

B.S.

# REPORT ON BOILERS.

No. 51665.

Received at London Office 10 JUL 1942

Date of writing Report 23-4-1942 When handed in at Local Office 8 JUL 1942 Port of HULL.

No. in Survey held at HULL. Date, First Survey 5.12.41 Last Survey 2.6.1942

on the Steam Tug. [EMPIRE GOBLIN. (Number of Visits 40) Gross 244. Net Nil.

Built at SELBY. By whom built Cochrane & Co. Ltd. Yard No. 1244. When built 1942

Engines made at HULL. By whom made Amos Smith & Co. Ltd. Engine No. 706 When made 4

Boilers made at HULL. By whom made Amos Smith & Co. Ltd. Boiler No. 705. When made 4

Nominal Horse Power 132. Owners Ministry of War Transport. Port belonging to

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

Manufacturers of Steel Appley Frodingham Steel Co. Ltd + Colville. (Letter for Record S)

Total Heating Surface of Boilers 2390. Is forced draught fitted No. 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 23/3/42 No. of Certificate 4137. Can each boiler be worked separately

Area of Firegrate in each Boiler 63-2. No. and Description of safety valves to each boiler 2. Spring loaded

Area of each set of valves per boiler (per Rule 13-90 as fitted 14-1370. Pressure to which they are adjusted 200 lb./sq. in. Are they fitted with easing gear Ya.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler None

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6". 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 Yes

Largest internal dia. of boilers 15'-6 1/4". Length 11'-6". Shell plates: Material Steel Tensile strength 29-33 tons/sq. in.

Thickness 1 3/8". Are the shell plates welded or flanged No. Description of riveting: circ. seams (end D.R. Lap. inter. -)

Long. seams T.R., D.B.S. Diameter of rivet holes in (circ. seams 1 3/32" long. seams 1 3/32". Pitch of rivets 9 7/8".

Percentage of strength of circ. end seams (plate 66.4% rivets 42.7%. Percentage of strength of circ. intermediate seam (plate - rivets -)

Percentage of strength of longitudinal joint (plate 85.7% rivets 85.0% combined 90.15%.

Thickness of butt straps (outer 1 1/16" inner 1 3/16". 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'-11 3/8".

Length of plain part (top - bottom -). Thickness of plates (crown 3 1/16" bottom 3 1/16". Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel Tensile strength 26-30 tons/sq. in. Thickness 1 3/16". Pitch of stays 18 3/4" x 18 1/2".

How are stays secured Nuts. Inside & Out.

Tube plates: Material (front Steel back Steel. Tensile strength (26-30 tons/sq. in. Thickness 1 5/16" 7/8".

Mean pitch of stay tubes in nests 9 1/2" x 9 1/2". Pitch across wide water spaces 14 1/4" x 9 1/2".

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons/sq. in. Depth and thickness of girder

at centre 9 1/2". Length as per Rule 2'-11". Distance apart 9". No. and pitch of stays

in each 3 @ 8 3/4". Combustion chamber plates: Material Steel.

Tensile strength 26-30 tons/sq. in. Thickness: Sides 3/4". Back 2 3/32". Top 2 3/32". Bottom 3/4".

Pitch of stays to ditto: Sides 9 1/2" x 8 3/4". Back 9 1/2" x 8 1/2". Top 9" x 8 3/4". Are stays fitted with nuts or riveted over Nuts.

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

Thickness 1 5/16". Lower back plate: Material Steel Tensile strength 26-30 tons/sq. in. Thickness 7/8".

Pitch of stays at wide water space 14 1/4" x 8 1/2". 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, or Over threads 3 1/4". No. of threads per inch 6.

Crew stays: Material Steel Tensile strength 26-30 tons/sq. in.

Diameter (At turned off part, or Over threads 1 5/4". No. of threads per inch 9.



Are the stays drilled at the outer ends No. Margin stays: Diameter At turned off part, 1 7/8" and 2"  
 No. of threads per inch 9  
 Tubes: Material Iron External diameter 3 1/2" Thickness 8.W.G. No. of threads per inch 9  
 Pitch of tubes 4 3/4" Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 1 3/8" x 15" No. of rivets and diameter of rivet holes 28 @ 1 1/2"  
 Outer row rivet pitch at ends 9 7/8" Depth of flange 3 3/8" 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  
 Internal diameter \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of stays \_\_\_\_\_  
 How connected to shell \_\_\_\_\_ Inner radius of crown \_\_\_\_\_  
 of rivets in outer row in dome connection to shell \_\_\_\_\_ Size of doubling plate under dome \_\_\_\_\_ Diameter of rivet holes and pitch \_\_\_\_\_

**Type of Superheater**

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 \_\_\_\_\_  
 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler \_\_\_\_\_  
 Area of each safety valve \_\_\_\_\_ Are the safety valves fitted with easing gear \_\_\_\_\_  
 Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure \_\_\_\_\_  
 tubes \_\_\_\_\_ forgings and castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks of 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.

For AMOS & SMITH LTD.

The foregoing is a correct description,

*A. S. Newby* Manufacturer  
 DIRECTOR

Dates of Survey During progress of work in shops - - See machinery report. Are the approved plans of boiler and superheater forwarded herewith ✓  
while building During erection on board vessel - - - (If not state date of approval.)  
 Total No. of visits ✓

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 in accordance with the Rule and the approved plans  
 The Workmanship & Material are good 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

*J. Keenan*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 14 AUG 1942  
 Assigned See Hul. No. 51665

