

REPORT ON MACHINERY.

THUR. DEC 6 1900

Port of *Glasgow*

Received at London Office _____ 18

No. in Survey held at *Glasgow*

Date, first Survey *2 February* Last Survey *28 Nov 1900*

Reg. Book. _____
on the *S.S. S. Gaderland*

(Number of Visits *87*)

Master *F. J. Abrecht* Built at *Clydebank* By whom built *John Brown & Co. Ltd.*

Gross *11898.74*
Net *9490*
When built *1900*

Engines made at *Clydebank* By whom made _____ when made *1900*

Boilers made at _____ By whom made _____ when made *1900*

Registered Horse Power _____

Owners *International Navigation Co. Ltd.* Port belonging to *Liverpool*

Com. Horse Power as per Section 28 *1624*

Is Refrigerating Machinery fitted *Only for ship stores* Is Electric Light fitted *Yes by Mr. Brown*

ENGINES, &c. — Description of Engines *Quadruple* No. of Cylinders *Eight* No. of Cranks *8*

Dia. of Cylinders *31" 44" 62" 88"* Length of Stroke *54"* Revs. per minute *about 98* Dia. of Screw shafts *as per rule 17 1/2"* Lgth. of stern bush *6.9'*

Dia. of Tunnel shaft *as per rule 16 1/2"* Dia. of Crank shaft journals *as per rule 16 1/2"* Dia. of Crank pin *14 1/2"* Size of Crank webs *15" x 28"* Dia. of thrust shaft under collars *14 1/2"* Dia. of screw *18" x 9"* Pitch of screw *22" x 6"* No. of blades *4* State whether moceable *Yes* Total surface *90 sq ft*

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

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

No. of Donkey Engines *nine* Sizes of Pumps *4" 10" 15" 10" 10" 10" 10" 10" 10"* No. and size of Suctions connected to both Bilge and Donkey pumps in Engine Room *3 - 3 1/2"*

1 " " *6" x 1/2" x 6"* Holds, &c. *2 in each 3 1/2"*

No. of bilge injections *2* sizes *13"* Connected to *condenser* circulating pump _____ Is 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 _____

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 *Both*

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 *pipes to hold (oil) (water)* Are they protected *by wood casing*

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*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *25th Nov 1900* the screw shaft tunnel watertight *Apparently*

Is it fitted with a watertight door *Yes* worked from *Upper platforms*

BOILERS, &c. — (Letter for record *72*) Total Heating Surface of Boilers *23480* Is forced draft fitted *Yes*

No. and Description of Boilers *Multitubular (cylindrical)* Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs*

Date of test *11th Oct* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *40 sq ft* No. and Description of safety valves to each boiler *2 = 12.56"* Area of safety valve _____ Pressure to which they are adjusted *200 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *10"* Mean dia. of boilers *16.6"* Length *11.8"* Material of shell plates *Steel*

Thickness *19/8"* Range of tensile strength *32 tons* Are they welded or flanged *rather* Descrip. of riveting: cir. seams *double* long. seams *Double butt*

Diameter of rivet holes in long. seams *19/8"* Pitch of rivets *10"* Lap of plates or width of butt straps *23"*

Per centages of strength of longitudinal joint _____ Working pressure of shell by rules *232 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *Stange ring* and Description of Furnaces in each boiler *4 Burvis* Material *Steel* Outside diameter *3.4 1/2"*

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

Working pressure of furnace by the rules *230 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/2"* Back *3/2"* Top *3/2"* Bottom *1 1/2"*

Pitch of stays to ditto: Sides *4 3/4" x 6 3/4"* Back *4 1/2" x 6 3/4"* Top *8" x 6"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *230 lbs*

Material of stays *Iron* Diameter at smallest part *1.46"* Area supported by each stay *52.45"* Working pressure by rules *250 lbs* Material of plates in steam space: _____

Material *Steel* Thickness *19/32"* Pitch of stays *16" x 16"* How are stays secured *Double nuts* Working pressure by rules *288 lbs* Material of stays *Steel*

Diameter at smallest part *6.49"* Area supported by each stay *256"* Working pressure by rules *264 lbs* Material of Front plates at bottom *Steel*

Thickness *13/16"* Material of Lower back plate *Steel* Thickness *3/16"* Greatest pitch of stays *14.8"* Working pressure of plate by rules *200 lbs*

Diameter of tubes *3 1/4"* Pitch of tubes *14 1/2"* Material of tube plates *Steel* Thickness: Front *13/16"* Back *2 1/2"* Mean pitch of stays *10 1/8"*

Pitch across wide water spaces *14 1/4"* Working pressures by rules *230 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *8 1/4" x 1"* Length as per rule *2.662* Distance apart *8"* Number and pitch of Stays in each *4 - 6"*

Working pressure by rules *250 lbs* Superheater or Steam chest; how connected to boiler *how* 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 _____

DONKEY BOILER— No. *One* Description *Cylindrical multitubular*
 Made at *Clydebank* By whom made *John Brown & Co.* When made *1900* Where fixed *Line of main*
 Working pressure *100 lb* tested by hydraulic pressure to *200 lb* No. of Certificate *5662* Grate area *147* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *3.14* Pressure to which they are adjusted *100 lb* If fitted with easing gear *Yes* If steam from main boiler's
 enter the donkey boiler *No* Dia. of donkey boiler *4' 2"* Length *4'* Material of shell plate *Steel* Thickness *3/32"* Range of ten-
 strength *29 1/2 tons* Descrip. of riveting long seam *Double lap* Dia. of rivet holes *3/16"* Whether punched or drilled *Drilled* Pitch of rivet *2"*
 Lap of plates *0 1/2"* Percentage of strength of joint Rivets *98%* Thickness of shell crown plates *3/16"* Radius of do. *None* Stays to do *1 1/2"*
 Dia. of stays *1"* Diameter of furnace Top *2' 6"* Bottom *2' 0"* Length of furnace *5' 1"* Thickness of furnace plates *1/2"* Description
 joint *Soldered* Thickness of furnace plates *1/2"* Stayed by *Solid bar stays 1 1/2" x 1 1/2"* Working pressure of shell by rules *100 lb*
 Working pressure of furnace by rules *140 lb* Diameter of uptake *6"* Thickness of uptake plates *1/2"* Thickness of water tube plates *3/32"*
 Stay tubes *3/8" x 1 1/2"*

SPARE GEAR. State the articles supplied: *1 Section of Crank Shaft, 1 Propeller Shaft complete, 1 P. Plate*
with studs & nuts. Set of valve spindle, Eccentric, with straps & rod complete, Air
rod & bucket with valves also valves for feed & bilge pumps. Crank pin brasses. Main
bolts, top & bottom end connected. Top bolts (4), Crank Propeller Shaft coupling bolts 2 add
for valve gear complete. 2 Propeller brasses measured
 The foregoing is a correct description, *for valve gear complete. 2 Propeller brasses measured*
 John Brown & Company, Limited. Manufacturer. *of bolts, nuts, springs & a large quantity of other gear*

J. M. McMillan Assistant Secretary.
 Dates of Survey while building
 During progress of work in shops: 1899: - Feb. 2, 9, 17, 22, 27. Mar. 8, 9, 13, 16, 21, 28, 29. Apr. 6, 12, 24. May. 1, 5, 9, 15, 24. Jun.
 During erection on board vessel: 29. July. 31. Aug. 4, 11, 18, 31. Sep. 12, 19. 3 Large steel casting reports the
 Total No. of visits *87* | 16. Oct. 2, 11, 16, 30. Nov. 8, 9, 13. and others. Is the approved plan of main boiler forwarded herewith *Yes*
 } *Libert returned for reference in the engine room of donkey "beech"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery & boiler*
of this vessel are of good workmanship & material and on completion have been tried under full
power and are now in good order & safe working condition & eligible in my opinion to be noted
in the Register Book ✖ *L.M.C. 11/1900*

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.00 F.D. Elec Light

J.S.
 6.12.00

The amount of Entry Fee. £ 3 : : When applied for.
 Special .. £ 101 : 7 : 11/12/00
 Donkey Boiler Fee .. £ : : When received.
 Travelling Expenses (if any) £ : : 6/12/00

James McMillan
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned

THUR. 6 DEC 1900



Classified

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

MACHINE RECORDED 6/17/00