

REPORT ON MACHINERY.

No. 5668

Received at London Office

TUE. OCT. 15 1910

Date of writing Report

19

When handed in at Local Office

19

Port of

Bilbao

Date in Survey held at
eg. Book.

Bilbao

Date First Survey

5/2/20

Last Survey

24/8

1920

(Number of Visits)

19

Tons

Gross 5453

Net 3451

When built 1920

Master C. DELGALDE Built at Bilbao

By whom built Cia. Industrial de Constr. y Rep. de Bilbo

Engines made at Sunderland

By whom made J. Dickinson & Sons, Ltd.

when made 1920

Boilers made at Sunderland

By whom made J. Dickinson & Sons, Ltd.

when made 1920

Registered Horse Power

Owners

Sota y Agua

Port belonging to Bilbao

Nom. Horse Power as per Section 28

456

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

27 1/2 - 45 - 75

Length of Stroke

48

Revs. per minute

84

Dia. of Screw shaft

15 1/2

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

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

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

Length of stern bush

5'-3"

Dia. of Tunnel shaft

as per rule 13.52

Dia. of Crank shaft journals

as per rule 14.19

Dia. of Crank pin

14 1/2

Size of Crank webs

9 1/2 x 26

Dia. of thrust shaft under

Collars

14 1/2

Dia. of screw

17'-9"

Pitch of Screw

16'-9"

No. of Blades

4

State whether moveable

no

Total surface

99 sq

No. of Feed pumps

2

Diameter of ditto

4 1/2

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4 1/2

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

7

Sizes of Pumps

AUX. 7 1/2 x 5 x 6

BALLAST 6 x 6 x 15

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

In Holds, &c. Nos 1-2-3-4

Two suction each

No. of Engine Room

For 3 1/2

8 R. Air Tank

one 3 1/2

In Holds, &c. Nos 1-2-3-4

Two suction each

Tunnel well one 3 1/2

7 & A peaks one each, 3"

No. of Bilge Injections

1

sizes

8"

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room & size

Two 3 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

yes

Are all connections with the sea direct on the skin of the ship

yes

Are they Valves or Cocks

both

Are the Discharge Pipes above or below the deep water line

above

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate

yes

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

yes

How are they protected

-

That pipes are carried through the bunkers

none

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

Is the Screw Shaft Tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from

upper deck

MILLERS, &c.—(Letter for record

(S)

Manufacturers of Steel

John Spence & Sons Ltd.

Total Heating Surface of Boilers

7494 sq

Is Forced Draft fitted

no

No. and Description of Boilers

Three S.E. marine

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

22-10-19

No. of Certificate

3619

Can each boiler be worked separately

yes

Area of fire grate in each boiler

65 sq

No. and Description of Safety Valves to

each boiler

Each boiler

2 direct spring

Area of each valve

83 sq

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

Mean dia. of boilers

13'-9"

Length

11'-9"

Material of shell plates

steel

Thickness

1 1/2"

Range of tensile strength

28 3/4 - 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

lap

Long. seams

D.B.S.T.R.

Diameter of rivet holes in long. seams

1 5/16"

Pitch of rivets

8 15/16"

Lap of plates or width of butt straps

19 1/4"

Be given per centages of strength of longitudinal joint

rivets 92.46

plate 85.31

Working pressure of shell by rules

181

Size of manhole in shell

16" x 12"

Size of compensating ring

8 5/8 x 1 1/32

No. and Description of Furnaces in each boiler

3

Height

Material

steel

Outside diameter

4'-2"

Length of plain part

top

Thickness of plates

crown 19/32

Description of longitudinal joint

welded

No. of strengthening rings

yes

Working pressure of furnace by the rules

189

Combustion chamber plates: Material

steel

Thickness: Sides

23/32

Back

11/16"

Top

23/32

Bottom

23/32

Pitch of stays to ditto: Sides

7 1/2 x 12

Back

10 3/8 x 8 1/2

8 7/8 x 10

stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

180

Material of stays

steel

Area at smallest part

2.03 sq

Area supported by each stay

90 sq

Working pressure by rules

203

End plates in steam space:

Material

steel

Thickness

1 3/16"

Pitch of stays

18 1/2 x 20

How are stays secured

D.N.

Working pressure by rules

180

Area at smallest part

6.5 sq

Area supported by each stay

370 sq

Working pressure by rules

182

Material of Front plates at bottom

steel

Thickness

7/8"

Material of Lower back plate

steel

Thickness

2 7/32"

Greatest pitch of stays

12 3/4 x 10 1/2

Working pressure of plate by rules

180

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2 x 4 1/2

Material of tube plates

steel

Thickness: Front

7/8"

Back

7/8"

Mean pitch of stays

10 5/8"

Pitch across wide water spaces

13 1/4 x 5 1/8

Working pressures by rules

288

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

8 3/8 x 2 1/4

Length as per rule

37 5/32

Distance apart

8 7/8"

Number and pitch of stays in each

3 @ 10"

Working pressure by rules

184

Steam dome: description of joint to shell

none

% of strength of joint

-

Diameter

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

How stayed

-

Pitch of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

-

-

-

-

SUPERHEATER. Type

Date of Approval of Plan

Tested by Hydraulic Pressure to

-

-

-

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:—Two top end bolts and nuts, two bottom end bolts and nuts, Two main bearing bolts. One set coupling bolts. One set feed and bilge pump valve. One set of piston springs. Assorted bolts nuts & washers of various sizes. One propeller.

The foregoing is a correct description,

FOR LA COMPAÑIA EUSKALDUNA DE
CONSTRUCCIÓN Y REPARACIÓN DE BUQUES

El Director,
Ayuntamiento de Bilbao

Manufacturer.

Dates of Survey while building
(During progress of work in shops --)
(During erection on board vessel --)
Total No. of visits

1920 FEB. 5, 10 APRIL 22, MAY 6, 11, 14, 19, 26, JUNE 11, JULY 1, 14, 15, 16, 18, 22, AUG. 4, 20, 24.

19

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders

Slides

Covers

Pistons

Rods

Connecting rods

Crank shaft

Thrust shaft

Tunnel shafts

Screw shaft

Propeller

Stern tube

Steam pipes tested

Engine and boiler seatings

Engines holding down bolts

Completion of pumping arrangements

Boilers fixed

Engines tried under steam

Completion of fitting sea connections

Stern tube

Screw shaft and propeller

Main boiler safety valves adjusted

Thickness of adjusting washers

PORT BLK. CENTR. BLK. AFF. V. 5/16 FD. V. 3/8 P. V. 3/8 ST. V. 9/16

Material of Crank shaft

Steel Identification Mark on Do. 848

Material of Thrust shaft

Steel Identification Mark on Do. 848

Material of Tunnel shafts

Steel Identification Marks on Do. 848

Material of Screw shafts

Steel Identification Marks on Do. 848

Material of Steam Pipes

S. D. Copper

Test pressure 360 lbs. sq. in.

Is an installation fitted for burning oil fuel

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

If so, state name of vessel

General Remarks

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

These engines and boiler were examined by me during installation at Bilbao and were afterwards tried under steam and found satisfactory; this vessel is therefore eligible in my opinion to have notation of + LMC 8,20 recorded in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC. 8,20.

Recd
9/10/20

APR 2

The amount of Entry Fee ... \$ 125. 00 :

When applied for,

Special

\$ 250. 00 :

2/9 1920

Donkey Boiler Fee

\$ 200. 00 :

When received,

Travelling Expenses (if any)

\$ 21. 00 :

3/9 1920

Committee's Minute

Assigned

FRI. OCT. 15 1920

+ LMC 8,20

W. G. McKinlay

Engineer Surveyor to Lloyd's Register of Shipping



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Foundation