

REPORT ON MACHINERY.

No. 1436 a.

MON. MAR. 15. 1915

Received at London Office

Date of writing Report 5/3 1915 When handed in at Local Office 8-3 1915 Port of Christiania.

No. in Survey held at Tredikstet Date, First Survey 23-9-1914 Last Survey 15-2-1915

Reg. Book. on the S/S Skard (Number of Visits 1/4)

Master Edu. Andersen Built at Tredikstet By whom built Os. Tredikstet mek. Verket When built 1915
Tons { Gross 1814.06
Net 1099.07

Engines made at Tredikstet By whom made Os. Tredikstet mek. Verket when made 2-1915

Boilers made at Tredikstet By whom made Os. Tredikstet mek. Verket when made 2-1915

Registered Horse Power Owners Os. Skule, Maage, B. A. Saame. Port belonging to Christiania

Nom. Horse Power as per Section 28 216 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 20 1/2, 33, 56 Length of Stroke 36 Revs. per minute 70 Dia. of Screw shaft as per rule 11 9/16 as fitted 11 9/16 Material of screw shaft 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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4'-3"

Dia. of Tunnel shaft as per rule 10 1/16 as fitted 10 1/16 Dia. of Crank shaft journals as per rule 10 9/16 as fitted 10 9/16 Dia. of Crank pin 10 5/8 Size of Crank webs 21-7 Dia. of thrust shaft under collars 10 9/16 Dia. of screw 14'-6" Pitch of Screw 16'-8" No. of Blades 4 State whether moveable no Total surface 71 sq ft.

No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 17 1/2 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 5/8 Stroke 17 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6x4-6 and 7 1/2-8-7 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 off 2 3/4" In Holds, &c. off hold, well, 1 off 3" and 2 off 2 1/4"

No. of Bilge Injections 1 sizes 5 1/2 Connected to condenser, or to circulating pump circ. p. Is a separate Donkey Suction fitted in Engine room & size yes 2 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 valves

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 7-11-14 of Stern Tube 7-1-15 Screw shaft and Propeller 7-1-15

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

BOILERS, &c.—(Letter for record E) Manufacturers of Steel Messer. Thyssen & Co. From. Steel work, Gewerkschaft Beuthausen Kain

Total Heating Surface of Boilers 3488 Is Forced Draft fitted no No. and Description of Boilers two single ended

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 25/11-1914 No. of Certificate 70 + 71

Can each boiler be worked separately yes Area of fire grate in each boiler 46 sq ft. No. and Description of Safety Valves to each boiler one double Area of each valve 14, 186 sq in Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 14'-0" Length 10'-6" Material of shell plates steel

Thickness 1 1/8 + 1/64 Range of tensile strength 28-32 tons Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double long. seams double Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18"

Per centages of strength of longitudinal joint rivets 91.45 plate 85.7 Working pressure of shell by rules 182.39 lbs. Size of manhole in shell 12-16"

Size of compensating ring 9'-1 1/8" No. and Description of Furnaces in each boiler 3 corrugated Material steel Outside diameter 3'-8 1/4"

Length of plain part top 3" bottom 6" Thickness of plates crown 1/2 + 1/32 bottom 1/2 + 1/32 Description of longitudinal joint welded No. of strengthening rings 9

Working pressure of furnace by the rules 184.3 Combustion chamber plates: Material steel Thickness: Sides 5/8 + 7/64 Back 5/8 + 3/32 Top 3/4 + 1/32 Bottom 5/8 + 7/64

Pitch of stays to ditto: Sides 7 1/8 - 9 1/2 Back 8 - 9 Top 9 1/2 - 10 1/2 If stays are fitted with nuts or riveted heads and a few with nuts Working pressure by rules 181.34

Material of stays steel Diameter at smallest part 1 5/8" Area supported by each stay 72 sq in Working pressure by rules 191.9 End plates in steam space: Material steel Thickness 1 1/16 + 1/32 Pitch of stays 20 1/2 - 19 How are stays secured double nuts and washers Working pressure by rules 180.8 Material of stays steel

Diameter at smallest part 3 1/2" Area supported by each stay 389.5 sq in Working pressure by rules 193 Material of Front plates at bottom steel

Thickness 1 5/16 + 1/64 Material of Lower back plate steel Thickness 7/8 + 1/32 Greatest pitch of stays 15 1/16 Working pressure of plate by rules 185

Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" Material of tube plates steel Thickness: Front 1 5/16 + 1/64 Back 1 3/16 Mean pitch of stays 8 3/4 - 13 1/8"

Pitch across wide water spaces 1 3/4" Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2 x 9 - 3/4" Length as per rule 29 1/16 Distance apart 10 & 10 1/2 Number and pitch of stays in each 2 x 9 1/2"

Working pressure by rules 220.2 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

1m. 212-T.

Lloyd's Register Foundation

W280-0069

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 casing 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	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:— 2 cross head bolts and nuts, 2 connecting rod bottom end bolts and nuts, 2 main bearing bolts, 1 set of feed and bilge pump valves, 1 set of piston springs for low pressure piston, a quantity of assorted bolts and nuts, iron of various sizes, 1 propeller shaft, 1 propeller. *1 set coupling bolts.*

The foregoing is a correct description, *see list ltr. 7.4.15.*
pr. 1/2 of ...
 Manufacturer.

Dates of Survey while building	During progress of work in shops --	23/9, 5/10, 20/10, 3/11, 13/11, 25/11, 7/12, 16/12, 2/12, 30/12 - 1914
	During erection on board vessel ---	7/1, 14/1, 21/1, 28/1, 9/2, 13/2, 15/2 - 1915
	Total No. of visits	17

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—	Cylinders	20/10	Slides	20/10	Covers	20/10	Pistons	13/11	Rods	13/11	
Connecting rods	13/11	Crank shaft	5/10-14	Thrust shaft	5/10-14	Tunnel shafts	5/10-14	Screw shaft	5/10-14	Propeller	9/1
Stern tube	9/1	Steam pipes tested	9/2	Engine and boiler seatings	14/1	Engines holding down bolts	9/2				
Completion of pumping arrangements	15/2	Boilers fixed	15/2	Engines tried under steam	15/2-15						
Main boiler safety valves adjusted	15/2-15	Thickness of adjusting washers	none								

Material of Crank shaft	steel	Identification Mark on Do.	AFO 3915.8.14	Material of Thrust shaft	steel	Identification Mark on Do.	K.H. 9563.5.14
Material of Tunnel shafts	steel	Identification Marks on Do.	K.H. 9524.5.14 K.H. 9525.5.14 K.H. 9526.5.14 K.H. 9527.5.14 K.H. 9528.5.14	Material of Screw shafts	steel	Identification Marks on Do.	5725.W.D.H.
Material of Steam Pipes	steel pipes	Test pressure	540 lbs (hydraulic pressure 1135 lbs.)				

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built and tested in accordance with the Rules.

The boilers have been constructed in accordance with the approved plan. The steel material used in the construction of these boilers have been manufactured at approved works and tested by the Society's Surveyors as per Rule.

The boilers have been tested by hydraulic pressure to 360 lbs and found tight. Boilers examined under steam pressure and the safety valves set to 180 lbs per square inch.

The machinery have been tried under steam and found to work satisfactory.

The workmanship throughout are of the best and to our entire satisfaction. Quickacting stop-valves have been fitted on to each boiler examined under steam and found to work satisfactory.

Recommend **+** LMC 2,15 in the Register Book

It is submitted that this vessel is eligible for THE RECORD. + LMC 2,15

The amount of Entry Fee	£ 2 : 0/46	When applied for,	9/3
Special	£ 30	16/643,30	19/15
Donkey Boiler Fee	£ :	When received,	29/14
Travelling Expenses (if any) £	:	18/2	19/15

Per Bjorn-Reli
 Ludw. C. S. Lyttel
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. APR. 16. 1915

Assigned + LMC 2,15

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



Rpt. 1
 Port
 No. in Reg. Book
 Owners
 Yard No.
 DESCRIP
 Capacity
 Where is
 Position
 Positions
 3-f
 If cut out
 circu
 If vessel is
 Are the cu
 Are all cu
 are p
 Are all sw
 Total num
 A 3
 B 6
 C 11
 D 8
 E 45
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 If arc light
 Where are
 DESCRIP
 Main cable
 Branch cable
 Branch cable
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 Are there any
 How are the