

# REPORT ON MACHINERY.

No. 7177.

WED. 14. AUG. 1918

Received at London Office  
NEWCASTLE-ON-TYNE

Date of writing Report 9th Aug 18 When handed in at Local Office 9th Aug 18 Port of Farron  
 No. in Survey held at Farron Date, First Survey 16 Jan 1917 Last Survey 8th Aug 1918  
 Reg. Book. 27 on the S.S. Kent (Number of Visits 12) Tons 8656 Gross 5458 Net

Master Farron Built at Farron By whom built Palmers & Co When built 1918  
 Engines made at Farron By whom made Palmers & Co when made 1918  
 Boilers made at Farron By whom made Palmers & Co when made 1918  
 Registered Horse Power 4500 Owners Federal Steam Nav Co Port belonging to London  
 Shaft Horse Power at Full Power 5000 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

973.  
 TURBINE ENGINES, &c.—Description of Engines HP & LP Astern & stern gear turbines No. of Turbines Two  
 Diameter of Rotor Shaft Journals, H.P. 7 1/2 I.P. 7 1/2 Diameter of Pinion Shaft 7 1/2 (16.3 rule)  
 Diameter of Journals 7 1/2 Distance between Centres of Bearings 3-7 3/4 Diameter of Pitch Circle 9.208  
 Diameter of Wheel Shaft 16 1/4 Distance between Centres of Bearings 8-3 Diameter of Pitch Circle of Wheel 146.082  
 Width of Face 4-3 Diameter of Thrust Shaft under Collars 16 7/8 Diameter of Tunnel Shaft 15.29 as per rule 16 7/8 as fitted  
 No. of Screw Shafts one Diameter of same as per rule 16.89 as fitted 18 Diameter of Propeller 19-3 Pitch of Propeller 17-9  
 No. of Blades 4 State whether Moveable yes Total Surface 118 sq Diameter of Rotor Drum, H.P. 30 L.P. 54 asterisk 2  
 Thickness at Bottom of Groove, H.P. Solid L.P. 3/2 min Astern 5/8 min Revs. per Minute at Full Power, Turbine 1270 Propeller 80

### PARTICULARS OF BLADING.

	H.P. Rotor			L.P. Rotor			ASTERN Rotor		
	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	1 5/8"	25 1/2"	9	1 3/4"	57 1/2"	2	1 3/4"	45 1/2"	2
2ND "	1 5/16"	25 7/8"	9	2 3/16"	58 7/8"	2	2 1/2"	47"	2
3RD "	2 5/16"	29 7/8"	9	2 3/4"	59 1/2"	2	3 1/2"	49"	2
4TH "	2 3/4"	30 1/2"	9	3 7/16"	60 7/8"	2	3 1/2"	49"	1
5TH "	2 3/8"	34 3/4"	6	4 1/4"	62 1/2"	2	3 1/2"	49"	1
6TH "	2 7/8"	35 3/4"	6	5 1/4"	64 1/2"	2			
7TH "	3 7/16"	36 7/8"	6	6 1/2"	67"	2			
8TH "	4 1/16"	38 1/8"	6	8 1/2"	73	2			

No. and size of Feed pumps one pair Mess 13 1/2 x 10 x 24  
 No. and size of Bilge pumps one duplex 6 x 4 1/2 x 6  
 No. and size of Bilge suction in Engine Room two 3 1/2 and two 3 1/2 in boiler room  
 In Holds, &c. two 3 1/2 diameter in Nos 1 & 2  
3, 4 & 5 holds and one 2 1/2 in tunnel well  
 No. of Bilge Injections 1 sizes 1 1/2 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine Room & size one 3 1/2  
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Discharge Pipes above or below the deep water line Below  
 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 covering plate yes  
 What pipes are carried through the bunkers None How are they protected yes  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from deck

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons Ltd  
 Total Heating Surface of Boilers 13752 sq Forced Draft fitted yes No. and Description of Boilers Four Single Ended  
 Working Pressure 180 lb per sq in Tested by hydraulic pressure to 360 lb per sq in Date of test 3/12/17 & 21/12/17 No. of Certificate 9025 & 9035  
 Can each boiler be worked separately yes Area of fire grate in each boiler 80 sq No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 11.04 sq Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 36" Mean dia. of boilers 17-6" Length 12-0" Material of shell plates Steel  
 Thickness 1 1/32 Range of tensile strength 29 x 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R top  
 long. seams 5 R Butt Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Top of plates or width of butt straps 20 1/2"  
 Per centages of strength of longitudinal joint 86.5 Working pressure of shell by rules 182 lb Size of manhole in shell 16" x 12"  
 Size of compensating rings 37 x 33 x 1 1/16 No. and Description of Furnaces in each Boiler 4 Dighton Material Steel Outside diameter 46 3/4"  
 Length of plain part 5 Thickness of plates 5/8" Description of longitudinal joint Welded No. of strengthening rings 1  
 Working pressure of furnace by the rules 215 Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/8"  
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/2 Back 10 x 8 7/8 Top 12 x 8 If stays are fitted with nuts or riveted heads no Working pressure by rules 185 End plates in steam space  
 Material of stays Steel at smallest part 2.36 sq Area supported by each stay 116 sq Working pressure by rules 182 Material of stays Steel  
 Material Steel Thickness 1 3/16" Pitch of stays 21 x 17 1/4 How are stays secured no Working pressure by rules 192 Material of Front plates at bottom Steel  
 at smallest part 6.67 sq Area supported by each stay 362 sq Working pressure by rules 192 Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14" x 10" Working pressure of plate by rules 204  
 Diameter of tubes 3" Pitch of tubes 4 1/4" Material of tube plates Steel Thickness: Front 3/16 x 1" Back 25/32 Mean pitch of stays 10 5/8"  
 Pitch across wide water spaces 14" Working pressures by rules 197 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/4 x 13 1/4 Length as per rule 30 3/8 Distance apart 10 1/2 Number and pitch of stays in each two 8"  
 Working pressure by rules 180 lb Steam dome: description of joint to shell None % of strength of joint 100 Diameter 5 1/2"  
 Thickness of shell plates 1 1/2" Material Steel Description of longitudinal joint Welded Diameter of rivet holes 1 1/8" Pitch of rivets 10"  
 Working pressure of shell by rules 180 lb Crown plates: Thickness 1 1/2" How stayed yes

If not, state whether, and when, one will be sent?

In a Report also sent on the Hull of the Ship?

