

Rpt. 5c.
JAN 1944

REPORT ON WATER TUBE BOILERS.

Received at London Office

MOB. 17674
No. 18511

25 JAN 1944

Date of writing Report 22/1/1944 When handed in at Local Office 24/1/1944 Port of West Hartlepool
No. in Survey held at Hartlepool Date, First Survey 20th August 1943 Last Survey 20th January 1944
Reg. Bk. on the 1/2 "EMPIRE MILNER" (Number of Visits 34) Gross 8135 Tons Net 4604
Built at Hawerton Hill By whom built Furness S.B. Co (358) When built 1944
Engines made at Hartlepool By whom made Richardson Westgarth & Co (2742) When made 1944
Boilers made at " By whom made " When made 1944
Nominal Horse Power (1215) 1210 for Ministry of War Transport Port belonging to Middlesbrough

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel

Date of Approval of plan 18/6/42 Number and Description or Type
of Boilers 2 Foster Wheeler "D" Type Working Pressure 480 lb Tested by Hydraulic Pressure to 740 lb Date of Test 17.12.43
No. of Certificate 4017 Can each boiler be worked separately Yes Total Heating Surface of Boilers 6840
Is forced draught fitted Yes Area of fire grate (coal) in each Boiler
No. and type of burners (oil) in each boiler 3 Wallsend Howden No. and description of safety valves on
each boiler 1-2" Single Spring S.H.L. Area of each set of valve 11.7 sq in Pressure to which they are adjusted 490 lb
Are they fitted with easing gear Yes In case of donkey boilers state whether steam from main boilers can enter the donkey boiler No
Smallest distance between boilers or uptakes and bunkers or woodwork 3'-6" Height of boiler 15'-4" Width and Length 14'-5 3/8" x 11'-7 1/8"
Steam Drums:—Number in each boiler one Inside diameter 3'-6" Thickness of plates 1 5/8"
Range of Tensile Strength 28/32 Are drum shell plates welded or flanged welded Description of riveting:—
Cir. seams ✓ long. seams ✓ Diameter of rivet holes in long. seams ✓ Pitch of rivets ✓
Lap of plate or width of butt straps ✓ Thickness of straps 4 1/2" x 3 1/2" Percentage strength of long. joint:—Plate ✓ Rivet ✓
Diameter of tube holes in drum 2" x 1 1/4" Pitch of tube holes 2 1/4" x 2 3/4" x 1 5/8" Percentage strength of shell in way of tubes 2" = 55.5
Working pressure by rules as app. Steam Drum Heads or Ends:—Range of tensile strength 26/30 Thickness of plates 1 3/4" x 1 3/4"
Radius or how stayed 3'-6" Size of manhole or handhole 16" x 12" Working pressure by rules as app. Water Drums:—Number
in each boiler one Inside Diameter 2'-9" Thickness of plates 1 9/32" Range of tensile strength 28/32 Are drum shell plates
welded or flanged welded Description of riveting:—Cir. seams ✓ long. seams ✓ Diameter of rivet holes in
long. seams ✓ Pitch of rivets ✓ Lap of plates or width of butt straps ✓ Thickness of straps 4 1/2" x 3 1/2"
Percentage strength of long. joint:—Plate ✓ Rivet ✓ Diameter of tube holes in drum 2" x 1 1/4" Pitch of tube holes 2 1/4" x 2 3/4" x 1 5/8"
Percentage strength of drum shell in way of tubes 1 1/4" = 44.4 Working pressure by rules as app. Water Drum Heads or Ends:—Range of
Tensile strength 26/30 Thickness of plates 1 9/16" Radius or how stayed 2'-9"
Size of manhole or handhole 16" x 12" Working pressure by rules as app. Headers or Sections:—Number 3
Material steel Thickness 7/8" Tested by Hydraulic Pressure to 740 lb Tubes:—Diameter 2" 1 1/2"
Thickness 11/16" Number 384 1040 Steam Dome or Collector:—Description of Joint to Shell ✓
Inside diameter ✓ Thickness of shell plates ✓ Range of tensile strength ✓
Description of longitudinal joint ✓ Diameter of rivet holes ✓ Pitch of rivets ✓ Lap of plate or width of
butt straps ✓ Thickness of straps ✓ Percentage strength of long. joint ✓ Plate ✓ Rivet ✓
Working Pressure of shell by rules ✓ Crown or End Plates:—Range of tensile strength ✓
Thickness ✓ Radius or how stayed ✓ Working pressure by rules ✓
SUPERHEATER. Drums or Headers:—Number in each boiler 2 Inside Diameter 6 1/4" x 6 1/4"
Thickness 1 1/8" Material steel Range of tensile strength 28/32 Are drum shell plates welded
or flanged weldless Description of riveting:—Cir. seams ✓ long. seams ✓ Diameter of rivet holes in
long. seams ✓ Pitch of rivets ✓ Lap of plates or width of butt straps ✓ Thickness of straps 2 1/2" x 1 1/8"
Percentage strength of long. joint:—Plate ✓ Rivet ✓ Diameter of tube holes in drum 1 1/4" Pitch of tube holes 2 1/2" x 1 1/8"
Percentage strength of drum shell in way of tubes ✓ Working pressure by rules as app. Drum Heads or Ends:—flat
Thickness 1 1/8" Range of tensile strength 28/32 Radius or how stayed ✓ Size of manhole or handhole 2"
Working pressure by rules as app. Number, diameter, and thickness of tubes 292-1 1/2" x 11/16" Tested by Hydraulic Pressure to 740 lb
Date of Test 17/1/44 Is a safety valve fitted to each section of the superheater which can be shut off from the boiler ✓
No. and description of Safety Valves 2-2 1/2" double Spring S.H.L. Area of each set of valves 7.96 sq in
Pressure to which they are adjusted 475 lb Is easing gear fitted Yes

Spare Gear. Has the spare gear required by the rules been supplied

For RICHARDSONS, WESTGARTH & Co. LIMITED.

The foregoing is a correct description,

DIRECTOR

Manufacturer.

Dates of Survey } During progress of } 1943. Aug 20-24. 25. Sept 2-3-15-20-24. Oct 4-15-27. Nov 22-23-24-30. Dec 2-8-10-11-16-17-20-23-28-29. 1944 } Is the approved plan of boiler forwarded herewith
while building } During erection on } Jan 6-7-8-10-17-18-20 } Total No. of visits 34

Is this boiler a duplicate of a previous case Yes If so, state vessel's name and report No. RN 2741

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers with their superheaters & economisers have been constructed under Special Survey & in accordance with the approved plans & Specification for a working pressure of 480 lb/sq in. The workmanship & materials have been found good.

Survey Fee ... £ see Rpt 41a When applied for, 19
Travelling Expenses (if any) £ ✓ When received, 19

Committee's Minute TUES. 25 JUL 1944

Assigned see minute on J.E. Rpt

Clive Bell & H. Stuart
Engineer Surveyor to Lloyd's Register of Shipping.

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004145-004152-0158

Upon completion the boilers, Superheaters & economisers were hydraulically tested to 740 L.B./sq. in. & found sound & tight.

The boilers have been despatched to Haverton Hill for fitting on board Furness S.B. Co's vessel No 358.

Rept. & a will be forwarded when the engines are completed.

These boilers have now been securely fitted on board & examined under working conditions & found satisfactory.

On completion the Safety Valves of both boilers were adjusted under steam, the Safety Valves of the drums to 490 lbs/sq. in. & those of the Superheaters to 475 lbs/sq. in.

G. Norman Stuart

Drums fitted in these boilers

One steam drum marked EW 1051 See Bm. C. 2676 (copy attached)
" " " " FW 80 " Mch. C. 1936 (retained for reference)
Two water drums " FW 95496 " Gls. C. 49751 (copy attached)



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