

## REPORT ON BOILERS.

No. 16315.

Received at London Office

4 JUL 1925

Date of writing Report 30<sup>th</sup> June 1925 When handed in at Local Office 2 July 1925 Port of

Survey held at West Hartlepool Date, First Survey 13 June Last Survey 29 June 1925

526 on the S.S. "CAIRNHILL" ex "NITEDAL" (Number of Visits 7) Tons { Gross 3901 Net 2363

Built at West Hartlepool By whom built Wm Gray &amp; Co Ltd Yard No. 961 When built 1924

Engines made at West Hartlepool By whom made Central Marine Eng. Works Engine No. 961 When made 1924

Boilers made at ditto By whom made ditto Boiler No. 961 When made 1924

Nominal Horse Power Owners Macbeth Blackwood &amp; Laurich Port belonging to Glasgow

ULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR DONKEY.

Manufacturers of Steel J Spencer &amp; Sons Ltd (Letter for Record S)

Total Heating Surface of Boilers 4854 sq ft Is forced draught fitted yes Coal or Oil fired coal

and Description of Boilers 2 single ended 2SB Working Pressure 180 lbs

Tested by hydraulic pressure to 360 lbs Date of test 15.4.24 No. of Certificate Can each boiler be worked separately yes

Area of Firegrate in each Boiler 524 sq ft No. and Description of safety valves to each boiler 2 high lift (Cockburns)

Area of each set of valves per boiler { per Rule 10.39 as fitted 11.88 Pressure to which they are adjusted 185 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 18" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 14'-6" Length 12'-0" Shell plates: Material Steel Tensile strength 26/30

Thickness 1 1/2" Are the shell plates welded or flanged yes Description of riveting: circ. seams { end D.R. lap inter J.R. lap

g. seams J.R. D.B.S. Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 5/16" Pitch of rivets { 5" 9 1/4"

Percentage of strength of circ. end seams { plate shell flanged rivets 85.6 Percentage of strength of circ. intermediate seam { plate 72.6 rivets 62.8

Percentage of strength of longitudinal joint { plate 85.6 rivets 97.4 combined 91.0 Working pressure of shell by Rules 177

Thickness of butt straps { outer 3/32" inner 1/32" No. and Description of Furnaces in each Boiler 3 Deightons

Material Steel Tensile strength 26/30 Smallest outside diameter 41 7/16

Length of plain part { top bottom Thickness of plates { crown 1 1/2" bottom 3/32" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 186

Stays in steam space: Material Steel Tensile strength 26/30 Thickness 1 3/32" Pitch of stays 19 1/2" x 19 1/2"

How are stays secured D nuts &amp; washers Working pressure by Rules 182

Stays in steam space: Material { front steel back steel Tensile strength { 26/30 Thickness { 1 5/16" 4"

Pitch of stay tubes in nests 11 1/4" x 7 1/2" Pitch across wide water spaces 13 1/2" x 7 1/2" Working pressure { front 254 back 191

Stays to combustion chamber tops: Material Steel Tensile strength 28/32 Depth and thickness of girder

centre 9" x 1 1/2" Length as per Rule 2'-8 5/8" Distance apart 9" No. and pitch of stays

each 3 8 1/2" Working pressure by Rules 197 Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 3/32"

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

Working pressure by Rules 195 Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 1 5/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 3/8"

Pitch of stays at wide water space 14" x 9" Are stays fitted with nuts or riveted over nuts

Working Pressure 226 Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, or Over threads 3 1/8" No. of threads per inch 6 Area supported by each stay 19 1/2" x 19 1/2"

Working pressure by Rules 193 Screw stays: Material Steel Tensile strength 26/30

Diameter { At turned off part, or Over threads 1 5/8" No. of threads per inch 9 Area supported by each stay 8 1/2" x 9"



Working pressure by Rules 198 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 1/8"  
No. of threads per inch 9 Area supported by each stay 11 1/4 x 9 Working pressure by Rules 210  
Tubes: Material Iron External diameter { Plain 2 1/2 Thickness { 9/16, 1/4, 3/8 No. of threads per inch 9  
Pitch of tubes 3 3/4 x 3 3/4 Working pressure by Rules 185 Manhole compensation: Size of opening 2 1/2  
end shell plate 12 x 16 Section of compensating ring 1 1/4 x 3 No. of rivets and diameter of rivet holes 2 1/2  
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 3 3/4 Steam Dome: Material none  
Tensile strength 100 Thickness of shell 1/4 Description of longitudinal joint none  
Diameter of rivet holes 1/4 Pitch of rivets 1 1/2 Percentage of strength of joint { Plate 100  
Internal diameter 10 Working pressure by Rules 185 Thickness of crown 1/4 No. and diameter of rivets 2 1/2  
stays 10 Inner radius of crown 10 Working pressure by Rules 185  
How connected to shell 10 Size of doubling plate under dome 10 Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 10

Type of Superheater None Manufacturers of { Tubes none  
Number of elements 10 Material of tubes 10 Internal diameter and thickness of tubes 10  
Material of headers 10 Tensile strength 10 Thickness 10 Can the superheater be shut off from the boiler 10  
the boiler be worked separately 10 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler 10  
Area of each safety valve 10 Are the safety valves fitted with easing gear 10 Working pressure at safety valves 10  
Rules 10 Pressure to which the safety valves are adjusted 10 Hydraulic test pressure 10  
tubes 10 castings 10 and after assembly in place 10 Are drain cocks or valves fitted to free the superheater from water where necessary 10

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes FOR THE CENTRAL MARINE ENGINE WORKS,  
The foregoing is a correct description, (M. Gump & Co. Ltd.)  
MANAGING DIRECTOR, C.M.E.W.

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 1

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

Survey Fee ... £ : : When applied for, 192  
Travelling Expenses (if any) £ : : When received, 192

R.D. Shilston.  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 14 III 1906  
Assigned 1906