

## REPORT ON BOILERS.

No. 21915.

Received at London Office

6 - AUG 1942

Date of writing Report 22<sup>ND</sup> JULY 1942 When handed in at Local Office 24<sup>TH</sup> JULY 1942 Port of GREENOCK

No. in Survey held at Reg. Book.

GREENOCK

Date, First Survey 1<sup>ST</sup> JULY 1941 Last Survey 14<sup>TH</sup> JULY 1942.

on the

S/S "EMPIRE GALAHAD"

(Number of Visits ✓)

Gross 7046.40.

Tons Net 4906.24.

Built at PORT GLASGOW By whom built LITHGOWS LTD Yard No. 970 When built 1942

Engines made at GREENOCK By whom made JOHN G. KINCAID &amp; CO LTD Engine No. 733 When made 1942

Boilers made at GREENOCK By whom made JOHN G. KINCAID &amp; CO LTD Boiler No. 733 When made 1942

Nominal Horse Power 547 Owners MINISTRY OF WAR TRANSPORT. Port belonging to

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

Manufacturers of Steel Colvilles Ltd. (Letter for Record S)

Total Heating Surface of Boilers 5932<sup>4</sup> Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers 2 Nos. S.E. multitubular 18-4-42 2281 Working Pressure 220 lb

Tested by hydraulic pressure to 380 lb Date of test 28-4-42 No. of Certificate 2285 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 67<sup>4</sup> No. and Description of safety valves to each boiler 2 Nos. C1 double opening 14 lb.Area of each set of valves per boiler {per Rule 7.88<sup>0</sup> as fitted 7.96<sup>0</sup> Pressure to which they are adjusted 220 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 3'-0" Is oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating 1'-10 1/2" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'-3" Length 12'-1 3/32" Shell plates: Material S Tensile strength 29/33 tons

Thickness 1 1/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {end DR inter. ✓

long. seams TR DBS. Diameter of rivet holes in {circ. seams 1 1/16" long. seams 1 1/16" Pitch of rivets {4'-4 1/2" 10'-5"

Percentage of strength of circ. end seams {plate 64.5 rivets 44.14 Percentage of strength of circ. intermediate seam {plate 85.0 rivets 87.0

Percentage of strength of longitudinal joint {plate 85.0 rivets 87.0 combined 88.0

Thickness of butt straps {outer 1 1/16" inner 1 5/16" No. and Description of Furnaces in each Boiler Four Dighton

Material S Tensile strength 26/30 tons Smallest outside diameter 3'-5 1/2"

Length of plain part {top ✓ bottom Thickness of plates {crown 5/8" bottom 1/8" Description of longitudinal joint Weld

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

End plates in steam space: Material S Tensile strength 26/30 tons Thickness 1 13/32" Pitch of stays 19 x 21 1/2"

How are stays secured Double nuts

Tube plates: Material {front S back Tensile strength {26/30 tons Thickness {15/16" 27/32"

Mean pitch of stay tubes in nests 10-43/5" Pitch across wide water spaces 1'-2"

Girders to combustion chamber tops: Material S Tensile strength 29/33 tons Depth and thickness of girder

at centre 9 3/4" x 1 1/2" Length as per Rule 2'-11 15/32" Distance apart 8 1/4" No. and pitch of stays

in each 3 @ 15/8" Combustion chamber plates: Material S

Tensile strength 26/30 tons Thickness: Sides 21/32" Back 11/16" Top 21/32" Bottom 25/32"

Pitch of stays to ditto: Sides 8 1/4 x 8 1/4" Back 8 5/8 x 8 5/8" Top 8 1/4 x 8 1/4" Are stays fitted with nuts or riveted over CAULKED SIDES &amp; BACKS

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

Thickness 15/16" Lower back plate: Material S Tensile strength 26/30 Thickness 27/32"

Pitch of stays at wide water space 1'-1 1/16" Are stays fitted with nuts or riveted over NUTS

Main stays: Material S Tensile strength 25/32 tons

Diameter {At body of stay, or Over threads 3 1/4" No. of threads per inch 6

Screw stays: Material S Tensile strength 26/30 tons

Diameter {At turned off part, or Over threads 1 3/4 x 1 5/8" 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 or Over threads

No. of threads per inch 9

Tubes: Material S External diameter { Plain 3" Stay 3" Thickness { 5/16" 3/8" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in shell plate 16 1/2" x 20 1/2" Section of compensating ring 3 1/2" x 33 1/2" x 1 1/4" No. of rivets and diameter of rivet holes 36 - 1 1/4"

Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged Mr. Rule type 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 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 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 or 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

The foregoing is a correct description,  
For JOHN G. KINCAID & CO. LIMITED.  
W. C. Cairns Director. Manufacturer.

Dates of Survey { During progress of work in shops - - Are the approved plans of boiler and superheater forwarded herewith Yes 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 Yes If so, state Vessel's name and Report No. EMPIRE AUSTEN GRK 21837

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

These boilers have been built under special survey in accordance with the Rules and approved plans. The materials & workmanship are sound & good. Plans are machinery report for recommendations.

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

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

See machinery report

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

Committee's Minute GLASGOW 4 AUG 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT