5c.

REPORT ON WATER TUBE BOILERS.

No. 14,714

Received at London Office 8 - MAR 1949

(Date of) writing Report 4-3-1949 When handed in at Local Office 7/3/1949 Port of Belfast

Survey held at Belfast Date, First Survey Visits included in Rpt. 4a. Last Survey 19

(Number of Visits) Tons { Gross / Net }

on the TWIN SCREW "MAGDALENA"

(Built) at Belfast By whom built Harland & Wolff Ld. When built 1949

(Engines) made at ~Do~ By whom made Harland & Wolff Ld. When made 1949

(Boilers) made at ~Do~ By whom made ~Do~ When made 1949

(Nominal) Horse Power 4147 Owners Royal Mail Lines Ld. Port belonging to London

(W)ATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Cert. Attached

(Date) of Approval of plan 10-1-47. Number and Description or Type

Boilers 2 - Foster Wheeler. ~~Working~~ DESIGN Pressure 570 lbs. Tested by Hydraulic Pressure to 905 lbs. Date of Test P 25-11-48 / S 8-12-48

(No.) of Certificate P 1410 / S 1411 Can each boiler be worked separately Yes Total Heating Surface of Boilers: BOILERS WATER WALLS 16910 ft; ECONOMISER 14450 ft; SUPERHEATER 4240 ft; TOTAL 35600 ft (See below)

(If fo)rced draught fitted Yes Area of fire grate (coal) in each Boiler —

(No.) and type of burners (oil) in each boiler 5 Inboard 3 Outboard Wallsend Type No. and description of safety valves on

(each) boiler One - 2¼" C.S. Single Full Bore Area of each set of valves per boiler { per rule app. / as fitted 3.976 □" } Pressure to which they

(are) adjusted 570 lbs 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 21'0"

(Wid)th and Length 23'5" x 16'3" **Steam Drums:**—Number in each boiler One Inside diameter 4'6" of wrapper plate / 4'-4⅞" of tube plate

(Thic)kness of plates Wrapper 1¾" Tube 3⅛" Range of Tensile Strength 28/32 tons/□" Are drum shell plates welded

(or f)langed Welded If fusion welded, state name of welding firm Broomside Boiler Works Have all the requirements of the rules

(for) Class I vessels been complied with Yes Description of riveting:—Cir. seams — long. seams —

(Dia)meter 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 1¼", 2", 3¼" & 5" Pitch of tube holes 4·43⅛" for 2" o/dia tubes / 2" " 1¼" o/dia "

(Per)centage strength of shell in way of tubes 36·75% for 1¼" o/dia tubes / 35·5% & 49·6% for 2" o/dia tubes **Steam Drum Heads or Ends:**—Range of tensile strength 26/30 tons

(Thic)kness of plates 2⅛" Radius or how stayed 3'-6" RAD. INSIDE Size of manhole or handhole 16" x 12" **Water Drums:**—Number

(in ea)ch boiler 2 Inside Diameter 2'-0" Thickness of plates 1¾" Range of tensile strength 28/32 tons Are drum shell plates

(weld)ed or flanged Forged 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:—Cir. seams — long. seam —

(Dia)meter of rivet holes in long. seams — Pitch of rivets — Thickness of straps —

(Per)centage strength of long. joint:—Plate — Rivet — Diameter of tube holes in drum 1¼", 2", 3¼" & 5" Pitch of tube holes 4·43⅛" for 2" o/d tubes / 2" 1¼" o/d "

(Per)centage strength of drum shell in way of tubes 36·75% for 1¼" o/dia tubes / 35·5% & 49·6% for 2" o/dia tubes **Water Drum Heads or Ends:**—Range of Tensile strength 28/32 tons

(Thic)kness of plates 2½" Radius or how stayed 2'-11" Size of manhole or handhole 16" x 12"

(Hea)ders or Sections:—Number 3 Material 28/32 ton steel Thickness 1" Tested by Hydraulic Pressure to 905 lbs

(Tub)es:—Diameter 1¼", 2", 3¼" & 5" Thickness 1¼"-0·128, 2"-0·192, 3¼"-0·3125, 5"-0·341 Number 1¼"-1304, 2"-288, 3¼"-28, 5"-10 **Steam Dome or Collector:**—Description of

(join)t to Shell — Inside diameter — Thickness of shell plates — Range of tensile

(stre)ngth — Description of longitudinal joint — If fusion welded, state name of welding

— Have all the requirements of the rules for Class I vessels been complied with — Diameter of rivet holes —

(Pitc)h of rivets — Thickness of straps — Percentage strength of long. Joint — Plate — Rivet —

(Cro)wn or End Plates:—Range of tensile strength — Thickness — Radius or how stayed —

(SU)PERHEATER. Drums or Headers:—Number in each boiler 2 Inside Diameter 6⅝" RADIUS

(Thic)kness 1½" Material Grade B carbon molybdenum Range of tensile strength — Are drum shell plates welded

(or f)langed Forged 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:—Cir. seams — long. seams —

(Dia)meter 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 1⅛" Pitch of tube holes 1 13/16" Percentage strength of

(dru)m shell in way of tubes 37·9 **Drum Heads or Ends:**— Thickness 1¾" Range of tensile strength —

(Rad)ius or how stayed Flat Size of manhole or handhole — Number, diameter, and thickness of tubes 365, 1⅛", 0·128"

(Test)ed by Hydraulic Pressure to 905 lbs Date of Test P 5-1-49 / S 14-1-49 Is a safety valve fitted to each section of the superheater ~~which~~

(can) be shut off from the boiler Yes No. and description of Safety Valves One 2¾" C.S. Double Full Bore Area of each set

(of v)alves 11·879 □" Pressure to which they are adjusted 525 lbs Is easing gear fitted Yes

(Sp)are Gear. Has the spare gear required by the rules been supplied Yes

H.S. for Reg. Bk. takes ½ Economiser area.

Correct total H.S. = 28375 sq. ft.

FOR HARLAND AND WOLFF, LIMITED.

The foregoing is a correct description,

A. Mantell Secretary Manufacturer.

(D)ates (of) Survey (wh)ile (bui)lding { During progress of work in shops / During erection on board vessel } Is the approved plan of boiler forwarded herewith

Total No. of visits

(Is t)his boiler a duplicate of a previous case No If so, state vessel's name and report No.

(GE)NERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boilers have been constructed under (Spec)ial survey in accordance with the Rules and approved plans. The materials and workmanship (are) good. The boilers have been efficiently installed, tried under full working conditions and the (safe)ty valves adjusted steam to stated pressures. Economisers fitted

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

Travelling Expenses (if any) £ SEE MACHY. RPT. : } When received, 19

N. Russell A. Faintith

Engineer Surveyors to Lloyd's Register of Shipping.

(Co)mmittee's Minute FRI. 22 APR 1949

(S)igned See F.E. mchy. rpt.

HO

End 13/4/49

W1012-0068