

REPORT ON WATER TUBE BOILERS.

No. 11091

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Port of Copenhagen

No. in Survey held at Elsinore and Nakskov. Date, First Survey 8th June 1939 Last Survey 4th January 1940
 Reg. Bk. on the Hel Single Screw Motor Tanker SATURNUS (Number of Visits 26) Gross 9964.73 Tons
 Net 5817.86 Tons

Master Built at Nakskov By whom built J. S. Nakskov Skibsverft. When built 1939.
 Engines made at Copenhagen By whom made J. S. Nakskov Skibsverft. When made 1939.
 Boilers made at Elsinore By whom made J. S. Nakskov Skibsverft. When made 1939.
 Registered Horse Power 118 Owners Pederiskibolag "Saturnus" Port belonging to Stockholm.

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel Albert Hahn Porsurnia Bogumien

(Letter for Record) Date of Approval of plan 8th March 1939. Number and Description or Type of Boilers One off "La Moult" boiler Working Pressure 14.5 kg/cm² Tested by Hydraulic Pressure to 25.25 kg/cm² Date of Test 17.8.1939.

No. of Certificate 648 Can each boiler be worked separately Total Heating Surface of Boilers 1644 + 1765 sq ft

Is forced draught fitted No Area of fire grate (coal) in each Boiler Total grate area of boilers in vessel including

Main and Auxiliary No. and type of burners (oil) in each boiler Exhaust fired No and description of safety valves on each boiler One off directly spring loaded Area of each valve 2827 sq in Pressure to which they are adjusted 13 kg/cm²

Are they fitted with easing gear No 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 No bunkers or woodwork Height of Boiler 4350 mm Width and Length 1760 mm

Steam Drums:—Number in each boiler Inside diameter Material of plates Thickness

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 plate 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 shell in way of tubes

If Drum has a flat side state method of staying Depth and thickness of girders at centre

(if fitted) Distance apart Number and pitch of stays in each Working pressure

by rules Steam Drum Heads or Ends:—Material Thickness Radius or how stayed

Size of Manhole or Handhole Water Drums:—Number in each boiler 2 Inside Diameter 80 mm

Material of plates Headers Human M. Steel Thickness 20 mm Range of tensile strength 35.9 - 38.6 kg/cm² Are drum shell plates welded

or flanged solid drum tube 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 32.5 mm 37.9 mm Pitch of tube holes 164 mm

Percentage strength of drum shell in way of tubes 77.5 Water Drum Heads or Ends:—Material Human M. Steel Thickness 12 mm

Radius or how stayed Size of manhole or handhole Headers or Sections:—Number 2

Material Human M. Steel Thickness 20 mm Tested by Hydraulic Pressure to 70 atm Material of Stays

Area at smallest part Area supported by each stay Working Pressure by Rules Tubes:—Diameter 26 mm

Thickness 3 mm Number 3 Steam Dome or Collector:—Description of Joint to Shell

Percentage strength of Joint Diameter Thickness of shell plates Material

Description of longitudinal joint Diameter of Rivet Holes Pitch of Rivets Working Pressure of shell

by Rules Crown or End Plates:—Material Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan 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

Diameter of Safety Valve Pressure to which each is adjusted Is easing gear fitted

Is a drain cock or valve fitted at lowest point of superheater Number, diameter, and thickness of tubes

Spare Gear. Tubes Gaskets or joints:—Manhole Handhole Handhole plates

The foregoing is a correct description,

HELSINGØRS SKIBS- OG MASKINBYGGERI Manufacturer.

Dates of Survey During progress of work in shops 1939: 8/6-17/7-19/7-24/7-27/7-28/7-2/8-5/8-8/8-11/8-15/8-18/8-22/8-25/8-28/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-15/4-18/4-21/4-24/4-27/4-30/4-31/4-3/5-6/5-9/5-12/5-15/5-18/5-21/5-24/5-27/5-30/5-31/5-3/6-6/6-9/6-12/6-15/6-18/6-21/6-24/6-27/6-30/6-31/6-3/7-6/7-9/7-12/7-15/7-18/7-21/7-24/7-27/7-30/7-31/7-3/8-6/8-9/8-12/8-15/8-18/8-21/8-24/8-27/8-30/8-31/8-3/9-6/9-9/9-12/9-15/9-18/9-21/9-24/9-27/9-30/9-31/9-3/10-6/10-9/10-12/10-15/10-18/10-21/10-24/10-27/10-30/10-31/10-3/11-6/11-9/11-12/11-15/11-18/11-21/11-24/11-27/11-30/11-31/11-3/12-6/12-9/12-12/12-15/12-18/12-21/12-24/12-27/12-30/12-31/12-3/1-6/1-9/1-12/1-15/1-18/1-21/1-24/1-27/1-30/1-31/1-3/2-6/2-9/2-12/2-15/2-18/2-21/2-24/2-27/2-30/2-31/2-3/3-6/3-9/3-12/3-15/3-18/3-21/3-24/3-27/3-30/3-31/3-3/4-6/4-9/4-12/4-1