

N Type Standard Turbines, gearing  
 Now stated to have been forwarded to Furness Shipbuilding Co.  
 Middlesbrough for fitting

# REPORT ON MACHINERY.

No. 72581

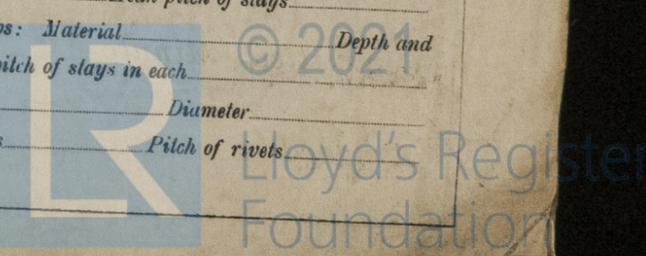
Pressure to \_\_\_\_\_  
 the Boiler \_\_\_\_\_  
 Gear fitted \_\_\_\_\_  
 of writing Report 17<sup>th</sup> Feb 1919 When handed in at Local Office \_\_\_\_\_  
 Port of \_\_\_\_\_  
 Survey held at Newcastle Date, First Survey 22<sup>nd</sup> May 1918 Last Survey \_\_\_\_\_  
 Book \_\_\_\_\_  
 on the \_\_\_\_\_  
 Built at \_\_\_\_\_ By whom built \_\_\_\_\_  
 By whom made Parsons Marine Steam Turbine Co 166 when made \_\_\_\_\_  
 Owners The Shipping Controller when made \_\_\_\_\_  
 Is Refrigerating Machinery fitted for cargo purposes \_\_\_\_\_  
 Is Electric Light fitted \_\_\_\_\_

**TURBINE ENGINES, &c.**—Description of Engines Geared Turbines No. of Turbines 2  
 Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2"  
 Diameter of Pinion Shaft 1 1/2" gear 4 1/2", 2<sup>nd</sup> gear 9"  
 Distance between Centres of Bearings 1 1/2'-3", 2<sup>nd</sup> 3'-10 1/2" Diameter of Pitch Circles 1 1/2'-16.29" 2<sup>nd</sup> 13.558"  
 Diameter of Thrust Shaft under Collars \_\_\_\_\_  
 Diameter of Tunnel Shaft \_\_\_\_\_  
 Diameter of Propeller \_\_\_\_\_  
 Revs. per Minute at Full Power, Turbine 3500 Propeller 78

## PARTICULARS OF BLADING.

EXPANSION	H. P. Impulse			L. P. Reaction			H. 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.
1 <sup>st</sup>	1" + 1 1/16"	29 1/4" + 29 15/16"	2	2 1/2"	26 1/4"	2	Impulse 1 1/2"	29 1/2" + 30 1/4"	2
"	3/4"	29"	1	2 5/8"	27 1/4"	2	L.P. Astern		
"	1"	29 1/4"	1	3 1/4"	28 1/2"	2	1 <sup>st</sup> Impulse 2 3/4"	30 1/2"	1
"	1 3/8"	29 5/8"	1	2 3/8"	34 3/4"	1	2 <sup>nd</sup> do 4 1/8"	32"	1
"	1 7/8"	30 1/8"	1	2 7/8"	35 3/4"	1	1 <sup>st</sup> Reaction 1 3/4"	23 1/2"	1
"	2 1/2"	31 3/4"	1	3 1/2"	37"	1	2 <sup>nd</sup> do 2 1/2"	25"	1
"				4 1/4"	38 1/2"	3	3 <sup>rd</sup> do 3 1/2"	27"	3

\_\_\_\_\_ size of Feed pumps  
 \_\_\_\_\_ size of Bilge pumps  
 \_\_\_\_\_ size of Bilge suction in Engine Room  
 In Holds, &c. \_\_\_\_\_  
 Bilge Injections \_\_\_\_\_ sizes \_\_\_\_\_ Connected to condenser, or to circulating pump \_\_\_\_\_  
 Are the bilge suction pipes fitted with roses \_\_\_\_\_ Is a separate Donkey Suction fitted in Engine Room & size \_\_\_\_\_  
 Are the connections with the sea direct on the skin of the ship \_\_\_\_\_ Are the roses in Engine room always accessible \_\_\_\_\_  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates \_\_\_\_\_ Are they Valves or Cocks \_\_\_\_\_  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel \_\_\_\_\_ Are the Discharge Pipes above or below the deep water line \_\_\_\_\_  
 Are the pipes carried through the bunkers \_\_\_\_\_ Are the Blow Off Cocks fitted with a spigot and brass covering plate \_\_\_\_\_  
 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 \_\_\_\_\_  
 Is Heating Surface of Boilers \_\_\_\_\_ Is Forced Draft fitted \_\_\_\_\_ No. and Description of Boilers \_\_\_\_\_  
 Tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_  
 Is each boiler worked separately \_\_\_\_\_ Area of fire grate in each boiler \_\_\_\_\_ No. and Description of Safety Valves to \_\_\_\_\_  
 Area of each valve \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Are they fitted with easing gear \_\_\_\_\_  
 Least distance between boilers or uptakes and bunkers or woodwork \_\_\_\_\_ Mean dia. of boilers \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_  
 Range of tensile strength \_\_\_\_\_ Are the shell plates welded or flanged \_\_\_\_\_ Descrip. of riveting: cir. seams \_\_\_\_\_  
 Diameter of rivet holes in long. seams \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Size of manhole in shell \_\_\_\_\_  
**FURNACES, &c.**—No. and Description of Furnaces in each Boiler \_\_\_\_\_ Material \_\_\_\_\_ Outside diameter \_\_\_\_\_  
 Thickness of plates \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ No. of strengthening rings \_\_\_\_\_  
 Working pressure of furnace by the rules \_\_\_\_\_ Combustion chamber plates: Material \_\_\_\_\_ Thickness: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ Bottom \_\_\_\_\_  
 If stays are fitted with nuts or riveted heads \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates in steam space \_\_\_\_\_  
 Diameter at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Material of stays \_\_\_\_\_  
 Thickness \_\_\_\_\_ Pitch of stays \_\_\_\_\_ How are stays secured \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Material of Front plates at bottom \_\_\_\_\_  
 Material of Lower back plate \_\_\_\_\_ Thickness \_\_\_\_\_ Greatest pitch of stays \_\_\_\_\_ Working pressure of plate by rules \_\_\_\_\_  
 Material of tube plates \_\_\_\_\_ Thickness: Front \_\_\_\_\_ Back \_\_\_\_\_ Mean pitch of stays \_\_\_\_\_  
 Working pressures by rules \_\_\_\_\_ Length as per rule \_\_\_\_\_ Distance apart \_\_\_\_\_ Number and pitch of stays in each \_\_\_\_\_  
 Steam dome: description of joint to shell \_\_\_\_\_ % of strength of joint \_\_\_\_\_ Diameter \_\_\_\_\_  
 Description of longitudinal joint \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 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 Basing Gear fitted \_\_\_\_\_

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

SPARE GEAR. State the articles supplied:— \_\_\_\_\_

The foregoing is a correct description,

*For Jenkins*  
*of*

*J. G. Walker*  
DIRECTOR

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- May 22-30 Jun 3-19 Jul 5-10-16-18-22-26 Aug 2-15-18-29 Sep 4-6-12-17-23 Oct 3-11-22-28-29  
During erection on board vessel --- Nov 14-25 Dec 2-12-17 1919 Jan 8-10-18-24-27 Feb 11- Jun 9  
Total No. of visits 36

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Casings 25-11-18 Rotors 25-11-18 Blading 12-12-18 Gearing 12-12-18

Rotor shaft 25-11-18 Thrust shaft \_\_\_\_\_ Tunnel shafts \_\_\_\_\_ Screw shaft \_\_\_\_\_ Propeller \_\_\_\_\_

Stern tube \_\_\_\_\_ 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 shafts Steel 35-38.2 tons Identification Mark on Do. Y. X 11-18

Material and tensile strength of Pinion shafts Nickel Steel 42.4 to 46 tons Identification Mark on Do. Y. X 12-18

Material of Wheel shafts Steel Identification Mark on Do. Y. X 12-18 Material of Thrust shaft \_\_\_\_\_ Identification Mark on Do. \_\_\_\_\_

Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts \_\_\_\_\_ Identification Marks on 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 \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c. These turbines & gearing have been constructed under special survey & the materials & workmanship are found & good; they have been tried under steam in the test shop & found satisfactory.

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee ... £ 48 = 9 = 8  
Special ... £  
Donkey Boiler Fee ... £  
Travelling Expenses (if any) ... £  
When applied for, 11/5/1920  
When received, 29/5/20  
Thomas Field  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. MAY. 14 1920

Assigned See F.C. report

