

# REPORT ON BOILERS.

Date of writing Report 10 JUN 1940 When handed in at Local Office 10 JUN 1940 Port of HULL

No. in Surrey held at Hull Date, First Survey 20.6.39 Last Survey 1.6.1940

Reg. Book. H.M.T. "BLACKTHORN" (Number of Visits 59) Gross 452 Tons Net 144

Built at Beverley By whom built Cook, Welton & Gemmell, Ltd. Yard No. 653 When built 1940-4

Engines made at Hull By whom made Charles D. Holmes & Co., Ltd. Engine No. 1555 When made 1940-4

Boilers made at - By whom made - Boiler No. - When made -

Nominal Horse Power 156 Owners The Admiralty Port belonging to -

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland, 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 lbs / sq

Tested by hydraulic pressure to 350 lbs / sq Date of test 8/1/40 No. of Certificate 4022 Can each boiler be worked separately ✓

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 boiler 15.4 sq ft Pressure to which they are adjusted 200 lbs / sq 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 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 177.375" Length 11' 6" Shell plates: Material Steel Tensile strength 29/32 tons / sq

Thickness 4 3/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. - lap.

long. seams T.R. - D.B.S. Diameter of rivet holes in circ. seams 1.375" Pitch of rivets 4"

Percentage of strength of circ. end seams plate 65.6% Percentage of strength of circ. intermediate seam plate ✓

Percentage of strength of longitudinal joint rivets 44.7% combined 88.8%

Thickness of butt straps outer 32/32" No. and Description of Furnaces in each Boiler 3 - Cf - "Deighton" section

Material Steel Tensile strength 26/30 tons / sq Smallest outside diameter 42.4375"

Length of plain part top ✓ Thickness of plates bottom 19/32" Description of longitudinal joint Weld.

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

End plates in steam space: Material Steel Tensile strength 26/30 tons / sq Thickness 4 3/32" Pitch of stays 21" x 20" max

How are stays secured Nuts inside & out

Tube plates: Material front Steel Tensile strength 26/30 tons / sq Thickness 28/32"

Mean pitch of stay tubes in nests 9.6875" Pitch across wide water spaces 13.625"

Girders to combustion chamber tops: Material Steel Tensile strength 29/32 tons / sq Depth and thickness of girder

at centre 8.25" x 60/32" Length as per Rule 31.46875" Distance apart 10.75" No. and pitch of stays

in each 2 - 9.875" Combustion chamber plates: Material Steel

Tensile strength 26/30 tons / sq Thickness: Sides 25/32" Back 24/32" Top 25/32" Bottom 25/32"

Pitch of stays to ditto: Sides 10.75 x 9.875 Back 9.25 x 9.875 Top 9.875 x 10.75 Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel Tensile strength 26/30 tons / sq

Thickness 28/32" Lower back plate: Material Steel Tensile strength 26/30 tons / sq Thickness 26/32"

Pitch of stays at wide water space 14.5" x 9.875" Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel Tensile strength 28/32 tons / sq

Diameter At body of stay, 3 1/8" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26/30 tons / sq

Diameter At turned off part, 1 7/8" No. of threads per inch 9

*This was 2606 # for the "Jupiter" & "Maugrave" built at Hull. S.B.*

Is a Report also sent on the Hull of the ship? (M. 4.33) - Copyable Ink. (MADE AND PRINTED IN ENGLAND)

Are the stays drilled at the outer ends No. Margin stays: Diameter 2" At turned off part, or Over threads

No. of threads per inch 9.

Tubes: Material Steel External diameter 2 3/4" Plain Thickness 8 w.g. Stay 2 3/4" No. of threads per inch 9.

Pitch of tubes 8.875 x 3.875. Manhole compensation: Size of opening in shell plate 16" (x 20") Section of compensating ring 1.3125" x 20" No. of rivets and diameter of rivet holes 15- 1.46875.

Outer row rivet pitch at ends 10.125 Depth of flange 3.125" 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  Inner radius of crown

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  Are drain cocks or

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

The foregoing is a correct description, TD,  
FOR CHARLES D. HOLMES & CO., LTD.,  
Manufacturer.

Dates of Survey while building 1939 June 20, Aug. 15, Sept. 5, 6, 8, 20, 24, Oct. 3, 11, 14, 16, 24, 26, NOV. 1, 14, 15, 17, 21, 22, 23, 24, 27, 28, DEC. 7, 8, 9, 18, 21, 29, 1940 Jan. 5, 8, 9, 12, 15, 18, Feb. 9, 15, Mar. 4, 5, 8, 11, 15, 15, 18, 19, 19, 30, 30, 28, 29, Apr. 18, May 10, 15, 24, 25, 28, 29, 31, June 1.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 59.

Total No. of visits 59.

Is this Boiler a duplicate of a previous case yes. If so, state Vessel's name and Report No. H.M.T "BIRCH" - 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, and when subjected to a hydraulic test of 350 lb/sq" it was found satisfactory in every respect.

Survey Fee ... £            When applied for, 19

Travelling Expenses (if any) £            When received, 19

Lyley & Co. Surveyors  
Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE, 18 JUN 1940

Assigned See Sub J.C. 50728