

Rpt. 4.

REPORT ON MACHINERY.

No. 23069

Add 4888

Received at London Office FRI. JAN 18 1907

Port of SunderlandNo. in Survey held at SunderlandDate, first Survey January 10th 1906 Last Survey 30 Nov 1906

Reg. Book.

on the

S. S. O. A. Knudsen(Number of Visits 77)Gross 3532.05

Master

Built at

Stockton

By whom built

Messrs. Craig Taylor & Co

Tons

Net 2269.96

Engines made at

Sunderland

By whom made

Messrs. J. Dickinson & Sons

when made

1906

Boilers made at

Sunderland

By whom made

Messrs. J. Dickinson & Sons

when made

1906

Registered Horse Power

Owners

Knut Knudsen Esq

Port belonging to

Ningsund

Nom. Horse Power as per Section 28

307

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

ENGINES, &c.—Description of Engines

Inverted triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

24 $\frac{1}{2}$, 40, 66

Length of Stroke

45

Revs. per minute

70

Dia. of Screw shaft

as per rule 13.79

Material of

Iron

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

Yes

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

Yes

If two

liners are fitted, is the shaft lapped or protected between the liners

Yes

Length of stern bush

4.9

Dia. of Tunnel shaft

as per rule 12.21

Dia. of Crank shaft journals

as per rule 12.8

Dia. of Crank pin

12.7 $\frac{1}{2}$

Size of Crank webs

23 $\frac{1}{2}$ x 8 $\frac{1}{2}$

Dia. of thrust shaft under

collars

12.7 $\frac{1}{2}$

Dia. of screw

17.0

Pitch of Screw

16.0

No. of Blades

4

State whether moveable

no

Total surface

82

No. of Feed pumps

2

Diameter of ditto

3 $\frac{1}{2}$

Stroke

22 $\frac{1}{2}$

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 $\frac{1}{2}$

Stroke

22 $\frac{1}{2}$

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

6 x 4 x 6 + 8 x 10 x 10

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

4 of 3 $\frac{1}{2}$ In Holds, &c. Two each hold 3 $\frac{1}{2}$ diam

No. of Bilge Injections

1

sizes

4

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room & size

Yes

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

Yes

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

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

Yes

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

10-12-06

of Stern Tube

23.11.06

Screw shaft and Propeller

23.11.06

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yesworked from top platformBOILERS, &c.—(Letter for record 6)

Manufacturers of Steel

Messrs. J. Spencer & Sons

Total Heating Surface of Boilers

4600

Is Forced Draft fitted

no

No. and Description of Boilers

2. S.E. Cylindrical Built

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

20.10.06

No. of Certificate

2537

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

71

No. and Description of Safety Valves to

each boiler

2 spring

Area of each valve

8.29

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

18

Mean dia. of boilers

15.9 $\frac{1}{2}$

Length

10.6

Material of shell plates

steel

Thickness

1 $\frac{3}{32}$

Range of tensile strength

28/32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d.v. lap

long. seams

E.V. d. & s.

Diameter of rivet holes in long. seams

1 $\frac{3}{8}$

Pitch of rivets

9 $\frac{5}{16}$

Lap of plates or width of butt straps

20 $\frac{1}{2}$

Per centages of strength of longitudinal joint

rivets 92-6plate 85-23

Working pressure of shell by rules

181.5 lbs

Size of manhole in shell

16 x 12

Size of compensating ring

8 $\frac{3}{4}$ x 1 $\frac{1}{32}$

No. and Description of Furnaces in each boiler

4-plain

Material

steel

Outside diameter

40 $\frac{1}{4}$

Length of plain part

top 84 $\frac{1}{4}$ bottom 84 $\frac{1}{4}$

Thickness of plates

crown 49/64bottom 49/64

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

180 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

4/16

Back

11/16

Top

11/16

Bottom

1

Pitch of stays to ditto: Sides

10 x 9

Back

10 x 9

Top

9 x 9

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

180.5 lbs

Material of stays

steel

Diameter at smallest part

2.03

Area supported by each stay

90

Working pressure by rules

203 lbs

End plates in steam space:

Material

steel

Thickness

1 $\frac{3}{32}$

Pitch of stays

18 x 17 $\frac{1}{2}$

How are stays secured

d.v. w.

Working pressure by rules

184 lbs

Material of stays

steel

Diameter at smallest part

8.57

Area supported by each stay

18 x 17 $\frac{1}{2}$

Working pressure by rules

184 lbs

Material of Front plates at bottom

steel

Thickness

7/8

Material of Lower back plate

steel

Thickness

21/32

Greatest pitch of stays

13 $\frac{1}{8}$ x 10

Working pressure of plate by rules

184 lbs

Diameter of tubes

3 $\frac{1}{4}$

Pitch of tubes

4 $\frac{1}{2}$ x 4 $\frac{1}{2}$

Material of tube plates

steel

Thickness: Front

1 $\frac{3}{32}$

Back

7/8

Mean pitch of stays

9

Pitch across wide water spaces

13 $\frac{1}{4}$

Working pressures by rules

244 lbs

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

6 $\frac{1}{2}$ x 2

Length as per rule

24 $\frac{1}{32}$

Distance apart

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:— *Propeller, 2 top end, 2 bottom end, 2 main bearing and 1 set of coupling bolts Feed & bilge pump & valves, set of safety valve springs, 1 main and donkey feed check valves*

The foregoing is a correct description,

John D. & Sons, Limited.

Manufacturer.

Dates of Survey while building { During progress of work in shops - 1906 Jan 10, 24, 30, Feb 5, 12, 15, 20, 26, Mar 2, 6, 16, 20, 26, Apr 4, 10, 30, May 3, 16, 21, 25, 31, June 11, 14, July 2, 13, 16, 19, 20, Aug 1, 5, 9, 13, 15, 16, 24, 29, Sept 1, 5, 6, 10, 11, 12, 13, 14, 17, 19, 20, 21, 24, 25, Oct 1, 2, 3, 6, 11, 15, 17, 18, 20, 23, 24, 29, 30, Is the approved plan of main boiler forwarded herewith *Yes*

board vessel - *Indb* { During erection on board vessel - 1906 July 30, Oct 17, 30, Nov 8, 23, Dec 1, 10, 13, 1907 Jan 3, 4, 9

Total No. of visits *77*

Dates of Examination of principal parts—Cylinders *2.10.06* Slides *10.9.06* Covers *19.9.06* Pistons *19.9.06* Rods *11.9.06*

Connecting rods *6.9.06* Crank shaft *10.9.06* Thrust shaft *16.9.06* Tunnel shafts *14.9.06* Screw shaft *12.9.06* Propeller *27.10.06*

Stern tube *2.10.06* Steam pipes tested *27.11.06* Engine and boiler seatings *27.11.06* Engines holding down bolts *27.11.06*

Completion of pumping arrangements *30.11.06* Boilers fixed *27.11.06* Engines tried under steam *30.11.06*

Main boiler safety valves adjusted *30.11.06* Thickness of adjusting washers *P.F. 1/2", P.A. 1/2", S.F. 1/2", S.A. 1/2"*

Material of Crank shaft *steel* Identification Mark on Do. *343 B* Material of Thrust shaft *steel* Identification Mark on Do. *5262 J.M.*

Material of Tunnel shafts *steel* Identification Marks on Do. *3056, 3057, 3058* Material of Screw shafts *Iron* Identification Marks on Do. *348 B*

Material of Steam Pipes *Copper* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery of this vessel has been constructed under special survey the workmanship and materials used are both of good quality, the Engines have been tried under steam and worked satisfactorily*

We beg to recommend that this vessel is eligible in our opinion to have the record in the Register Book

It is submitted that this vessel is eligible for THE RECORD, + LMC 1.07

J.S.M.
18/1/07

The amount of Entry Fee... £ 3 : : When applied for, 12.12.1906

Special ... £ 35 : 7 : When received, 15.1.1907

Donkey Boiler Fee ... £ : :

Travelling Expenses (if any) £ : :

R. W. Coombes & Geo. R. Milner
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES. JAN 22 1907*

Assigned *+ LMC 1.07*

MACHINERY CERTIFICATE WRITTEN.

Lloyd's Register Foundation