

## REPORT ON MACHINERY.

No. 9412  
SEP 1925

Date of writing Report 14-9-1925 When handed in at Local Office 8-9-1925 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey July, 1923 Last Survey Sept 3rd 1925  
 Reg. Book. on the New Steel Y.M.S.S. Rawalpindi (Number of Volls 140)  
 Master Built at Greenock By whom built Harland & Wolff Ltd Belfast  
 Engines made at Belfast By whom made Harland & Wolff Ltd when made 1925  
 Boilers made at Belfast By whom made Harland & Wolff Ltd when made 1925  
 Registered Horse Power Owners Peninsular & Oriental Steam Navigation Co Ltd Port belonging to Greenock  
 Nom. Horse Power as per Section 28 2418 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quadruple Expansion Turbine No. of Cylinders 8 No. of Cranks 8  
 Dia. of Cylinders 30" x 44" x 64" x 94" Length of Stroke 60" Revs. per minute 90 Dia. of Screw shaft as per rule 19.06" Material of Steel  
 as fitted 19.34" 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 Yes 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 Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'-6"  
 Dia. of Tunnel shaft as per rule 14.44" Dia. of Crank shaft journals as per rule 18.31" Dia. of Crank pin 20" Size of Crank webs 13 3/8" Dia. of thrust shaft under  
 collars 18 3/8" Dia. of screw 19.6" Pitch of Screw 23'-0" No. of Blades 3 State whether moveable Yes Total surface of propellers 90 sq ft  
 No. of Feed pumps 3 Dia. of ditto 14" Stroke 32" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 1 Dia. of ditto 10" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 1 Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Rooms 3 @ 37 in Eng R, 3 @ 37 in each Bh room 3 @ 37 in tunnel. In Holds, &c. 3 @ 37 in Nos 1-2-3 & 4-5-6 holds 2 @ 37 in  
 Gutters 1 @ 37 in 2 @ 37 in tunnel 2 @ 37 in each Bh room 1 @ 37 in gutters in No 3 hold.  
 No. of Bilge Injections 2 sizes 14" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 6"  
 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 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 upper deck & Bridge.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel D. & W. & Sons Ltd GDB  
 Total Heating Surface of Boilers 27932 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Six Double Ended (6 DE)  
 Working Pressure 215 lbs Tested by hydraulic pressure to 343 lbs Date of test 12-3-25, 21-3-25 No. of Certificate 552, 855, 856, 857, 858  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 156 sq ft No. and Description of Safety Valves to  
 each boiler Two spring loaded high lift Area of each valve 14.19" Pressure to which they are adjusted 220 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 17'-3" Length 20'-0" Material of shell plates Steel  
 Thickness 1 3/8" Range of tensile strength 30 to 33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams TR & DR  
 long. seams I.R.D.B.S. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 10 1/2" Top of plates or width of butt straps 1'-11 1/4"  
 Per centages of strength of longitudinal joint rivets 85.6 Working pressure of shell by rules 220 lbs Size of manhole in shell 16 x 12  
 Size of compensating ring 2 @ 2'8" x 3'-0" x 1 1/4" No. and Description of Furnaces in each boiler Eight (8) Corr Material Steel Outside diameter 3'-10 1/16"  
 Length of plain part top Thickness of plates crown 3 1/2" Description of longitudinal joint Welded No. of strengthening rings  
 bottom 3 1/2" Working pressure of furnace by the rules 224 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back Top 3 1/2" Bottom 1 1/2" wing  
 Pitch of stays to ditto: Sides 8 1/2 x 8 Back Top 1 1/4 x 9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 224 lbs  
 Material of stays Steel Area at smallest part 1.46 sq ft Area supported by each stay 65.25 sq ft Working pressure by rules 223 lbs End plates in steam space:  
 Material Steel Thickness 1 1/4" Pitch of stays 140 x 1 1/4" How are stays secured V.W.W. Working pressure by rules 216 lbs Material of stays Steel  
 Area at smallest part 4.06 sq ft Area supported by each stay 36.3 sq ft Working pressure by rules 216 lbs Material of Front plates at bottom Steel  
 Thickness 7/8" Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
 Diameter of tubes 2 1/2" Pitch of tubes 4 3/4 x 3 3/4 Material of tube plates Steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 8 1/2 x 1 1/2"  
 Pitch across wide water spaces 13 1/2 x 8 Working pressures by rules 215 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 2 @ 7 1/8 x 8 Length as per rule 2-1 1/2 Distance apart 9" Number and pitch of stays in each 6 @ 1 1/4 x 3 @ 1 1/4  
 Working pressure by rules 319 lbs 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 None 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



© 2018

Lloyd's Register  
Foundation







# Spare Gear

Belfast.

Continuation of Report No. Q412 dated 8-9-25 on the

New Steel Y. S. S. Rawalpindi.

1 set of pistons for one engine with two sets of rings & springs.  
 1 piston rod complete with metallic packing glands & studs.  
 1 set valve spindles for one engine with 2 sets metallic packing.  
 1 set I.P. & one set P. crosshead brasses with bolts & nuts complete.  
 1 set crank pin brasses with bolts & nuts complete.  
 1 set piston valves & grids complete for one engine with studs etc.  
 1 (I.P.) slide valve.  
 1 set eccentric sheaves & 2 eccentric straps.  
 1 set cylinder covers complete 60 cyl. cover studs 8 + 6 studs for  
 1 set piston rod & valve spindle glands respectively.  
 1 set steel link blocks, 12 G.M. liners, 1 set w.m. strips for ecc. straps.  
 1 set w.m. strips for guide shoes & 12 guide shoe bolts.  
 1 set bolts & nuts complete for main bearings.  
 1 set condenser tubes, 225 screwed glands, 10 lbs condenser packing.  
 1 set propeller shaft complete with 2 extra keys & 1 set of lignum vitae  
 1 set bronze propeller blades & one set of studs complete for each propeller  
 1 set coupling bolts & nuts.  
 1 set pads for one Michell thrust block.  
 1 set escape valve springs.  
 1 quantity of assorted bolts & nuts & iron.  
 1 set safety valve springs.  
 1 set manhole doors for one boiler complete with studs & dogs.  
 1 set boiler drain plugs. 100 boiler tubes, 18 tube stoppers.  
 1 set main & 4 auxiliary check valves & spindles.  
 1 set oil fuel burners, 162 burner tips, 52 atomiser strainers.  
 1 set burner supply pipes, 2 suction & 2 discharge  
 1 set strainer baskets, 3 thermometers.  
 1 transfer pump one set suction & delivery valves, 1 valve chest, 1 piston R. 1 bucket  
 1 fuel  
 1 bilge  
 1 air feed " Two " " " " " 2 " 2 "  
 1 set sanitary & sanitary pipes " " " " " 2 Bkt rods & rings  
 1 set emergency bilge pump one " " " " " one set bucket pump, 1 armature.  
 1 set cages for main, auxiliary & gravitation filters.  
 1 set armature for forced draught fans.  
 1 complete set of spare gear for steering & telemotor gear.  
 1 set pumps, one piston & rod, one pump bucket & rod.  
 1 complete 1 x head & shoe 1 set foot & head valves & plates.  
 1 slide valve, 1 shuttle valve.  
 1 set centrifugal pumps :- 1 set pistons & valves 2 pairs  
 1 set of bottom end brasses with bolts & nuts complete one  
 1 set propeller & shaft complete.

William Butler.