

# REPORT ON MACHINERY.

No. 6215.

Received at London Office

TUE. SEP. - 8. 1914

Date of writing Report 4 Sept 1914 When handed in at Local Office 19 Port of Amsterdam

No. in Survey held at Amsterdam Date, First Survey 9 Decemr 1913 Last Survey 29 August 1914  
Reg. Book. P 93 on the steam motor vessel Illene (Number of Visits 51)

Master G. Bowie Built at Dundee By whom built Caledon S.B. & E. Co. Ltd When built 1914  
Tons } Gross 3738  
      } Net 2274

Engines made at Amsterdam By whom made Werkspoor when made 1914  
DONKEY Boilers made at Dundee By whom made Caledon S.B. & E. Co. Ltd when made 1914

Registered Horse Power        Owners Ned Indische Stoomboot Maats Port belonging to Graaenhage  
Nom. Horse Power as per Section 28 444 375 Is Refrigerating Machinery fitted for cargo purposes        Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Single Acting 4 cycle Werkspoor Diesel Engines No. of Cylinders 12 No. of Cranks 6

Dia. of Cylinders 20 1/2 Length of Stroke 35 7/8 Revs. per minute 130 Dia. of Screw shaft 1 1/2 Material of screw shaft S.M.A.N. (HOT 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        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        Length of stern bush 1100

Dia. of Tunnel shaft 1 5/8 Dia. of Crank shaft journals 3 1/2 Dia. of Crank pin 3 1/2 Size of Crank webs 160 x 450 Dia. of thrust shaft under collars 2 7/8 Dia. of screw 5 1/2 Pitch of Screw 2800 No. of Blades Four State whether moveable no Total surface 3.14 16

No. of Feed pumps        Diameter of ditto        Stroke        Can one be overhauled while the other is at work       

No. of Bilge pumps three Diameter of ditto two 100 one 110 Stroke 350 Can one be overhauled while the other is at work       

No. of Donkey Engines ballast donkey 2 feed donkeys 2 fuel donkeys Sizes of Pumps 8 x 8 x 10 duplex 5 x 3 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps two diam 3" in forepeak one diam 3 1/2" double acting cooling pumps 160 x 300 In Holds, &c. two diam 4" two diam 1 1/2" in pump room

No. of Bilge Injections two sizes 80 Is a separate Donkey Suction fitted in Engine room & size Yes 80

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 Yes

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        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

Dates of examination of completion of fitting of Sea Connections        of Stern Tube        Screw shaft and Propeller       

Is the Screw Shaft Tunnel watertight        Is it fitted with a watertight door        worked from       

**BOILERS, &c.**—(Letter for record       ) Manufacturers of Steel       

Total Heating Surface of Boilers        Is Forced Draft fitted        No. and Description of Boilers       

Working Pressure        Tested by hydraulic pressure to        Date of test        No. of Certificate       

Can each boiler be worked separately        Area of fire grate in each boiler        No. and Description of Safety Valves to each boiler       

Area of each valve        Pressure to which they are adjusted        Are they fitted with easing gear       

Smallest distance between boilers or uptakes and bunkers or woodwork        Mean dia. of boilers        Length        Material of shell plates       

Thickness        Range of tensile strength        Are the shell plates welded or flanged        Descrip. of ricketing: cir. seams       

long. seams        Diameter of rivet holes in long. seams        Pitch of rivets        Lap of plates or width of butt straps       

Per centages of strength of longitudinal joint        Working pressure of shell by rules        Size of manhole in shell       

Size of compensating ring        No. and Description of Furnaces in each boiler        Material        Outside diameter       

Length of plain part        Thickness of plates        Description of longitudinal joint        No. of strengthening rings       

Working pressure of furnace by the rules        Combustion chamber plates: Material        Thickness: Sides        Back        Top        Bottom       

Pitch of stays to ditto: Sides        Back        Top        If stays are fitted with nuts or riveted heads        Working pressure by rules       

Material of stays        Diameter at smallest part        Area supported by each stay        Working pressure by rules        End plates in steam space:       

Material        Thickness        Pitch of stays        How are stays secured        Working pressure by rules        Material of stays       

Diameter at smallest part        Area supported by each stay        Working pressure by rules        Material of Front plates at bottom       

Thickness        Material of Lower back plate        Thickness        Greatest pitch of stays        Working pressure of plate by rules       

Diameter of tubes        Pitch of tubes        Material of tube plates        Thickness: Front        Back        Mean pitch of stays       

Pitch across wide water spaces        Working pressures by rules        Girders to Chamber tops: Material        Depth and thickness of girder at centre        Length as per rule        Distance apart        Number and pitch of stays in each       

Working pressure by rules        Superheater or Steam chest; how connected to boiler        Can the superheater be shut off and the boiler worked separately       

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

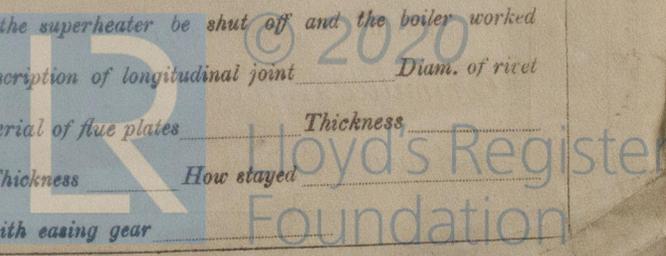
Pitch of rivets        Working pressure of shell by rules        Diameter of flue        Material of flue plates        Thickness       

If stiffened with rings        Distance between rings        Working pressure by rules        End plates: Thickness        How stayed       

Working pressure of end plates        Area of safety valves to superheater        Are they fitted with easing gear       

See report No 6207.

W1644 - 0114



**FOR VERTICAL DONKEY BOILER**

See Dundee Report No. 7818.  
Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate **942** Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_  
 Valves \_\_\_\_\_ No. of Safety Valves **two** Area of each  $\frac{1}{2}$  " Pressure to which they are adjusted **120 lbs** Date of adjustment **29 Aug 1914**  
 If fitted with casing gear **Yes** If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_  
 Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_  
 Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *two cylinders & three pistons complete, 158 Springs, 1 screw on 1 triple throw Crankshaft, 2 sets of top & bottom ends & bearing brasses with bolts for each set, 12 Couplings bolts, 2 guide faces & shoes, One HP-IP and LP air compressors with coolers (receivers) and complete set of valves, valves for bilge & cooling pumps, starting air, 16 in 7 outlets for cylinders, 3 throat valves, bolts & nuts assorted, gear for auxiliaries & donkey boiler & condenser*  
 The foregoing is a correct description,  
**WERKSPOR O. Kloos** Manufacturer.

Dates of Survey while building  
 During progress of work in shops: 9-11 Dec 1913, 2, 14, 20, 22, 28, 30 Jan., 20-27 Feb., 3, 12, 23 March, 8, 15, 16 April  
 During erection on board vessel: 20, 23, 27, 28, 30 April, 1, 2, 4, 7, 11, 14, 20, 25, 26, 28 May, 9, 11, 22, 25 June  
 Total No. of visits: 51 visits  
 as the approved plan of *main boiler* forwarded herewith **Yes**  
 starting air reservoir **Yes**  
 " " " donkey " " " "

Dates of Examination of principal parts—Cylinders  $\frac{10-17}{2-5}$   $\frac{23-26}{4-7}$  Slides \_\_\_\_\_ Covers ditto \_\_\_\_\_ Pistons  $\frac{4, 7, 11}{5}$   $\frac{21, 27}{8}$   $\frac{20}{9}$  Rods ditto \_\_\_\_\_  
 Connecting rods ditto \_\_\_\_\_ Crank shaft  $\frac{12, 25}{3}$   $\frac{15, 28}{4}$   $\frac{17, 24}{5}$   $\frac{20, 27}{6}$  Thrust shaft *See Dundee Report* Tunnel shafts \_\_\_\_\_ Screw shaft *No. 7818* Propeller ditto \_\_\_\_\_  
 Stern tube ditto \_\_\_\_\_ Steam pipes tested \_\_\_\_\_ Engine and boiler seatings  $\frac{16, 23, 27}{4}$   $\frac{1, 2, 4, 7, 11}{5}$   $\frac{4, 10, 10}{5}$  Engines holding down bolts  $\frac{29}{7}$   $\frac{21-22}{8}$   
 Completion of pumping arrangements **24 August** Boilers fixed \_\_\_\_\_ Engines tried under steam **25 and 29 August**  
 Donkey boiler safety valves adjusted **29 Aug** Thickness of adjusting washers **9 and 10**  
 Material of Crank shafts *See Dundee Report* Identification Mark on Do. **MB 38-10-13** Material of Thrust shaft *See Dundee Report* Identification Mark on Do. **MB 50-6-13**  
 Material of Tunnel shafts *See Dundee Report* Identification Marks on Do. **MB 36-10-13** Material of Screw shafts *See Dundee Report* Identification Marks on Do. **MB 37-6-13**  
 Material of Steam Pipes **Copper** Test pressure **240 lbs.**

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *This vessel's thrust shafts and blocks having been fitted by the Shipbuilders at Dundee (See report Dundee No. 7818) have been removed in order to improve the seats of do for thrust and motor seats see Amsterdam hull report No. 6216. This vessel's machinery has been constructed and fitted in an efficient manner, material used of good quality and tested as required and workmanship throughout good. Starting air reservoir tested to 36 atm and its safety valves adjusted to 10 atm. All cylinders and compressors of main & auxiliary motors inclusive coolers, chests, waterjackets, air and fuel bottles tested under hydraulic pressure with satisfactory results.*

*Attended main & auxiliary machinery on several trials and while at sea, found same working most satisfactory & motors hard down on their seats, pumps drawing from all compartments. The Society's rule also as regards the burning of liquid fuel fully carried out. We are of opinion that this vessel should be recorded in the Reg. Bo.*

The amount of Entry Fee .. **£ 36** : When applied for, \_\_\_\_\_  
 Special .. .. **£ 488.40** : **Sept 1914**  
 Donkey Boiler Fee .. .. **£** : \_\_\_\_\_  
 Travelling Expenses (if any) **£ 15.40** : **Sept 1914**

**LMC 8.1914**  
**W. H. Be. Dundee**  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute **FRI. SEP. 11. 1914**  
 Assigned **+ L.M.B. 8.14**  
**oil engines**

Certificate (if required) to be sent to **Surveyors Amsterdam**  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

**MACHINERY CERTIFICATE WRITTEN**

