

REPORT ON BOILERS.

No. 11808

Received at London Office

-8 SEP 1936

Date of writing Report

19

When handed in at Local Office

7th Sept 1936 Port of BelfastNo. in Survey held at
Reg. Book.

Belfast

Date, First Survey 12th Feb., 1936Last Survey 21st Aug 1936

(Number of Visits 21)

Gross 8334

Tons

Net 4973

on the

M.V. "BRITISH POWER"

Master

Built at Govan

By whom built Harland & Wolff Ltd.

Yard No. 968G When built 1936

Engines made at

Glasgow

By whom made Harland & Wolff Ltd.

Engine No. 9684. When made 1936

Boilers made at

Belfast

By whom made Harland & Wolff Ltd.

Boiler No. 9684 When made 1936

Nominal Horse Power

Owners British Tanker Co. Ltd.

Port belonging to London.

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

1495 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired Oil

No. and Description of Boilers

One S.E. cylindrical

Working Pressure 150 lbs.

Tested by hydraulic pressure to

275 lbs.

Date of test 31-7-36

No. of Certificate 1021

Can each boiler be worked separately Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

1-2 "double opening High lift (approved)

Area of each set of valves per boiler

{ per Rule 11.325
as fitted 6.28

Pressure to which they are adjusted 150 lbs.

Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork

1'-6"

Is oil fuel carried in the ~~double bottom~~ ^{Cross Bunkers} under boilers Yes

Smallest distance between shell of boiler and tank top plating

1'-6"

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers

11'-4³/₃₂"

Length 11'-7"

Shell plates: Material Steel

Tensile strength 29/33 tons

Thickness

5¹/₆₄"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end double

long. seams

treble

Diameter of rivet holes in { circ. seams 1"
long. seams 1⁵/₁₆"

Pitch of rivets

2.993

6³/₈"

Percentage of strength of circ. end seams

{ plate 66.7%
rivets 48.4%

Percentage of strength of circ. intermediate seam

{ plate
rivets

Percentage of strength of longitudinal joint

{ plate 85.2%
rivets 100.1
combined 90.6

Working pressure of shell by Rules 155 lbs.

Thickness of butt straps

{ outer 5¹/₈"
inner 3¹/₄"

No. and Description of Furnaces in each Boiler

Two Doughton

Material

Steel

Tensile strength

26/30

Smallest outside diameter

35⁷/₈"

Length of plain part

{ top
bottom

Thickness of plates

{ crown 7/16
bottom

Description of longitudinal joint

welded

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules 174 lbs.

End plates in steam space: Material

Steel

Tensile strength

24/30 tons

Thickness

3¹/₃₂"

Pitch of stays 16 x 16"

How are stays secured

Double nuts

Working pressure by Rules 168 lbs.

Tube plates: Material

{ front Steel
back

Tensile strength

24/30 tons

Thickness

{ 3¹/₃₂"
1¹/₁₆"

Mean pitch of stay tubes in nests

9.375"

Pitch across wide water spaces

13¹/₂"

Working pressure

{ front 167.5 lbs.
back 269 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28⁵/₃₂"

Depth and thickness of girder

at centre

8³/₄" x 13¹/₄"

Length as per Rule

34¹/₂"

Distance apart

11¹/₂"

No. and pitch of stays

in each

3 at 9"

Working pressure by Rules

157.3 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

1¹/₂"

Back

1¹/₁₆"

Top

1¹/₄"

Bottom

3¹/₄"

Pitch of stays to ditto: Sides

9 x 9"

Back

8³/₈ x 8³/₈"

Top

9 x 11¹/₂"

Are stays fitted with nuts or riveted over

C.C. centre stays riveted
over inside, all others
with nuts

Working pressure by Rules

155 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

3¹/₃₂"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

3¹/₃₂"

Pitch of stays at wide water space

13 x 8³/₈"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

208 lbs.

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

{ At body of stay, 2¹/₂"
or
Over threads

No. of threads per inch

6

Area supported by each stay

240"

Working pressure by Rules

184.6 lbs.

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

{ At turned off part, 1¹/₂"
or
Over threads 1⁵/₈" 1³/₄"

No. of threads per inch

9

Area supported by each stay

81" 70.4" 103.5"

Working pressure by Rules 154-66. Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, *1 1/8"*
 No. of threads per inch *9* Area supported by each stay *89.4"* Working pressure by Rules *170 lb*
 Tubes: Material *W.I.* External diameter { Plain *2 1/2"* Thickness { *10 L.S.G.*
 Pitch of tubes *3 3/4" x 3 3/4"* Working pressure by Rules *166.5 lb* No. of threads per inch *9*
 shell plate *12 x 16"* Section of compensating ring *2'-8" x 3/4" x 3'-0"* No. of rivets and diameter of rivet holes *28 - 1 3/16"*
 Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *✓* Steam Dome: Material *✓*
 Tensile strength Thickness of shell Description of longitudinal joint
 Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate
 Internal diameter Working pressure by Rules Thickness of crown Rivets
 stays *838* Inner radius of crown Working pressure by Rules No. and diameter of
 How connected to shell Size of doubling plate under dome Diameter of rivet holes and pitch
 of rivets in outer row in dome connection to shell
 Type of Superheater *✓* Manufacturers of { Tubes
 Number of elements Material of tubes Steel castings
 Material of headers Tensile strength Thickness Internal diameter and thickness of tubes
 the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off and
 Area of each safety valve Are the safety valves fitted with easing gear Can the superheater be shut off and
 Rules Pressure to which the safety valves are adjusted Working pressure as per
 tubes, castings and after assembly in place Hydraulic test pressure:
 to free the superheater from water where necessary Are drain cocks or valves fitted
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with

The foregoing is a correct description,
 For HARLAND AND WOLFE, LIMITED

1936
 Dates of Survey { During progress of work in shops - *Feb 12, Jan 26, May 4, 13, 18, 25, June 3, 18*
 while building { During erection on board vessel - *22, 20 July 6, 9, 17, 21, 23, 27, 29, 30, 31 Aug 19, 21*
 Are the approved plans of boiler and superheater forwarded herewith *Yes*
 (If not state date of approval.)
 Total No. of visits *21*

Is this Boiler a duplicate of a previous case If so, state Vessel's name and Report No.

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

This boiler has been constructed under special survey and to an approved design. The workmanship & materials are good. It has been subjected to a hydraulic test in accordance with the Rules and is eligible, in my opinion for use on a vessel classed with the Society. It is intended for a vessel building at Govan.

This boiler has been efficiently secured on board the M.V. "British Power". The safety valves have been adjusted under steam and tested for accumulation of pressure, and the boiler tried under working conditions and found satisfactory.

H.H. Campbell.
Glasgow.

Survey Fee ... £ *10 : 0 : 0* When applied for, *7th Sept 1936*
 Travelling Expenses (if any) £ : : When received, *26. 9. 1936*

Charles J. Hunter
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW** 22 DEC 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.