheel shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft ✓ Identification Mark on Do. ✓

Material of Tunnel shafts S. Steel Identification Marks on Do. LL04DS 7.5.14 Material of Screw shafts Do Identification Marks on Do. Do

Material of Steam Pipes ✓ Test pressure _____ 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 Section 49 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, etc.) See other sheet ✓

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19

B. L. Beveridge
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. - 1 MAY. 1917

Assigned See S. E. rpt. attached

Rpt. 9a.

Port of Belfast Continuation of Report No. 7491 dated 12th April on the

S.S. Justicia

Spare Gear

2 Propeller Shafts for Reciprocating Engine
1 Turbine

1 Turbine Propeller
3 blades Port Engine

3 Staves
2 Bosses complete.

Pair H.P. cranks pin brasses

L.P. top end

L.P.

Set piston rings for one H.P. M.P. L.P. piston

1 Guide sleeve each for H.P. + L.P.

1 Valve spindle H.P.

1 L.P.

Set piston valve rings H.P. M.P. + L.P.

1 Eccentric Strap complete

1 Link block & brasses

4 Cylinder escape valve springs

1 Safety valve spring for every four valves

240 Boiler tubes. 60 Condenser tubes

1 Impeller & spindle main circulating pump

Set spare gear for auxiliary pumps, engines, fans etc

Turbine Gear

Gland Rings 2 sets (1 per set)

1 Escape valve spring

5 Segments for each of 1st & 2nd expansions of Rotan

4 - - - 3rd 4th 5th 6th

6 - - - 1st 2nd 3rd 4th 5th - - - Cylinders

5 - - - 6th

Blade Stops, 2 male + 2 female for each section

Dummy Strip 5%. Gland Strip 5%

Light glass cylinders for oil drains, 1 complete set

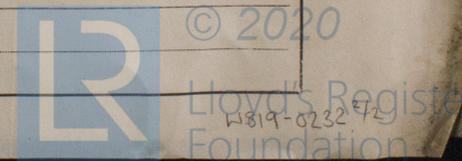
Adjusting block liners 2 sets

Thermometers for oil drain, 1 for each light glass

Inlet, 1

All spare gear to Lloyd's Rules for Recip. Engines in addition.

See over



List of Pumps

2	Pain Main Feed, Weirs	20" x 14" x 27"
2	Main Air	20" x 33" x 21"
2	Hotwell	12 1/2" x 12 1/2" x 26"
2	Turbine oil	4" x 4" x 15"
3	Ballast	12 1/2" x 14" x 24"
2	Bilge	10 1/2" x 12" x 21"
2	Sanitary	Electrically driven
1	aux & Feed	-
2	Fresh Water	-
1	aux & Air	-
4	Main Centrif. Circulating	11" x 10" with 5 1/2" Impeller
1	aux	Electrically driven
1	General Service	12" x 8" x 12"
4	Ach Expeller pumps	Turbine driven
1	Emergency Feed	12" x 8" x 12"
1	aux & air pump	9" x 15" x 12"

R. J. Beveridge

