

REPORT ON MACHINERY.

No. 2392.

Port of Copenhagen

Received at London

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No. in Survey held at CopenhagenDate, first Survey 20/8Last Survey 18/11

1906

Reg. Book.

(Number of Visits 25)2nd Gen. Report on the Steel S.S. "Gerda"Master T. NielsenBuilt at Copenhagen

By whom built

A. S. Hjøbenhavns Flydedok og SkibsværftGross 775Net 455When built 1906Engines made at Copenhagen

By whom made

A. S. Hjøbenhavns Flydedok og Skibsværftwhen made 1906Boilers made at Copenhagen

By whom made

A. S. Hjøbenhavns Flydedok og Skibsværftwhen made 1906

Registered Horse Power

Owners

Dampskibsselskabet Testerkøbenhavn

Port belonging to

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

ENGINES, &c.—Description of Engines

Inverted triple expansion, surface cond.No. of Cylinders 3No. of Cranks 3Dia. of Cylinders 14" 22 1/2" & 37"Length of Stroke 24"Revs. per minute 88

Dia. of Screw shaft

as per rule 8 3/8Material of S.M. SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube no

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 ✓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 1/4Dia. of Crank pin 7 1/4Size of Crank webs 5" x 14"

Dia. of thrust shaft under

collars 7 3/8Dia. of screw 10'-3"Pitch of Screw 10'-6"No. of Blades 4State whether moveable noTotal surface 35.7 sq. ft.No. of Feed pumps 2Diameter of ditto 3 1/2"Stroke 6"Can one be overhauled while the other is at work yesNo. of Bilge pumps 2Diameter of ditto 3"Stroke 12"Can one be overhauled while the other is at work yesNo. 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 suctions 2"In Holds, &c. Two hold: two - 2", After hold: one - 2", Tunnel well: one - 2"Tank suctions: 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 onesizes 3 1/2"Connected to condenser, or to circulating pump yesIs a separate Donkey Suction fitted in Engine room & size 2 1/4"Are all the bilge suction pipes fitted with roses yesAre the roses in Engine room always accessible yesAre the sluices on Engine room bulkheads always accessible noneAre all connections with the sea direct on the skin of the ship yesAre they Valves or Cocks Valves, cock for blow offAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yesAre the Discharge Pipes above or below the deep water line aboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel yesAre the Blow Off Cocks fitted with a spigot and brass covering plate yesWhat pipes are carried through the bunkers noneHow are they protected ✓Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesDates of examination of completion of fitting of Sea Connections 13/10of Stern Tube 4/10Screw shaft and Propeller 13/10Is the Screw Shaft Tunnel watertight yesIs it fitted with a watertight door yesworked from upper deckBOILERS, &c.—(Letter for record S)Manufacturers of Steel Plates & Furnaces from T. Beardmore & Co., GlasgowTotal Heating Surface of Boilers 1300 sq. ft.Is Forced Draft fitted noNo. and Description of Boilers 2 single ended, horiz. return tubeWorking Pressure 180 lbs. per sq. in.Tested by hydraulic pressure to 360 lbs. per sq. in.Date of test 6th Oct. 06No. of Certificate 251 & 252Can each boiler be worked separately yesArea of fire grate in each boiler 20 sq. ft.

No. and Description of Safety Valves to

each boiler Two spring loadedArea of each valve 3.97 sq. in.Pressure to which they are adjusted 180 lbs. per sq. in.Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 12"Mean dia. of boilers 9'-7 1/8"Length 9'-6"Material of shell plates S.B. SteelThickness 7/8"Range of tensile strength 27-32 TonsAre the shell plates welded or flanged noDescrip. of riveting: cir. seams lap joint, doublelong. seams double butt, str. tightDiameter 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. SteelOutside diameter 3'-1 1/4"

Length of plain part

top 1'-0"bottom 1'-0"

Thickness of plates

crown 1 1/2" & 1 1/2"Description of longitudinal joint weldedNo. of strengthening rings 1Working pressure of furnace by the rules 219 lbs.Combustion chamber plates: Material S.B. SteelThickness: Sides 9/16" & 1/2"Back 9/16"Top 9/16" & 1/2"Bottom 9/16" & 1/2"Sides 184.6 lbs.Back 188 lbs.Pitch of stays to ditto: Sides 8" x 8 1/4"Back 7 3/8" x 7 3/8"Top 7 3/8" x 8 1/4"If stays are fitted with nuts or riveted heads nuts insideWorking pressure by rules 182 lbs.

End plates in steam space:

Material of stays S.M. SteelDiameter at smallest part 1 3/8"Area supported by each stay 66 sq. in.Working pressure by rules 182 lbs.Material of stays S.M. SteelThickness 15/16"Pitch of stays 18 1/2" x 14"How are stays secured Screwed in both platesWorking pressure by rules 184 lbs.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. SteelThickness 3/4"Material of Lower back plate S.B. SteelThickness 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 1/4"Pitch of tubes 4 3/8" x 4 1/2"Material of tube plates S.B. SteelThickness: 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" pitchWorking 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 ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓Working pressure of end plates ✓Area of safety valves to superheater ✓Are they fitted with easing gear ✓

W875-0116

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	Description of Safety
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	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	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.
A. Uggerløse.
Manufacturer.

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
Stern tube	20/9	Steam pipes tested	3/10	Engine and boiler seatings	18/10 & 20/10
Completion of pumping arrangements	7/11	Boilers fixed	18/10	Engines holding down bolts	20/10
Main boiler safety valves adjusted	15/11	Thickness of adjusting washers	1/4" & 1/4" & 1/32"	Engines tried under steam	15/11 & 18/11
Material of Crank shaft	L.M. Steel	Identification Mark on Do.	R.N. 671 A.F. 6	Material of Thrust shaft	L.M. Steel
Material of Tunnel shafts	L.M. Steel	Identification Marks on Do.	R.N. 679-681 A.F. 6	Material of Screw shafts	L.M. Steel
Material of Steam Pipes	Copper	Identification Marks on Do.	R.N. 682 A.F. 6	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

Recommend the vessels 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,	21.12.06
Donkey Boiler Fee .. .	£ - : - : -		
Travelling Expenses (if any)	£ - : - : -		

Committee's Minute
Assigned

FRI. DEC 14 1906

+ L.M.C. 11.06

MACHINERY CERTIFICATE
WRITTEN.

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

