

REPORT ON MACHINERY.

No. 7947

Date of writing Report

23 JUN 1916

When handed in at Local Office

23 JUN 1916

Port of

Received at London Office

DUNDEE SAT. JUN. 24. 1916

No. in Survey held at
Reg. Book.

Dundee

Date, First Survey 5th May 1915 Last Survey 15th June 1916

(Number of Visits 45)

on the MACHINERY OF THE STEEL S.S. "DEN PARK"

Master

Built at

Grangemouth

By whom built

Grunock & Grangemouth Dyke & Co. (SHIP N^o 364)

Gross

Net

When built 1916

Engines made at

Dundee

By whom made

Cooper & Frig. L. (ENG. N^o 172)

when made 1916

Boilers made at

Glasgow

By whom made

Dunsmuir & Jackson, L. (BR. N^o 461)

when made 1916

Registered Horse Power

Owners

Dunblair & Co. (Dyke & Co.)

Port belonging to

Grunock

Nom. Horse Power as per Section 28

228

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple Expansion Surface Condensing

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

21" 35" 25 7"

Length of Stroke

36"

Revs. per minute

78

Dia. of Screw shaft

as per rule 11.79"

Material of screw shaft

Wrought 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

solid

If two

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

yes

Length of stern bush

4'-1 1/2"

Dia. of Tunnel shaft

as per rule 10.29"

Dia. of Crank shaft journals

as per rule 10.81"

Dia. of Crank pin

11"

Size of Crank webs

18" x 7 1/2"

Dia. of thrust shaft under

collars

11"

Dia. of screw

14'-9"

Pitch of Screw

15'-6"

No. of Blades

4

State whether moveable

solid

Total surface

75 sq ft

No. of Feed pumps

2

Diameter of ditto

3 1/4"

Stroke

18"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

18"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

3

Sizes of Pumps

BALAST PUMP 9" x 11" x 10" D.P.
GEN. DY. " 7" x 5" x 5" D.P.
DONKEY EN. " 2" x 2 1/4" x 5"

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

In Engine Room

2 @ 2 3/4"

Port & Starboard

2 @ 2 1/2" in stokehold

In Holds, &c.

Fore peak 1 @ 2 1/2"

Fore hold 2 @ 2 3/4"

After hold 1 @ 2 1/2"

Aft hold 1 @ 2 1/2"

and After peak 1 @ 2 1/2"

No. of Bilge Injections

1 sizes 4 1/4"

Connected to condenser or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

yes 3"

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

no

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

bilge suction only

How are they protected

wood sheathing

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

18.2.16

of Stern Tube

17-4-16

Screw shaft and Propeller

17-4-16

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from top platform in engine room

BOILERS, &c.—(Letter for record)

yes

Manufacturers of Steel

Total Heating Surface of Boilers

3734 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

2 S.E. cylindrical multitubular

Working Pressure

180 lbs.

Tested by hydraulic pressure to

360 lbs.

Date of test

6-7-15

No. of Certificate

13201

Can each boiler be worked separately

yes

Area of fire grate in each boiler

56 sq ft

No. and Description of Safety Valves to

each boiler

2 direct spring loaded

Area of each valve

7.57 sq in

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

9"

Mean dia. of boilers

14'-7 1/4"

Length

10'-6"

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets
plate

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top
bottom

Thickness of plates

crown
bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

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

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

Lloyd's Register

Foundation

002770-002783-0056

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes. GLS. REP. N° 3578.*

SPARE GEAR. State the articles supplied: - 2 top and 2 bottom end bolts and nuts; 2 main bearing bolts; 1 set of coupling bolts; 1 set of fuel and bilge pump valves; 1 set of springs for HP pistons; 1 piston ring for M & L.P. 1 propeller; Assorted bolts & nuts; iron various sizes; pump valves for air, circulating and drain pumps; 12 boiler tubes; safety valve spring; escape valve spring for each size; 1 fuel chuck valve.

The foregoing is a correct description,

For COOPER & GREIG, LIMITED.

W. R. Cooper
MANAGING DIRECTOR

Manufacturer.

Dates of Survey while building
During progress of work in shops - - 1915. MAY 5, 27, JUNE 17, JULY 2, 15, AUG. 16, 19, 28, SEPT. 6, 17, 30, NOV. 17, 30, DEC. 16, 21
During erection on board vessel - - - 1916. APR. 14, 17, 18, 24, 25, 27, MAY 1, 3, 4, 8, 12, 14, 18, 23, 29, 31, JUNE 12, 13, 15.
Total No. of visits 48

Is the approved plan of main boiler forwarded herewith *no.*

" " " donkey " " *yes.*

Dates of Examination of principal parts - Cylinders $17/15$ & $21/15$ Slides $4/16$ & $3/16$ Covers $4/16$ & $3/16$ Pistons $16/15$ & $29/16$ Rods $16/15$ & $12/15$
Connecting rods $12/15$ & $30/15$ Crank shaft $5/15$ & $16/16$ Thrust shaft $14/15$ & $14/16$ Tunnel shafts $30/15$ & $14/16$ Screw shaft $14/15$ & $14/16$ Propeller $29/15$ & $17/15$

Stern tube $2/16$ & $3/16$ & $14/16$ Steam pipes tested 14-6-16 Engine and boiler seatings 14-3-16 Engines holding down bolts 31-5-16

Completion of pumping arrangements 12-6-16 Boilers fixed 31-5-16 Engines tried under steam 12-6-16

Main boiler safety valves adjusted 12-6-16 Thickness of adjusting washers Port $\{ \begin{matrix} P \\ S \end{matrix} \} \begin{matrix} 11/32 \\ 11/32 \end{matrix}$ Mainboard $\{ \begin{matrix} P \\ S \end{matrix} \} \begin{matrix} 9/32 \\ 17/64 \end{matrix}$

Material of Crank shaft *Steel* Identification Mark on Do. N° 7908 Material of Thrust shaft *Steel* Identification Mark on Do. N° 790

Material of Tunnel shafts *W. Iron* Identification Marks on Do. N° 7908 Material of Screw shafts *W. Iron* Identification Marks on Do. N° 790

Material of Steam Pipes *Lapwelded steel tubes* Test pressure 54.0 lbs.

Is an installation fitted for burning oil fuel *no.* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *no.* If so, state name of vessel *✓*

General Remarks (State quality of workmanship; opinions as to class, &c.)

This vessel's engines and boilers have been constructed under special survey in accordance with the approved plan and the Society's rules.

The material and workmanship are of good description.

The machinery has been examined under full working conditions and found satisfactory and eligible, in my opinion, to have record of + LMC 6, 16.

For full particulars of main and donkey boilers see Glasgow Report Nos. 35845 and 35783.

First entry report on Electric Lighting Installation will follow as soon as received from Electricians.

It is submitted that this vessel is eligible for THE RECORD + LMC 6, 16.

The amount of Entry Fee ... £ 2 : 0 : 0 When applied for, 23rd June 1916
3/3 Special ... £ 20 : 18 : 8
Donkey Boiler Fee ... £ : : : When received, 26/7/1916
Travelling Expenses (if any) £ : 13 : 4 29/7/16

Committee's Minute

Assigned

TUE JUN. 27. 1916

+ h.m.c. 6, 16

MACHINERY CERTIFICATE
WRITTEN.

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



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