

REPORT ON MACHINERY.

No. 27417

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Date of writing Report 19 When handed in at Local Office 3 FEB 1919 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 13 May Last Survey 22 Janry 1919
 Reg. Book. on the new steel S/S "SHEAF SPEAR" (Number of Visits 23)
 Master J. B. Clark Built at Sunderland By whom built J. Blumer & Co (S/S N° 249) When built 1919
 Engines made at Sunderland By whom made J. Dickinson & Sons Ltd (N° 839) when made 1919
 Boilers made at Sunderland By whom made J. Dickinson & Sons Ltd (N° 839) when made 1919
 Registered Horse Power 429 Owners W. A. Souter & Co. Port belonging to Newcastle
 Nom. Horse Power as per Section 28 430 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25"-41"-68" Length of Stroke 45" Revs. per minute 80 Dia. of Screw shaft as per rule 13.58" Material of scrap iron
 as fitted 14 1/2" screw shaft
 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
 in the propeller boss yes If the liner is in more than one length are the joints burned 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 If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-0"
 Dia. of Tunnel shaft as per rule 12.41" Dia. of Crank shaft journals as per rule 13.03" Dia. of Crank pin 13 1/4" Size of Crank webs 8 3/16" x 2 1/2" Dia. of thrust shaft under
 collars 13 1/4" Dia. of screw 16'-0" Pitch of Screw 16'-3" No. of Blades 4 State whether moveable no Total surface 750ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 2 @ 9 1/2" & 7 1/8" 1 @ 10 1/2" & 12 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 5 at 3" dia see letter 10/2/19 In Holds, &c. N° 1 hold - 2 @ 3". N° 2 hold - 2 @ 3".
N° 3 hold (cross bunker) - 2 @ 3". N° 4 hold 2 @ 3". N° 5 hold - 2 @ 2 1/2" & 1 @ 3 1/2". Tunnel well - 1 @ 3".
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump 6 P. Is a separate Donkey Suction fitted in Engine room & size yes 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 none
 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, all others above
 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 forward hold suction How are they protected under limber boards
 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 no worked from access by trunk from deck

OILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons Ltd.
 Total Heating Surface of Boilers 6304ft Is Forced Draft fitted yes No. and Description of Boilers three single ended marine
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 21-12-18 No. of Certificate 3520
 Can each boiler be worked separately yes Area of fire grate in each boiler 51ft No. and Description of Safety Valves to
 each boiler two direct spring Area of each valve 8.295" Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers 1'-10" Mean dia. of boilers 14'-0" Length 11'-8 1/2" Material of shell plates steel
 Thickness 1 1/8" Range of tensile strength 28 3/4-33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR
 long. seams DBS TR Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 1'-0"
 Per centages of strength of longitudinal joint rivets 86.1% plate 86% Working pressure of shell by rules 187 Size of manhole in shell 16" x 12"
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3. Deighton Material steel Outside diameter 3'-7"
 Length of plain part top 1'-14" bottom 1'-14" Thickness of plates crown 3/32" Description of longitudinal joint welded No. of strengthening rings 1
 Working pressure of furnace by the rules 190 Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 3/4" Top 11/16" Bottom 11/16"
 Pitch of stays to ditto: Sides 9 3/8" x 9" Back 9" x 10 1/2" Top 9" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 194
 Material of stays steel Area at smallest part 2.035" Area supported by each stay 94.50" Working pressure by rules 216 End plates in steam space:
 Material steel Thickness 1 1/32" Pitch of stays 23 3/4" x 19 1/2" How are stays secured DN & W Working pressure by rules 181 Material of stays steel
 Area at smallest part 8.290" Area supported by each stay 464.0" Working pressure by rules 186 Material of Front plates at bottom steel
 Thickness 31/32" Material of Lower back plate steel Thickness 21/32" Greatest pitch of stays 13 1/2" x 9" Working pressure of plate by rules 185
 Diameter of tubes 2 3/4" Pitch of tubes 4' x 4" Material of tube plates steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 10"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 184 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 2 @ 10 1/2" x 3/4" Length as per rule 2'-11 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3 @ 9"
 Working pressure by rules 200 Steam dome: description of joint to shell none % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. 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 _____

