

REPORT ON BOILERS.

No. 18346

Received at London Office

30 OCT 1942

Date of writing Report 27/10/42 When handed in at Local Office 27/10/42 Port of W. Hartlepool

No. in Survey held at Hartlepool Date, First Survey 23rd April, Last Survey 24th October, 1942
Reg. Book. on the S.S. "EMPIRE NUGGET" (Number of Visits 81) Tons {Gross Net

Built at Haverston Hill By whom built Furness Shipbuilding Co. Ltd. Yard No. 349 When built 1942
Engines made at Hartlepool By whom made Richardsons Westgarth Co. Engine No. 2729 Then made "
Boilers made at " By whom made " " " Boiler No. " When made "
Nominal Horse Power 674 Owners MINISTRY OF WAR TRANSPORT Port belonging to LONDON.
MGRS ANGLO SAXON PETROLEUM CO. LD

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co. of Scotland (Letter for Record S
Total Heating Surface of Boilers 10020 Sq. Ft. Is forced draught fitted Yes Coal or Oil fired oil
No. and Description of Boilers 3 S.E. Multitubular Working Pressure 220 LBS/SQ IN
Tested by hydraulic pressure to 380 LBS/SQ IN Date of test 12/9 No. of Certificate 3979 Can each boiler be worked separately Yes
Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2-2 1/2" Spring loaded high lift
Area of each set of valves per boiler {per Rule 8.65 0" 8.88 as fitted 9.8 0" Pressure to which they are adjusted 220 LBS/SQ IN 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'-9" Is oil fuel carried in the double bottom under boilers Yes
Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated
Largest internal dia. of boilers 16'-2 31/32" Length 12'-6" Shell plates: Material Steel Tensile strength 30/34
Thickness 1 33/64" Are the shell plates welded or flanged NO Description of riveting: circ. seams {end DRL inter. none
long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" Pitch of rivets {4" plate
Percentage of strength of circ. end seams {plate 62.5 rivets 44.4 Percentage of strength of circ. intermediate seam {plate rivets
Percentage of strength of longitudinal joint {plate 85.1 rivets 86.7 combined 87.5
Thickness of butt straps {outer 15/32" inner 1 1/32" No. and Description of Furnaces in each Boiler 3 Dighton (gravel necks)
Material Steel Tensile strength 26/30 Smallest outside diameter 3'-11 23/32"
Length of plain part {top bottom Thickness of plates {crown 47/64" bottom 64" Description of longitudinal joint welded
Dimensions of stiffening rings on furnace or c.c. bottom
End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 13/32" Pitch of stays 22 1/2" x 18 1/2"
How are stays secured double nuts
Tube plates: Material {front back Steel Tensile strength 26/30 Thickness {15/16" 1/8"
Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14 1/2" x 7 1/4"
Girders to combustion chamber tops: Material Steel Tensile strength 29/33 Depth and thickness of girder
at centre 2-11 3/4" x 1" Length as per Rule 3'-10 1/2" Distance apart 9" No. and pitch of stays
in each 3 @ 11 1/8" Combustion chamber plates: Material Steel
Tensile strength 26/30 Thickness: Sides 13/16" Back 23/32" Top 13/16" Bottom 29/32"
Pitch of stays to ditto: Sides 9" x 11 1/8" Back 9" x 8" Top 9" x 11 1/8" Are stays fitted with nuts or riveted over nuts
Front plate at bottom: Material Steel Tensile strength 26/30
Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 Thickness 15/16"
Pitch of stays at wide water space 15 3/8" x 18" Are stays fitted with nuts or riveted over nuts
Main stays: Material Steel Tensile strength 28/32
Diameter {At body of stay, 3 1/2" No. of threads per inch 6
Screw stays: Material Steel Tensile strength 26/30
Diameter {At turned off part, 2 1/4" 13/4" No. of threads per inch 9

Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, 2 1/4" Over threads 2 1/4"

No. of threads per inch 9 ✓

Tubes: Material Steel ✓ External diameter { Plain } 2 1/2" ✓ Thickness { 8/16" } No. of threads per inch 9 ✓

Pitch of tubes 4" + 3 5/8" ✓ Manhole compensation: Size of opening in shell plate 16 1/2" + 20 1/2" Section of compensating ring 18 3/8" x 1 3/8" No. of rivets and diameter of rivet holes 34 - 1 1/8" ✓

Outer row rivet pitch at ends 10 1/2" ✓ Depth of flange if manhole flanged 3 1/4" ✓ 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 ✓

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 C.C. Type Supplied by N.E. Harmer Ltd ✓ Manufacturers of { Tubes } Stewart & Lloyd ✓ { Steel forgings } " ✓ { Steel castings } " ✓

Number of elements 36 ✓ Material of tubes S.P. Steel ✓ Internal diameter and thickness of tubes 1.243" x 1/4" ✓

Material of headers S.P. Steel ✓ Tensile strength 26/28 ✓ Thickness 1" ✓ Can the superheater be shut off and the boiler be worked separately Yes ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes ✓

Area of each safety valve 3.1416 sq" ✓ Are the safety valves fitted with easing gear Yes ✓

Pressure to which the safety valves are adjusted 220 lb. sq" ✓ Hydraulic test pressure: tubes 1500 lb/sq" ✓ Headers 660 lb/sq" ✓ forgings and castings 660 lb/sq" ✓ and after assembly in place 660 lb/sq" ✓ Are drain cocks or valves fitted to free the superheater from water where necessary Yes ✓

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

The foregoing is a correct description,
For RICHARDSON, WESTGARTH & Co. LIMITED.
W.E. Mearns DIRECTOR 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 ✓

Is this Boiler a duplicate of a previous case Yes ✓ If so, state Vessel's name and Report No. 27/6 Report No. 18314

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

The boilers have been constructed under Special Survey & in accordance with the Specification & approved plan for a working pressure of 220 lb/sq".

The materials & workmanship have been found good. Upon completion the boilers were tested with a hydraulic pressure of 380 lb/sq" & found sound & tight.

These boilers have been forwarded to Haverford Hill.

The Boilers securely fitted on board, examined under working condition & found satisfactory. Safety valves adjusted under steam to 220 lb sq" on completion.

Survey Fee £ See Rpt 4 } When applied for, 19

Travelling Expenses (if any) £ See Rpt 4 } When received, 19

Clive Bell & S.W. Boyd
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 27 NOV 1942

Assigned See Mdb. 76 1737

