

# REPORT ON BOILERS.

No 67629

Received at London Office 14 OCT 1943

Date of writing Report 19 When handed in at Local Office 11. 10. 1943 Port of Glasgow.

No. in Survey held at Glasgow. Date, First Survey 19th July 1943 Last Survey 5th Oct. 1943

Reg. Book. on the M.V. "Empire Mackay" (Number of Visits 24) Gross 8908 Tons Net 5658

Built at Glasgow. By whom built Harland & Wolff Ltd. Yard No. 11676 When built 1943.

Engines made at do By whom made do. Engine No. 1167 When made 1943.

Boilers made at Hyde. By whom made Joseph Adamson & Co. Ltd. Boiler No. 2588. PORT STARD. When made 1943.

Nominal Horse Power Owners Port belonging to

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

Manufacturers of Steel (Letter for Record S)

Total Heating Surface of Boilers 3836 sq. ft. Is forced draught fitted Yes Oil fired Yes

No. and Description of Boilers 2. S.B. Working Pressure 150 lb

Tested by hydraulic pressure to Date of test No. of Certificate Port 105 Star 107. Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 1/2" dia Double Spring Improved H.L.

Area of each set of valves per boiler {per Rule 3.63 sq. inches as fitted 3.98 " Pressure to which they are adjusted 150 lb. 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 will clear Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 36" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers Length Shell plates: Material Tensile strength

Thickness Are the shell plates welded or flanged Description of riveting: circ. seams {end inter. rivets

Long. seams Diameter of rivet holes in {circ. seams Pitch of rivets {long. seams rivets

Percentage of strength of circ. end seams {plate rivets Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate rivets combined

Thickness of butt straps {outer inner

No. and Description of Furnaces in each Boiler

Material Tensile strength Smallest outside diameter

Length of plain part {top bottom Thickness of plates {crown bottom Description of longitudinal joint

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

End plates in steam space: Material Tensile strength Thickness Pitch of stays

How are stays secured

Tube plates: Material {front back Tensile strength Thickness

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

Girders to combustion chamber tops: Material Tensile strength Depth and thickness of girder

at centre Length Rule Distance apart No. and pitch of stays

in each Combustion chamber plates: Material

Tensile strength Thickness: Sides Back Top Bottom

Pitch of stays to ditto Sides Back Top Are stays fitted with nuts or riveted over

Front plate at bottom: Material Tensile strength

Thickness Lower back plate: Material Tensile strength Thickness

Pitch of stays at wide water space Are stays fitted with nuts or riveted over

Main stays: Material Tensile strength

Diameter {At body of stay, or Over threads No. of threads per inch

crew stays: Material Tensile strength

Diameter {At turned off part, or Over threads No. of threads per inch

*See manches for repairs Nos 11317 and 11406*

Are the stays drilled at the outer ends  Margin stays: Diameter  (At turned off part, or Over threads)

No. of threads per inch \_\_\_\_\_

**Tubes:** Material \_\_\_\_\_ External diameter  Plain  Stay  Thickness  No. of threads per inch \_\_\_\_\_

Pitch of tubes \_\_\_\_\_ **Manhole compensation:** Size of opening \_\_\_\_\_

shell plate \_\_\_\_\_ Section of compensating ring \_\_\_\_\_ No. of rivets and diameter of rivet holes \_\_\_\_\_

Outer row rivet pitch at ends \_\_\_\_\_ 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  Rivets

Internal diameter \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter \_\_\_\_\_

stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_

How connected to shell \_\_\_\_\_ Size of double 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  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 \_\_\_\_\_

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,

Manufacturer \_\_\_\_\_

Dates of Survey  During progress of work in shops - - -  Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building  During erection on board vessel - - -  Total No. of visits 24

1943 Jul 19 21 22 23 26 28 29 Aug 4 6 12 13 16 18  
24 25 27 30 Sep 2 6 8 16 23 28 Oct 5

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.) *These boilers have been satisfactorily fitted on board, examined under full working conditions and found satisfactory. Safety valves adjusted under steam to 150 lbs per sq inch and found satisfactory. Safety valve compression washer.*

*Port Boiler      Stabb boiler*

*P.      S.      P.      S.*

*7/16"   7/16"      13/32"   15/32"*

*Handwritten note: 9-10-243*

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

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

*G. E. Murdoch*  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 12 OCT 1943**

Assigned \_\_\_\_\_

