

Rpt. 4.

# REPORT ON MACHINERY.

No. 10718

Date of writing Report 17-1-1919 When handed in at Local Office Rotterdam Port of Rotterdam  
 No. in Survey held at Rotterdam Date, First Survey 20/9 1916 Last Survey 13/1 1919  
 Reg. Book. on the Steel Screw Steamer "IRIS" (Number of Visits 62)  
 Master L. Groendijk Built at Bolnes By whom built Cebr. Pot. Tons Gross 388 1/2  
 Engines made at Rotterdam By whom made Rotterdamse Droogdok. Mij. When built 1918  
 Boilers made at Rotterdam By whom made Rotterdamse Droogdok. Mij. when made 1918  
 Registered Horse Power 428 Owners Petroleum Mij. "La Colona" Port belonging to S. Pravenhage  
 Nom. Horse Power as per Section 28 428 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Vertical triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 15" x 41" x 68" Length of Stroke 45" Revs. per minute 80 Dia. of Screw shaft 15" Material of screw shaft SM 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  
 in the propeller boss Yes If the liner is in more than one length are the joints burned One length 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 60"  
 Dia. of intermediate shaft 13" Dia. of Crank shaft journals 13 5/8" Dia. of Crank pin 13 5/8" Size of Crank webs 8 1/2" x 24 1/2" Dia. of thrust shaft under  
 collars 13 5/8" Dia. of screw 16 1/2" Pitch of Screw 16-0" No. of Blades 4 State whether moveable No Total surface 81,2 sq ft  
 No. of Feed pumps 2 Diameter of ditto 8 x 10 1/2 Stroke 11 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 22 1/2" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 1 Sizes of Pumps 8 1/2" x 6" x 21" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 5" à 3 1/2" One in closed well à 3 1/2" In Holds, &c. 3" à 2" on top of deoytank, 2" à 3" in  
pump room. One in open well à 3 1/2" The oil pumping arrangement in tanks has been fitted as per approved plans  
 No. of Bilge Injections 1 sizes 4" Connected to condensers to circulating pump Is a separate Donkey Suction fitted in Engine room & size Yes à 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 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 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 None How are they protected —  
 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 No tunnel Is it fitted with a watertight door — worked from —

**BOILERS, &c.**—(Letter for record 3) Manufacturers of Steel Thyssen & Co  
 Total Heating Surface of Boilers 6035 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 2 Single ended marine boilers  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 24-8-17 No. of Certificate 640  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 106 sq ft No. and Description of Safety Valves to  
 each boiler Two spring loaded Area of each valve 1257 sq in Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes  
 Forecastle 50" Smallest distance between boilers or uptakes and bunkers or woodwork over 18" Mean dia. of boilers 16 1/2" Length 11 1/2" Material of shell plates SM Steel  
 Thickness 1 1/2" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap x riv  
 long. seams Double butt strap Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 11 1/2"  
 Per centages of strength of longitudinal joint rivets 92% Working pressure of shell by rules 200 lbs Size of manhole in shell 20 x 16"  
 plate 84% Size of compensating ring 4 x 1 1/2" No. and Description of Furnaces in each boiler 1 Moulson's Material SM Steel Outside diameter 4 3/8"  
 Length of plain part top — bottom — Thickness of plates crown 3/32" bottom 3/32" Description of longitudinal joint Welded No. of strengthening rings None  
 Working pressure of furnace by the rules 259 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 29" Top 3/4" Bottom 7/8"  
 Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 8 1/2" Top 8 1/2" x 10" If stays are fitted with nuts or riveted heads — Working pressure by rules 216 lbs  
 Material of stays Steel Area at smallest part 2.05 sq in Area supported by each stay 42 1/2 sq in Working pressure by rules 252 lbs End plates in steam space:  
 Material Steel Thickness 1 1/2" Pitch of stays 10 3/4" x 19" How are stays secured with washers and nuts outside Working pressure by rules 209 lbs Material of stays Steel  
 Area at smallest part 7.06 sq in Area supported by each stay 557 sq in Working pressure by rules 209 lbs Material of Front plates at bottom Steel  
 Thickness 25/32" Material of Lower back plate Steel Thickness 25/32" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 215 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 25/32" Back 25/32" Mean pitch of stays 9" x 8 3/4"  
 Pitch across wide water spaces 15 1/4" Working pressures by rules 266 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8" x 2" Length as per rule 2' 8" Distance apart 9 1/2" Number and pitch of stays in each 3" à 8 1/2"  
 Working pressure by rules 215 lbs Steam dome: description of joint to shell — % of strength of joint —  
 Diameter — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes —  
 No. of Visits — Pitch of rivets — Working pressure of shell by rules — Crown plates — Thickness — How stayed —

**SUPERHEATER.** Type Schmidt's patent 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 —

