

REPORT ON MACHINERY.

SUNDERLAND RPT. No. 27540

No. 10374

Date of writing Report 13/5/19 When handed in at Leeds Office 19 Port of Giddlesbrough Date, First Survey 4th Dec 18 Last Survey 6th May 1919

No. in Survey held at Stockton-on-Tees on the Steel Screw Steamer "BRETWALDA" (S.S. N^o 321) Master Peterson Built at Sunderland By whom built Sunderland S.B.Co

Engines made at Stockton By whom made Messrs Blair & Co Ltd (N^o 1904) when made 1919

Boilers made at Stockton By whom made Messrs Blair & Co Ltd (N^o 1898) when made 1919

Registered Horse Power _____ Owners Hall Bros & Co Ltd Port belonging to Newcastle

Vol. Horse Power as per Section 28 378-517 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27-44-73 Length of Stroke 48 Revs. per minute 77 Dia. of Screw shaft 14.7 Material of Ing Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight yes

Is the propeller boss yes If the liner is in more than one length are the joints burned in one If 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 tight fit

Are the liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5'-1 1/2"

Dia. of Tunnel shaft 13.33 Dia. of Crank shaft journals 14.0 Dia. of Crank pin 14.5 Size of Crank webs 28"x9" Dia. of thrust shaft under rollers 14.7 Dia. of screw 17'-6" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 98.2 sq ft

No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps Ballast 10 1/2 x 14 x 24 Feed 7 x 18 No. and size of Suctions connected to both Bilge and Donkey pumps 2 @ 3 1/2"

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible no

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 main 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

Are that pipes are carried through the bunkers Suctions to forward holds How are they protected wood ceiling

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 top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs John Spencer & Sons Ltd

Total Heating Surface of Boilers 7668 Is Forced Draft fitted yes No. and Description of Boilers 3 single ended

Working Pressure 185 Tested by hydraulic pressure to 360 Date of test 15th April 1919 No. of Certificate 5985

Can each boiler be worked separately yes Area of fire grate in each boiler 63.3 No. and Description of Safety Valves to each boiler 2 direct spring

Smallest distance between boilers or uptakes and bunkers or woodwork 7'-0" Mean dia. of boilers 15'-6" Length 11'-6" Material of shell plates steel

Thickness 1 1/4" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2-R. Lap.

Diag. seams 2 B-3 Riv. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 5/8" Lap of plates or width of butt straps 19 1/2" x 1 1/2" out

Percentages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 182 Size of manhole in end 16"x12"

Material of compensating ring flanged No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 50 3/8"

Length of plain part 4' 6" Thickness of plates 1 1/2" Description of longitudinal joint Weld No. of strengthening rings 1

Working pressure of furnace by the rules 188 Combustion chamber plates: Material steel Thickness: Sides 2 3/32" Back 1 1/16" Top 2 3/32" Bottom 2 9/32"

Distance of stays to ditto: Sides 10 5/8" x 9 5/8" Back 10 1/4" x 8 3/4" Top 10 5/8" x 9 5/8" stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays steel Area at smallest part 2.31 Area supported by each stay 98.5 Working pressure by rules 211 End plates in steam space: Material steel Thickness 1 1/2" Pitch of stays 21 3/4" How are stays secured nuts & 8 3/4" x 3/32 washers Working pressure by rules 191 Material of stays steel

Area at smallest part 8.29 Area supported by each stay 467 Working pressure by rules 185 Material of Front plates at bottom steel

Thickness 3/32" Material of Lower back plate steel Thickness 2 7/32" Greatest pitch of stays 13 5/8" x 8 3/4" Working pressure of plate by rules 187

Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 7/8" Material of tube plates steel Thickness: Front 3 1/32" Back 3/4" Mean pitch of stays 9 7/8"

Distance across wide water spaces 13 5/8" Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 10" x 1 3/4" Length as per rule 35 7/8" Distance apart 10 5/8" Number and pitch of stays in each 3 @ 9 1/4"

Working pressure by rules 188 Steam dome: description of joint to shell none % of strength of joint _____

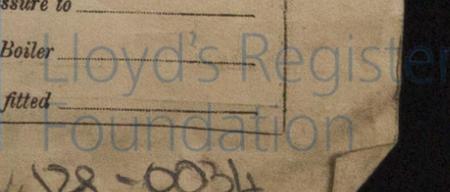
Material _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

Material 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 _____

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

Pressure to which each is adjusted _____ Is Easing Gear fitted _____



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