

# REPORT ON MACHINERY.

Port of Copenhagen

Received at London THUR. DEC 13 1906

No. in Survey held at Copenhagen  
Reg. Book. Steel S.S. "Gerda"

Date, first Survey 20/8

Last Survey 18/11 1906

(Number of Visits 25)

Master T. Nielsen Built at Copenhagen By whom built A.S. Kjöbenhavnsskibsværft When built 1906

Engines made at Copenhagen By whom made A.S. Kjöbenhavnsskibsværft when made 1906

Boilers made at Copenhagen By whom made A.S. Kjöbenhavnsskibsværft when made 1906

Registered Horse Power 79 Owners Dampskibsselskabet Testerkøbenhavn Port belonging to Esbjerg

Nom. Horse Power as per Section 28 79 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Inverted triple expansion, surface cond. No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 14", 22 1/2" & 37" Length of Stroke 24" Revs. per minute 88 Dia. of Screw shaft as per rule 8 3/8" Material of S.M. Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner Is the after end of the liner made water tight  
 in the propeller boss ✓ 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 ✓ If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3'-6"  
 Dia. of Tunnel shaft as per rule 6 3/8" Dia. of Crank shaft journals as per rule 7 1/4" Dia. of Crank pin 7 1/4" Size of Crank webs 5" x 11" Dia. of thrust shaft under  
 collars 7 3/8" Dia. of screw 10'-3" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable no Total surface 35.7 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 6" Can one be overhauled while the other is at work yes One feed injector  
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work yes On 5-ton evaporator  
 No. of Donkey Engines 2 duplex Sizes of Pumps 6" steam cyl. 6" water cyl. 6" stroke No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room One centre suction 2 1/2", Two wing suction 2" In Holds, &c. Fore hold: two - 2", After hold: one - 2", Tunnel well:  
one - 2" Tank suction: main pipes 3 1/4", in DB tanks 3" & 2 1/2", in F.P.T. & A.P.T. 2 1/2"  
 No. of Bilge Injections one sizes 3 1/2" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size 2 1/4"  
 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 none  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves, cock for blow off  
 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  
 Dates of examination of completion of fitting of Sea Connections 13/10 of Stern Tube 4/10 Screw shaft and Propeller 13/10  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper deck

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Plates & Furnaces from H. Beardmore & Co., Glasgow from Steel Comp. of Scotland  
 Total Heating Surface of Boilers 1300 sq. ft. Is Forced Draft fitted no No. and Description of Boilers 2 single ended, horiz. return tube  
 Working Pressure 180 lbs per sq. in. Tested by hydraulic pressure to 360 lbs per sq. in. Date of test 6<sup>th</sup> Oct. 06 No. of Certificate 251 & 252  
 Can each boiler be worked separately yes Area of fire grate in each boiler 20 sq. ft. No. and Description of Safety Valves to  
 each boiler Two spring loaded Area of each valve 3.97 sq. in. Pressure to which they are adjusted 180 lbs per sq. in. Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 9'-7 7/8" Length 9'-6" Material of shell plates S.B. Steel  
 Thickness 7/8" Range of tensile strength 27-32 Tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap joint, double  
 long. seams double butt, str. tight Diameter of rivet holes in long. seams 15/16" Pitch of rivets 6 1/32" Lap of plates or width of butt straps 14 1/4"  
 Per centages of strength of longitudinal joint rivets 97.4% plate 84.4% Working pressure of shell by rules 183.3 lbs Size of manhole in shell 12" x 16"  
 Size of compensating ring 24" x 28" x 7/8" No. and Description of Furnaces in each boiler Two Deighton's pat. Material S.B. Steel Outside diameter 3'-11 1/4"  
 Length of plain part top 11' bottom 11' Thickness of plates crown 1 1/2" + 1/32" Description of longitudinal joint welded No. of strengthening rings 1  
 Working pressure of furnace by the rules 219 lbs Combustion chamber plates: Material S.B. Steel Thickness: Sides 9/16" x 1/32" Back 9/16" Top 9/16" x 1/32" Bottom 9/16" x 1/32"  
 Pitch of stays to ditto: Sides 8" x 8 1/4" Back 7 3/8" x 7 3/8" Top 7 1/2" x 8 3/8" If stays are fitted with nuts or riveted heads nuts inside Working pressure by rules Back 188 lbs  
 Material of stays S.M. Steel Diameter at smallest part 1.384" Area supported by each stay 66 sq. in. Working pressure by rules 182 lbs End plates in steam space:  
 Material S.B. Steel Thickness 15/16" Pitch of stays 18 1/2" x 14" How are stays secured Screwed in both plates Working pressure by rules 184 Material of stays S.M. Steel  
 Diameter at smallest part 2 1/2" Area supported by each stay 259 sq. in. Working pressure by rules 191 lbs Material of Front plates at bottom S.B. Steel  
 Thickness 3/4" Material of Lower back plate S.B. Steel Thickness 3/4" Greatest pitch of stays 12 3/4" x 7 3/8" Working pressure of plate by rules 180 lbs  
 Diameter of tubes 3/4" Pitch of tubes 4 3/8" x 1 1/16" Material of tube plates S.B. Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 1/4"  
 Pitch across wide water spaces 11" Working pressures by rules 209 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 6 3/4" x 5 1/8" x 2" Length as per rule 23 1/4" Distance apart 8 3/8" Number and pitch of stays in each 2 off, 7 1/16" pitch  
 Working pressure by rules 180 lbs Superheater or Steam chest; how connected to boiler none 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 ✓



VERTICAL DONKEY BOILER— 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	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with easing gear	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
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		Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts and nuts, 2 do bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, 1 packing ring for each piston, a quantity of assorted bolts & nuts, iron of various sizes, 1 pair connecting rod brasses, 1 pair crosshead brasses, 1 air pump rod, 1 slide valve spindle fitting, all slide valves, 6 junk ring bolts, 1 set of air and circ. pump valves, 6 boiler tubes, 12 condenser tubes with ferrules, 1 spring for safety valves, 8 water gauge glasses, 1 set firebars

AKTIESELSKABET

The foregoing is a correct description, **KJØBENHAVNS FLYDEDOK OG SKIBSVÆRFT.**  
 Manufacturer. **A. Uggerløse.**

Dates of Survey while building  
 During progress of work in shops: 20/8, 24/8, 23/8, 3/9, 10/9, 12/9, 18/9, 20/9, 24/9, 27/9, 29/9, 1/10, 4/10, 5/10, 6/10, 11/10, 13/10 - 06  
 During erection on board vessel: 18/10, 20/10, 23/10, 31/10, 3/11, 7/11, 15/11, 18/11 - 06  
 Total No. of visits: 25

Is the approved plan of main boiler forwarded herewith *yes*.

Dates of Examination of principal parts—Cylinders 3/9 & 10/9 Slides 12/9 Covers 12/9 Pistons 12/9 Rods 29/9  
 Connecting rods 29/9 Crank shaft 28/7 & 24/9 Thrust shaft 28/7 & 24/9 Tunnel shafts 28/7 & 24/9 Screw shaft 28/7 & 24/9 Propeller 13/10  
 Stern tube 20/9 Steam pipes tested 3/10 Engine and boiler seatings 18/10 & 20/10 Engines holding down bolts 20/10  
 Completion of pumping arrangements 7/11 Boilers fixed 18/10 Engines tried under steam 15/11 & 18/11  
 Main boiler safety valves adjusted 15/11 Thickness of adjusting washers 1/4" & 1/4" + 1/32"

Material of Crank shaft *S.M. Steel* Identification Mark on Do. *R.N. 677 A.F. 6* Material of Thrust shaft *S.M. Steel* Identification Mark on Do. *R.N. 678 A.F. 6*  
 Material of Tunnel shafts *S.M. Steel* Identification Marks on Do. *R.N. 679-681 A.F. 6* Material of Screw shaft *S.M. Steel* Identification Marks on Do. *R.N. 682 A.F. 6*  
 Material of Steam Pipes *Copper* Test pressure *360 lbs per sq. in.*

General Remarks (State quality of workmanship, opinions as to class, &c. In accordance with the rules for Special Survey) we have examined the material and workmanship from the commencement until the final trial under steam and found it good in every respect. The shafts have been forged of Siemens Martin Steel by Messrs. Burmeister & Wain, tested and examined as per rules and found good. The small forgings are of Siemens Martin Steel and have been found good. All the castings are good, the bearings are of proper dimensions and good material. The boiler material has been tested as approved as per test notes received. The dimensions are as specified and in accordance with the rules and the approved plan. On the trial trip the engines and boilers worked satisfactorily.

It is submitted that this vessel is eligible for THE RECORD **L.M.C. 11.06** *13.12.06*

Recommend the vessel's machinery to have notation of **L.M.C. 11.06** and a corresponding certificate.

The amount of Entry Fee..	£ 1 : - : -	When applied for, 3/12 1906
Special .. .. .	£ 11 : 17 : -	When received, 21.12.1906
Donkey Boiler Fee .. .	£ . : - : -	
Travelling Expenses (if any) £	. : - : -	

*R. Somer*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned *+ L.M.C. 11.06*

FRI. DEC 14 1906



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