

Clearance order No. 581

REPORT ON MACHINERY.

Port of

Received at London Office 31 JUL 1899

No. in Survey held at *Lindholmen Gothenborg* Date, first Survey *March 24 1899* Last Survey *12 July* 1899

on the *Main boilers and Machinery of S. S. Erik* Tons { Gross Net

Master *A. P. Pettersson* Built at *Gothenburg* By whom built *Lindholmens Verkstads AB.* When built *1899*

Machines made at *Newcastle on Tyne* By whom made *North Eastern Marine Eng Co* when made *6. 1899*

Boilers made at *Gothenburg* By whom made *Lindholmens Verkstads AB.* when made *7 1899*

Registered Horse Power Owners *Rederi bolaget Roslagen* Port belonging to *Stockholm*

Horse Power as per Section 28 ~~78.5~~ *81.5*

Engines, &c.— Description of Engines *Triple* No. of Cylinders *3*

Diameter of Cylinders *13 1/2", 22 1/2", 36"* Length of Stroke *27* Revolutions per minute *103* Diameter of Screw shaft *as per rule 7.16 as fitted 7 1/2"*

Diameter of Tunnel shaft *as per rule 6.5 as fitted 6 3/4"* Diameter of Crank shaft journals *7"* Diameter of Crank pin *7"* Size of Crank webs *4 7/8 x 13 7/8"*

Diameter of screw *9'-6"* Pitch of screw *10'-9"* No. of blades *4* State whether moveable *no* Total surface *29.5*

No. of Feed pumps *2* Diameter of ditto *2 1/2"* Stroke *13 1/2"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *2 1/2"* Stroke *13 1/2"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *3* Sizes of Pumps *6 x 8 1/2 x 6", 5 1/2 x 3 1/2 x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *two 2 1/2" diam.* In Holds, &c. *four 2 1/2" diam*

Bilge injections *2 sizes* Connected *to condenser, or to circulating pump* Is a separate donkey suction fitted in Engine room of size *yes 2 1/2" diam*

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 *valves*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *not all* 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*

How are the pipes 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*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *yes* Is the screw shaft tunnel watertight *yes*

Is the tunnel fitted with a watertight door *yes* worked from *upper engine platform*

Boilers, &c.— (Letter for record) Total Heating Surface of Boilers *1408 sq ft*

No. and Description of Boilers *one cylindrical single ended boiler* Working Pressure *170 lbs* Tested by hydraulic pressure to *340*

Can each boiler be worked separately *yes* Area of fire grate in each boiler *44.6* No. and Description of safety valves to boiler *one double spring loaded*

Area of each valve *12.17 sq in* Pressure to which they are adjusted *175 lbs.* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean diameter of boilers *12'-6"*

Material of shell plates *steel* Thickness *1 1/16"* Description of riveting: circum. seams *double* long. seams *triple riveted double butt straps*

Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *7"* Lap of plates or width of butt straps *15 1/2"*

Percentage of strength of longitudinal joint *87.4* Working pressure of shell by rules *170.1* Size of manhole in shell *17" x 12"*

Diameter of compensating ring *2'-3"* No. and Description of Furnaces in each boiler *3 Purves* Material *steel* Outside diameter *36"*

Thickness of plates *9/16"* Description of longitudinal joint *triple riveted* No. of strengthening rings

Working pressure of furnace by the rules *225 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *7/8"* Back *7/8"* Top *7/8"* Bottom *7/8"*

Diameter of stays to ditto: Sides *7 1/2"* Back *7 1/2"* Top *7 1/2"* If stays are fitted with nuts or riveted heads *riveted* Working pressure by rules *214 lbs*

Material of stays *steel* Diameter at smallest part *1 1/2"* Area supported by each stay *7.22* Working pressure by rules *170 lbs* End plates in steam space:

Material *steel* Thickness *7/8"* Pitch of stays *15 1/2"* How are stays secured *double washers and nuts* Working pressure by rules *179 lbs* Material of stays *steel*

Diameter at smallest part *2 3/8"* Area supported by each stay *4.22* Working pressure by rules *170 lbs* Material of Front plates at bottom *steel*

Thickness *3/4"* Material of Lower back plate *steel* Thickness *7/8"* Greatest pitch of stays *7 1/2"* Working pressure of plate by rules *177 lbs.*

Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2"* Material of tube plates *steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *9' 10"*

Working pressure across wide water spaces *13 1/4"* Working pressures by rules *196 lbs* Girders to Chamber tops: Material *steel* Depth and

Thickness of girder at centre *5 1/2" x 1 1/2"* Length as per rule *2'-3"* Distance apart *7 1/2"* Number and pitch of Stays in each *2 stays*

Working pressure by rules *194 lbs* 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

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

Stays 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— Description *Cochran's patent see particulars attached*
 Made at *Birkenhead* By whom made *Messrs Cochran & Co* When made *1899* Where fixed *Between Eng. & A.*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *1557* Fire grate area *18 1/2* Description of safety valves *one double single*
 No. of safety valves *1* Area of each *4.92* Pressure to which they are adjusted *95* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *5'-9"* Length *13'-0"* Material of shell plates *steel* Thickness *7/16"*
 Description of riveting long. seams *double riveted lap jointed* Diameter of rivet holes *1 1/16"* Whether punched or drilled *drilled* Pitch of rivets *2 1/2"*
 Lap of plating *4 5/8"* Per centage of strength of joint *100* Rivets *Plates* Thickness of shell crown plates *3/32"* Radius of do. *2'-10 1/2"* No. of Stays to do. *1*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *5'-9"* Bottom *5'-9"* Length of furnace *13'-0"* Thickness of furnace plates *15/32"* Description of joint *Stayed by*
 Working pressure of furnace by rules *90.5* Diameter of uptake *5'-9"* Thickness of uptake plates *15/32"* Thickness of water tubes *15/32"*

SPARE GEAR. State the articles supplied:— *4 propeller, piston valve for HP cylinder, 2 main bearing bolts with 2 bolts for bottom brasses of connecting rod, 2 bolts for top brasses of connecting rod, 5 studs with nuts for cylinder steam chest covers, 2 bolts for piston packings, 1 air pump rod, 2 feed pump valves with seats 2 bilge pump 2 air pump valves, 1 set circulating pump valves, 20 condenser tubes, 10 condenser tubes, 1 set coupling for main shafting, 1 set of safety valve springs, 1 set of check valves, 1 bilge pump valve, 1 donkey pump valve, 5 connecting tubes for boiler, 12 gauge glasses, 1 set fire grate bars, 100 assorted*
 The foregoing is a correct description,
LINDHOLMENS VERKSTADS AKTIEBOLAG Manufacturer. of Marine Boilers only.
Sven Almqvist

General Remarks (State quality of workmanship, opinions as to class, &c. *Boiler made of steel with test certificates as per rules, all material in Engines and Boilers of good quality and workmanship sound throughout*
Class recommended 100 A1

It is submitted that this vessel is eligible for THE RECORD. *L.M.C. 7.99*

Handwritten signature and date: 1/8/1899

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

Certificate (if required) to be sent to		
The amount of Entry Fee..	£ 1	When applied for,
Special	£ 24.. 8.	
Donkey Boiler Fee .. .	£ 2	When received,
Travelling Expenses (if any)	£	

C. A. Moller
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned

TUES. 22 AUG 1899
 MACHINERY CERTIFICATE WRITTEN.
+ L.M.C. 7.99

