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REPORT ON WATER TUBE BOILERS.

No. 23645

Received at London Office 14 APR 1954

Date of writing Report 31:3: 1954 When handed in at Local Office 6:4: 1954 Port of ABERDEEN.

No. in Reg. Book. Survey held at Aberdeen and Renfrew Date, First Survey 17: 3: 52 Last Survey 31: 3: 54 19

(Number of Visits) Tons Gross 855 Net 184

on the H.M. Twin Screw Steam Tug "SAMSON"

Built at Aberdeen By whom built A Hall & Co Ld. Yard No. 741 When built 1954

Engines made at do By whom made do. Engine No. 453/4 When made 1954

Boilers made at Renfrew By whom made Babcock and Wilcox Ld. Boiler No. 10/641 When made 1953.

Nominal Horse Power 540 MN Owners The Admiralty Port belonging to ---

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

Date of Approval of plan 24-6-52 etc No. and Description or Type of Boilers Two, Integral Furnace Type Working Pressure 270 lb Tested by Hydraulic Pressure to 455 Date of Test 20:4:53

No. of Certificate 23881,23863 Can each boiler be worked separately yes Total Heating Surface of Boilers 6470 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. B and W. Iowa Type. No. and description of safety valves on each boiler ~~Two~~. 1 2" double full Bore Area of each set of valves per boiler per rule as appd. ✓ as fitted 6.282 sq ins. ✓ Pressure to which they are adjusted 253/257 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 6ft. Height of boiler 16'4"

Main Engines approved for 250 lbs/sq in.

Width and length W 14'6" L.16'4" **Steam Drums:**—Number in each boiler One Inside diameter 3'5 13/16"

Thickness of plates Tube 1 7/16 " Wrapper 9/16" Range of tensile strength 28-32 tons Are drum shell plates welded or flanged welded If fusion welded, state name of welding firm Babcock and Wilcox Ld. Have all the requirements of the Rules for Class I vessels been complied with yes Description of riveting:—Circ. seams ------ long. seams ---

Diameter of rivet holes in long. seams ------- Pitch of rivets ------ Thickness of straps ------ Percentage strength of long. joint:—Plate ----- Rivet ----- Diameter of tube holes in drum 2", 1½" 1⅛" Pitch of tube holes 3 " 2 1/4" 1⅝"

Percentage strength of shell in way of tubes 29.8 **Steam Drum Heads or Ends:**—Range of tensile strength 28-32 tons

Thickness of plates 3/4" Radius or how stayed 2'0" Size of manhole or handhole 16" x 12" **Water Drums:**—Number in each boiler Inside diameter Thickness of plates Range of tensile strength Are drum shell plates welded or flanged If fusion welded, state name of welding firm Have all the requirements of the Rules for Class I vessels been complied with Description of riveting:—Circ. seams long. seams

Diameter of rivet holes in long. seams Pitch of rivets 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 **Water Drum Heads or Ends:**—Range of tensile strength 28-32 tons

Thickness of plates 3/4" Radius or how stayed 2'0" Size of manhole or handhole 16" x 12"

Headers or Sections:—Number side wall One Material S.D steel Thickness 5½" x 5½" x 3/4" Tested by hydraulic pressure to 455 lbs

Tubes:—Diameter 4", 2", 1½" 1½" Thickness 5.8.11.12 W.G. Number 12.86.144.901. **Steam Dome or Collector:**—Description of joint to shell Inside diameter Thickness of shell plates Range of tensile strength Description of longitudinal joint If fusion welded, state name of welding firm Have all the requirements for the Rules for Class I vessels been complied with Diameter of rivet holes Pitch of rivets Thickness of straps Percentage strength of long. joint plate rivet

Crown or End Plates:—Range of tensile strength Thickness Radius or how stayed

SUPERHEATER. Drums or Headers:—Number in each boiler None Inside diameter Thickness Material Range of tensile strength Are drum shell plates welded or flanged If fusion welded, state name of welding firm Have all the requirements of the Rules for Class I vessels been complied with Description of riveting:—Circ. seams long. seams

Diameter of rivet holes in long. seams Pitch of rivets 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 **Drum Heads or Ends:**— Thickness Range of tensile strength

Radius or how stayed Size of manhole or handhole 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

The foregoing is a correct description,

for Babcock and Wilcox. Manufacturer.

Dates of Survey while building: During progress of work in shops - - During erection on board vessel - - - Is the approved plan of boiler forwarded herewith Total No. of visits

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. These boilers have been built under Special Survey in accordance with the Rules and approved plans, and the materials and workmanship are good (Glasgow Rpt 80569) . Boilers securely fitted in vessel. tried under steam, safety valves adjusted and all found in good order.

Constructional particulars from Glasgw Rpt No 80569 A.J.Brown

Survey Fee ... ... £ : : When applied for 19

Travelling Expenses (if any) £ : : When received 19

John Douglas

Engineer Surveyor to Lloyd's Register of Shipping.

GLASGOW 13 APR 1954

Date

Committee's Minute SEE ACCOMPANYING MACHINERY REPORT

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