

REPORT ON WATER TUBE BOILERS.

No. 100885

Received at London Office

Date of writing Report 19 28/11/1942 When handed in at Local Office 28/11/1942 Port of Newcastle-upon-Tyne 1- DEC 1942

No. in Survey held at Newcastle-upon-Tyne Date, First Survey 19 Feb/1942 Last Survey 19 Nov 1942

Reg. Bk. on the M.V. "EMPIRE CAVALIER" (Number of Visits 20) Tons Gross
Net

Built at Sunderland By whom built R. & W. Hawthorn Leslie & Co. Ltd. When built 1942

Engines made at Newcastle By whom made R. & W. Hawthorn Leslie & Co. Ltd. When made 1942

Boilers made at Newcastle By whom made R. & W. Hawthorn Leslie & Co. Ltd. When made 1942

Nominal Horse Power _____ Owners Ministry of War Transport Port belonging to Sunderland

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

Date of Approval of plan 9/10/41 Number and Description or Type of Boilers One - Three Drum Type Working Pressure 180 lb/sq in Tested by Hydraulic Pressure to 320 lb/sq in Date of Test 5/6/42

No. of Certificate 978 Can each boiler be worked separately Total Heating Surface of Boilers 3,300 sq ft

Is forced draught fitted yes Area of fire grate (coal) in each Boiler _____

No. and type of burners (oil) in each boiler Three Blyde Type No. and description of safety valves on each boiler Two 3/4" Spring loaded H.L. Type Area of each set of valve 22.08 sq in Pressure to which they are adjusted 185 lbs

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 _____ Height of boiler 11'-1" Width and Length 14'-0" x 11'-8"

Steam Drums:—Number in each boiler One Inside diameter 44" Thickness of plates Tube plates 1/2", Wrapper 5/8"

Range of Tensile Strength 28/32 tons/sq in Are drum shell plates welded or flanged no Description of riveting:—

Cir. seams D.R. long. seams D.R. D.B.S. Diameter of rivet holes in long. seams 29/32 Pitch of rivets 3-55"

Lap of plate or width of butt straps 9 5/8", 9 1/2" Thickness of straps 1/2" Percentage strength of long. joint:—Plate 74.5 Rivet 88.8

Diameter of tube holes in drum 1 1/2", 1 1/8" (+ 10/1000") Pitch of tube holes 2 1/4", 1 1/16" Percentage strength of shell in way of tubes 33.3

Working pressure by rules 310 lb/sq in Steam Drum Heads or Ends:—Range of tensile strength 26/30 tons Thickness of plates 1"

Radius or how stayed 44" Size of manhole or handhole 16" x 12" Working pressure by rules 239 lb/sq in Water Drums:—Number in each boiler Two Inside Diameter 27" Thickness of plates 1 1/2", 9/16" Range of tensile strength 28/32 tons/sq in Are drum shell plates welded or flanged no Description of riveting:—Cir. seams S.R. lap long. seam D.R. D.B.S. Diameter of rivet holes in long. seams 27/32 Pitch of rivets 3 5/16" Lap of plates or width of butt straps 9 1/4" 8 5/8" Thickness of straps 1/2"

Percentage strength of long. joint:—Plate 74.5 Rivet 92.6 Diameter of tube holes in drum 1 1/2", 1 1/8" (+ 10/1000") Pitch of tube holes 2 1/4", 1 1/16"

Percentage strength of drum shell in way of tubes 33.3 Working pressure by rules 450 lb/sq in Water Drum Heads or Ends:—Range of Tensile strength 26/30 tons/sq in Thickness of plates 7/8", 13/16" Radius or how stayed 27"

Size of manhole or handhole 16" x 12" Working pressure by rules 332 Headers or Sections:—Number _____

Material ✓ Thickness _____ Tested by Hydraulic Pressure to _____ Tubes:—Diameter 1 1/2", 1 1/8"

Thickness .128", .116" Number 178, 1498 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 _____ Inside Diameter _____

Thickness _____ Material _____ Range of tensile strength _____ Are drum shell plates welded or flanged _____ 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 _____

Percentage strength of long. joint:—Plate _____ Rivet _____ Diameter of tube holes in drum _____ Pitch of tube holes _____

Percentage strength of drum shell in way of tubes _____ Working pressure by rules _____ Drum Heads or Ends:—

Thickness _____ Range of tensile strength _____ Radius or how stayed _____ Size of manhole or handhole _____

Working pressure by rules _____ Number, diameter, and thickness of tubes _____ Tested by Hydraulic Pressure to _____

Date of Test _____ 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 _____ Area of each set of valves _____

Pressure to which they are adjusted _____ Is easing gear fitted _____

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

For
R. & W. HAWTHORN LESLIE & CO. LIMITED
R. W. Deane Director
The foregoing is a correct description,
Manufacturer.

Dates of Survey Is the approved plan of boiler forwarded herewith yes

During progress of work in shops 1942 Feb. 19, Mar 4, 8, 24, Apr. 7, 9, 22, May 5, 12, 18, 21, 27, June 2, 5, 15, July 23, 17.

During erection on board vessel Aug. 18, Nov. 19. Total No. of visits 20

Is this boiler a duplicate of a previous case yes If so, state vessel's name and report No. M.V. "Empire Woodsworth" Aux. Rpt 100775

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey in accordance with approved plans, the workmanship & materials are good & the boiler was found tight & sound under hydraulic pressure. Boiler installed & found satisfactory under working conditions

Survey Fee Specification £ 27 : 10 : 0 When applied for (See Mch. Rpt. 4 b.)

Travelling Expenses (if any) £ ✓ : ✓ : ✓ When received, _____

Committee's Minute _____

Assigned See Id. 26 33544

R. W. Deane Director
Engineer/Surveyor to Lloyd's Register of Shipping.