

REPORT ON MACHINERY.

No. 1613

Received at London Office

Date of writing Report

April 12 1919

When handed in at Local Office

19

Port of

BARCELONA

No. in Survey held at

FERROL AND BILBAO

Date, First Survey

May 18 1919

Last Survey

22/4/1919

Reg. Book

1502 on the

Steel L. S. CONDE DE ZUBIRIA

(Number of Visits)

BCL 13

BCL 29

Gross

3278

Tons

Net 1940

Master E. Echevarria

Built at

Sestao

By whom built

Sociedad Española de Const. Naval

When built

1919

Engines made at

Ferrol

By whom made

Sociedad Española de Const. Naval

when made

1919

Boilers made at

Barcelona

By whom made

Maquinista Terrestre y Marítima

when made

1919

Registered Horse Power

261

Owners

Altos Hornos Naviera

Port belonging to

Bilbao

Shaft Horse Power at Full Power

1300

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

TURBINE ENGINES, &c.—Description of Engines

Impulse-Reaction Single Cased (Vertical)

No. of Turbines

Two

Diameter of Rotor Shaft Journals, H.P.

3 15/16

L.P.

5 1/8

Diameter of Pinion Shaft

3 3/4

Diameter of Journals

3 3/4

Distance between Centres of Bearings

36 7/8

Diameter of Pitch Circle

4.655

Diameter of Wheel Shaft

11 1/32

Distance between Centres of Bearings

44 3/4

Diameter of Pitch Circle of Wheel

138.926

Width of Face

31 13/16

Diameter of Thrust Shaft under Collars

10 7/8

Diameter of Tunnel Shaft

as per rule

10.44

No. of Screw Shafts

One

Diameter of same

as per rule

11.60

as fitted

11.75

Diameter of Propeller

14'-0"

Pitch of Propeller

15'-6"

No. of Blades

Four

State whether Moveable

No

Total Surface

Sixty Two sq. ft.

Diameter of Rotor Drum, H.P.

15

L.P.

29 1/2

Eastern

20 7/8

Thickness at Bottom of Groove, H.P.

Solid

L.P.

3 7/16

Astern

2 1/2

Revs. per Minute at Full Power, Turbine

2,100

Propeller

70 80

2400

See Ltr. Bil. Enclosures

PARTICULARS OF BLADING.

	H. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
ST EXPANSION	<u>IMPULSE.</u> 1 1/16	28 1/2"	1	<u>REACTION.</u> 1 1/4"	31 1/16"	2	<u>IMPULSE.</u> 1 1/16"	29 5/8"	1
1ST	do 1 3/16	28 3/4"	1	do 1 1/4"	31 5/8"	2	do 1 3/16"	29 7/8"	1
2ND	do 1 5/16	29"	1	do 1 3/8"	32 1/4"	2	do 1 5/16"	30 1/8"	1
3RD	<u>REACTION.</u> 1 5/16	16 13/16"	13	do 1 5/8"	32 15/16"	2	<u>REACTION.</u> 1 1/2"	21 7/8"	2
4TH	do 1 5/16"	17 5/8"	13	do 2 3/8"	33 1/16"	2	do 1 13/16"	22 1/4"	2
5TH	do 1 7/8"	18 11/16"	13	do 2 7/8"	34 7/8"	2	do 1"	22 7/8"	2
6TH	do 2 5/8"	20 1/4"	13	do 3 1/16"	35 5/16"	2	do 1 3/8"	23 1/16"	2
7TH				do 4 1/8 4.5"	37 3/4 39"	2 & 4	do 2 1/16"	24 15/16"	2

No. and size of Feed pumps 2 HEIRS-6 PUMP X 8" CYL. X 18" STROKE.

No. and size of Bilge pumps 1 LAMONT-8" X 8" X 8" IMPLEX

No. and size of Bilge suction in Engine Room One 3 1/2 and Two 2 1/2

In Holds, &c. 2-75% dia. N°1 Hold - 2-75% dia. N°2 Hold

2-75% dia. N°3 Hold & 2-104% dia. in Dry tanks under Boilers.

No. of Bilge Injections One sizes 8" Connected to circulating pump Yes

Is a separate Donkey Suction fitted in Engine Room & size 4 1/2 5"

Are all the bilge suction pipes fitted with roses Yes

Are the roses in Engine room 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

Is the Screw Shaft Tunnel watertight None

Is it fitted with a watertight door Yes

worked from Yes

OILERS, &c.—(Letter for record S)

Manufacturers of Steel

Altos Hornos de Vizcaya de Bilbao

Total Heating Surface of Boilers 4220 Is Forced Draft fitted No

No. and Description of Boilers 2 3 furnaces cylindrical-multiple

Working Pressure 200 LBS/sq. Tested by hydraulic pressure to 400 LBS/sq.

Date of test 18-5-18

No. of Certificate 4 and 5

Can each boiler be worked separately Yes

Area of fire grate in each boiler 60 sq. ft.

No. and Description of Safety Valves to 200 LBS

Each boiler 2-COCKBURN 3 1/2"

Area of each valve 7.06 sq. ft.

Pressure to which they are adjusted 200 LBS

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4'-0"

Mean dia. of boilers 14'-10 7/8"

Length 10'-10 7/8"

Material of shell plates Steel

Thickness 1 5/16"

Range of tensile strength 28-32

Are the shell plates welded or flanged FLANGED

Descrip. of riveting: cir. seams I+T. RIVETED LAP

Long. seams T.R. D. BUTT. 5/16"

Diameter of rivet holes in long. seams 1 3/8"

Pitch of rivets 9 1/16"

Lap of plates or width of butt straps 20"

Per centages of strength of longitudinal joint rivets 92.5

plates 84.8

Working pressure of shell by rules 208 LBS/sq.

Size of manhole in shell 20" x 16"

Size of compensating ring 38 1/2 x 34 1/2 x 1 1/2"

No. and Description of Furnaces in each Boiler 3 1/2"

Material Steel

Outside diameter 44"

Length of plain part top 2'-0"

Thickness of plates crown 11/16"

Description of longitudinal joint LAP-WELD

No. of strengthening rings 3

bottom 2'-0"

Thickness of plates bottom 11/16"

Description of longitudinal joint LAP-WELD

No. of strengthening rings 3

Working pressure of furnace by the rules 206

Combustion chamber plates: Material Steel Thickness: Sides 2 1/32"

Back 11/16"

Top 2 1/32"

Bottom 1 3/16"

Pitch of stays to ditto Sides 8 1/2"

Back 8 1/2 x 9 1/2"

Top 8 1/2"

If stays are fitted with nuts or riveted heads NUTS

Working pressure by rules 207

Material of stays Steel

Diameter at smallest part 1.61

Area supported by each stay 72.25

Working pressure by rules 207

End plates in steam space

Material Steel

Thickness 1 5/32"

Pitch of stays 17 x 17

How are stays secured I. NUTS

Working pressure by rules 206

Material of stays Steel

Diameter at smallest part 2.79

Area supported by each stay 289

Working pressure by rules 219

Material of Front plates at bottom Steel

Working pressure of plate by rules 213

Thickness 15/16"

Material of Lower back plate Steel

Thickness 15/16"

Greatest pitch of stays 14 9/16"

Working pressure of plate by rules 213

Mean pitch of stays 9"

Diameter of tubes 3 1/4"

Pitch of tubes 4 1/2 x 4 1/2"

Material of tube plates Steel

Thickness: Front 15/16"

Back 3/4"

Mean pitch of stays 9"

Pitch across wide water spaces 14 9/16"

Working pressures by rules 257

Girders to Chamber tops: Material Steel

Depth and

Number and pitch of stays in each 3 e 4 1/4" 8 1/2"

Pitch of rivets

Thickness of girder at centre 10" x 1 1/4"

Length as per rule 2'-6 9/16"

Distance apart 8 1/2"

No. of strength of joint

Diameter

Pitch of rivets

Working pressure by rules 200

Steam dome: description joint to shell

No

Diameter of rivet holes

Pitch of rivets

Pitch of rivets

Thickness of shell plates

Material

Description of longitudinal joint

Diameter of rivet holes

Pitch of rivets

Pitch of rivets

Working pressure of shell by rules

Crown plates: Thickness

How stayed

Diameter of rivet holes

Pitch of rivets

Pitch of rivets

Working pressure of shell by rules

Crown plates: Thickness

How stayed

Diameter of rivet holes

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Working pressure of shell by rules

Crown plates: Thickness

How stayed

Diameter of rivet holes

Pitch of rivets

Pitch of rivets

