

# REPORT ON WATER TUBE BOILERS

No. 5395 N.S.W.

Received at London Office **25 AUG 1949**

Date of writing Report 7-7-1949 When handed in at Local Office 7-7-1949 Port of SYDNEY & NEWCASTLE N.S.W.  
 No. in Reg. Bk. 90949 Survey held at SYDNEY N.S.W. & NEWCASTLE N.S.W. Date: First Survey 19-1-48 Last Survey 29-6-1949  
 on the STEEL SCREW STEAMER "DENMAN" (Number of Visits 16) Tons Gross 2265 Net 1100  
 Master Built at NEWCASTLE N.S.W. By whom built STATE DOCKYARD NEWCASTLE N.S.W. When built 1949  
 Engines made at SUNDERLAND By whom made N.E. MARINE ENG. CO. (1938) LD When made 1948  
 Boilers made at SYDNEY & NEWCASTLE N.S.W. By whom made BABCOCK & WILCOX LTD. When made 1949  
 Registered Horse Power Owners COMMONWEALTH OF AUSTRALIA Port belonging to Penzance S.S. Co.

**WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.**—Manufacturers of Steel BROKEN HILL PTY. CO. LTD.  
 (Letter for Record S.) Date of Approval of plan 26<sup>TH</sup> FEBRUARY 1948 Number and Description or Type of Boilers 2-B & W THREE PASS MARINE WITH SUPERHEATER Working Pressure 240 lbs/sq. in. Tested by Hydraulic Pressure to 425 lbs/sq. in. Date of Test 4-8-48  
 No. of Certificate 736 & 737 Can each Boiler be worked separately YES Total Heating Surface of Boilers Boiler 1518 sq. ft. S/H 348 sq. ft.  
 Is forced draught fitted YES Area of fire grate (coal) in each Boiler 3-142" Total grate area of boilers in vessel including Main and Auxiliary YES No. and type of burners (oil) in each boiler 2-MARK I SINGLE FLOW. No. and description of safety valves on each boiler 1-DOUBLE SPRING HIGH LIFT Area of each valve 3-142" Pressure to which they are adjusted 245 lbs per 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 YES  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4'6" Height of Boiler 20'-6" Width and Length 9'-0" x 18'-0"  
 Steam Drums:—Number in each boiler ONE Inside diameter 3'-6" Material of plates M.S. BOILER QUALITY Thickness 2 1/32" & 1 1/16"  
 Range of Tensile Strength 28-32 TONS/SP. INCH Are drum shell plates welded or flanged NO Description of riveting:—  
 Cir. seams LAP DOUBLE RV. long. seams D.R. WITH D.B.S. Diameter of rivet holes in long. seams 3 1/32" Pitch of Rivets 3-6838"  
 Lap of plate or width of butt straps 9 1/16" Thickness of straps 2 1/32" Percentage strength of long. joint:—Plate 73.70 Rivet 90.00  
 Diameter of tube holes in drum 4.056" Pitch of tube holes 7" Percentage strength of shell in way of tubes 41.6  
 If Drum has a flat side state method of staying (if fitted) YES Distance apart YES Number and pitch of stays in each YES Working pressure by rules YES Steam Drum Heads or Ends:—Material M.S. 26-30 TONS thickness PLAIN 3/4" Radius or how stayed 36"  
 Size of Manhole or Handhole 15" x 11" Water Drums:—Number in each boiler YES Inside Diameter YES  
 Material of plates YES Thickness YES Range of tensile strength YES Are drum shell plates welded or flanged YES Description of riveting:—Cir. seams YES long. seams YES Diameter of Rivet Holes in long. seams YES Pitch of rivets YES Lap of plates or width of butt straps YES Thickness of straps YES  
 Percentage strength of long. joint:—Plate YES Rivet YES Diameter of tube holes in drum YES Pitch of tube holes YES  
 Percentage strength of drum shell in way of tubes YES Water Drum Heads or Ends:—Material YES Thickness YES  
 Radius or how stayed YES Size of manhole or handhole YES Headers or Sections:—Number 10  
 Material M.S. 28-32 TONS Thickness 1/2" Tested by Hydraulic Pressure to 455 lbs/sq. in. Material of Stays YES  
 Area at smallest part 20.25 sq. in. Area supported by each stay YES Working Pressure by Rules YES Tubes:—Diameter 1 3/16" & 4" O.D.  
 Thickness 16-8 & 9 L.S.G. 4 & 4 L.S.G. Number 16-76-9 L.S.G. 4-10 Steam Dome or Collector:—Description of Joint to Shell YES  
 Percentage strength of Joint YES Diameter YES Thickness of shell plates YES Material YES  
 Description of longitudinal joint YES Diameter of Rivet Holes YES Pitch of Rivets YES Working Pressure of shell by Rules YES Crown or End Plates:—Material YES Thickness YES How stayed YES

**SUPERHEATER.** Type INTERDECK CONVECTION Date of Approval of Plan APPROVED AT GLS Tested by Hydraulic Pressure to 420 lbs/sq. in.  
 Date of Test 13.4.49 S. 20.4.49 Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler YES  
 Diameter of Safety Valve 2" Pressure to which each is adjusted 220 lbs per sq. in. Is easing gear fitted YES  
 Is a drain cock or valve fitted at lowest point of superheater YES Number, diameter, and thickness of tubes 128 1" DIA. 11 SWG.  
 Spare Gear. Tubes 18 Gaskets or joints:—Manhole 6 Handhole 1 Set Handhole plates 12

*See also spare gear list forwarded with RPT. A* The foregoing is a correct description,  
 BABCOCK & WILCOX OF AUSTRALIA PTY. LIMITED  
 G. F. Kell Manufacturer.

Dates of Survey } During progress of work in shops 19-1-48, 16-2-48, 7-5-48, 4-8-48. Is the approved plan of boiler forwarded herewith YES  
 while building } During erection on board vessel 29-11-48, 17-12-48, 9-1-49, 4-3-49  
 Total No. of visits 16

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) THESE BOILERS HAVE BEEN BUILT UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE RULES & APPROVED PLANS, THE MATERIALS & WORKMANSHIP ARE GOOD. THEY HAVE BEEN PROPERLY INSTALLED IN THE SHIP, TESTED UNDER WORKING CONDITIONS & FOUND SATISFACTORY & IN OUR OPINION ARE ELIGIBLE TO BE CLASSED AS RECOMMENDED IN MACHINERY REPORT.

Survey Fee £ See : } When applied for, 19  
 Travelling Expenses (if any) £ Rpt. 4 : } When received, 19

D.B.B. Peters & R.W. Buxey  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 28 OCT 1949  
 Assigned See F.E. Welch rpt.