

REPORT ON BOILERS.

No. 51058

Date of writing Report

15-1-

1941

When handed in at Local Office

23 JAN 1941

Received at London Office

Port of

HULL

No. in Survey held at

Hull & Goole

Date, First Survey

7. 6. 40.

Last Survey

14. 1.

1941.

on the

H.M.T. MACBETH.

(Number of Visits

51.)

Gross 452

Tons Net 142.

Built at

Goole

By whom built

Goole S.B. & Repg Co. Ltd.

Yard No. 355

When built 1941-1.

Engines made at

Hull.

By whom made

Amos & Smith Ltd.

Engine No. 681

When made do

Boilers made at

do

By whom made

do

Boiler No. 681

When made do.

Nominal Horse Power

156

Owners

The Admiralty

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles, Ltd., Appleby, Frodingham Steel Co., Ltd.

(Letter for Record

S

Total Heating Surface of Boilers

2650 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One - S.B.

Working Pressure 200 lb/sq in

Tested by hydraulic pressure to

350 lb/sq in

Date of test

11. 10. 40

No. of Certificate

4038

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

63 sq ft

No. and Description of safety valves to each boiler

2. Spring-loaded

Area of each set of valves per boiler

per Rule 15.4 sq in

as fitted 16.6 sq in Pressure to which they are adjusted 200 lb/sq in

Are they fitted with easing gear

Yes

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

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

2' - 0"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

None

Is the bottom of the boiler insulated

No

Largest internal dia. of boilers

14' - 9 3/8"

Length

11' - 6"

Shell plates: Material

Steel

Tensile strength 29/30 tons/sq in

Thickness

15/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

D.C. Lap

Long. seams

T.R. - D.B. 2

Diameter of rivet holes in

circ. seams 1 3/8"

long. seams 1 3/8"

Pitch of rivets

4"

Percentage of strength of circ. end seams

plate

65.6%

rivets

44.7%

Percentage of strength of circ. intermediate seam

plate

85.5%

rivets

98.5%

Percentage of strength of longitudinal joint

plate

85.5%

rivets

98.5%

combined

98.8%

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 - Cf Deighton Section

Material

Steel

Tensile strength

26/30 tons/sq in

Smallest outside diameter

3' - 6 7/16"

Length of plain part

top 19 1/32"

bottom 19 1/32"

Thickness of plates

crown 19 1/32"

bottom 19 1/32"

Description of longitudinal joint

Weld.

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

Yes

End plates in steam space: Material

Steel

Tensile strength 26/30 tons/sq in

Thickness

1 1/32"

Pitch of stays 21" + 20" max

How are stays secured

Nuts inside & out

Tube plates: Material

front Steel

back Steel

Tensile strength

26/30 tons/sq in

do.

Thickness

7/8"

25/32"

Mean pitch of stay tubes in nests

9 1/16"

Pitch across wide water spaces

13 5/8"

Girders to combustion chamber tops: Material

Steel

Tensile strength

26/32 tons/sq in

Depth and thickness of girder

at centre 8 1/4" x 1 7/8"

Length as per Rule

2' - 7 1/32"

Distance apart

10 3/4"

No. and pitch of stays

in each

2 - 9 7/8"

Combustion chamber plates: Material

Steel

Tensile strength 26/30 tons/sq in

Thickness: Sides

25/32"

Back

3/4"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

10 3/4" x 9 7/8"

Back

9 1/4" x 9 7/8"

Top

10 3/4" x 9 7/8"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26/30 tons/sq in

Thickness

7/8"

Pitch of stays at wide water space

14 1/2" x 9 7/8"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

Steel

Tensile strength

28/32 tons/sq in

Diameter

At body of stay, 3 1/8"

Over threads

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/20 tons/sq in

Diameter

At turned off part, 1 7/8"

Over threads

No. of threads per inch

9.

Are the stays drilled at the outer ends No Margin stays: Diameter { 2" part, 2" Over threads

No. of threads per inch 9

Tubes: Material Steel External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 8 W.G. 1/4", 5/16", 3/8", 7/16" No. of threads per inch 9

Pitch of tubes 3 7/8" x 3 7/8" Manhole compensation: Size of opening in shell plate 16" (x 20") Section of compensating ring 1 5/16" x 20" No. of rivets and diameter of rivet holes 15 - 1 5/32"

Outer row rivet pitch at ends 10 1/8" Depth of flange if manhole flanged 3 1/4" Steam Dome: Material None

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint { Plate _____ Rivets _____

Internal diameter _____ Thickness of crown _____ No. and diameter of stays _____

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 None Manufacturers of { Tubes _____ Steel forgings _____ Steel castings _____

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____

Area of each safety valve _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____

Pressure to which the safety valves are adjusted _____ Are the safety valves fitted with easing gear _____

tubes _____ forgings and castings _____ and after assembly in place _____ Hydraulic test pressure: _____

valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,

A. E. Cusack Manufacturer.

1940 June 7, 15, July 18, 22, 24, Aug. 2, 5, 6, 9, 14, 30.

Dates of Survey { During progress of work in shops - Sept. 6, 7, 11, 12, 13, 15, 17, 20, 26, 30. Are the approved plans of boiler and superheater forwarded herewith 17.10.39. (If not state date of approval.)

while building { During erection on board vessel - Oct. 2, 5, 9, 10, 11, 13, 14, 15, 16, 22, 25, 30. Nov. 4, 11, 12, 13, 14, 27, Dec. 2, 3. Total No. of visits 51.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. H.M.T. BIRCH. Hul Rpt No 50672.

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

This boiler has been constructed under Special Survey in accordance with the approved Admiralty plans and the Rules. The workmanship & materials are good & when subjected to a hydraulic test of 350 lbs/sq in was found satisfactory in every respect.

Survey Fee ... £ : : When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

L. J. P. Palmer
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 28 JAN 1941

Assigned See Hul 78 51058