

REPORT ON WATER TUBE BOILERS.

No. 127547
15 SEP 1948

Received at London Office

Date of writing Report 30-8-1948 When handed in at Local Office 19 Port of LIVERPOOL

No. in Survey held at **BIRKENHEAD** Date, First Survey Last Survey 19
Reg. Bk. **77732** on the **TOMOCYCLUS** (Number of Visits) Tons (Gross) **10668**
Net **6321**
Built at **PORTLAND, OR.** By whom built **KAISER Co. Inc.** When built **1944**
Engines made at **LYNN, MASS.** By whom made **GENERAL ELECTRIC Co.** When made **1944**
Boilers made at By whom made **COMBUSTION ENGINEERING Co. Inc.** When made **1944**
Nominal Horse Power. Owners **ANGLO-SAXON PETROLEUM Co. Ltd.** Port belonging to **LONDON**

Reversing Switches.—If any are provided are they interlocked as per Rule **Yes** Resistances.—Are resistances for synchronous motor fields insulated as per Rule **Yes** Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm **Indicator only.**

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule **Yes** Are the ends of Paper and Varnished Cambric Insulated Cables sealed **Yes** Are all Cables carrying A.C. constructed and installed as per Rule **Yes** Have all Cables been tested at the makers works **—**

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines **No** If so, have full particulars of rating been submitted and approved **—** Have they been tested under working conditions and do they give the required number of starts **—** Are they installed as per Rule **—** Are the charging arrangements satisfactory **—**

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved **No** Is a list of the articles supplied attached to this report **No** Are they stored as per Rule **Yes**

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.*		MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole.	Nominal Area per Pole.	When Running.	When Manoeuvring.				
MAIN GENERATORS	3	3,000,000	1315	—	1708	2300	V.C.	L.C.A
GENERATOR FIELDS	1	500,000	165	375	444	110	"	"
MAIN MOTORS	3	3,000,000	1160	—	1708	2300	"	"
MOTOR FIELDS	1	500,000	420	—	444	110	"	"
CONTROL CIRCUITS								
OTHER CIRCUITS:—								

*For field circuits the "Hot" and "Cold" value should be given.

The foregoing is a correct description,

Electrical Engineers.

Date

COMPASSES.—Are Single-Conductor circuits carrying direct current arranged with lead and return Conductors fitted as close to one another as possible

Have tests been made during adjustment of the Compasses to determine the effect of switching the main circuits on and off **—**

Builders' Signature.

Date

General Remarks (State quality of workmanship, opinions as to class, &c.) **The Electrical Propulsion Equipment of the vessel appears to be installed in accordance with American practice and the typical plans of T2 Tankers. The details of this report were obtained from these plans and instruction booklet & personal observation.**

The machinery was examined and tested under working conditions & found satisfactory. The equipment appears in good and efficient condition & whilst not strictly in accordance with the Society Rules, it is in my opinion, eligible for classification.

The amount of Entry Fee £ : : When applied for, 19

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

Date

Committee's Minute

LIVERPOOL 14 SEP 1948
See Minutes or Report 9.

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel Bethlehem Steel, Wash Steel Co.

Date of Approval of plan **Nº P. 9749 5-9747** Number and Description or Type of Boilers **2 Babcock Type W.T. Boilers Working Pressure 500** Tested by Hydraulic Pressure to **750** Date of Test **25-5-44**

No. of Certificate **—** Can each boiler be worked separately **Yes** Total Heating Surface of Boilers **49344**

Is forced draught fitted **Yes** Area of fire grate (coal) in each Boiler **—** SUPERHEATER **7439**

No. and type of burners (all) in each boiler **4 Jod** No. and description of safety valves on each boiler **1-2 1/2" High Lift (Double)** Area of each set of valves per boiler { per rule **7.000** as fitted **9.8** Pressure to which they are adjusted **500 lbs/sq"** 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 **Well Clear** Height of boiler **21'-0"**

Width and Length **11'-10" x 17'-6"** Steam Drums:—Number in each boiler **One** Inside diameter **41 9/32" x 42"**

Thickness of plates **Shell 3/4" Tube plate 1 1/32"** Range of Tensile Strength **A.B. requirements** Are drum shell plates welded or flanged **Welded** If fusion welded, state name of welding firm **Not known** Have all the requirements of the rules for Class I vessels been complied with **—** Description of riveting:—Cir. 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 **4"** Pitch of tube holes **7"**

Percentage strength of shell in way of tubes **—** Steam Drum Heads or Ends:—Range of tensile strength **A.B. requirements** Thickness of plates **1 1/4"** Radius or how stayed **—** 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:—Cir. seams **—** long. seam **—**

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 **—** Thickness of plates **—** Radius or how stayed **—** Size of manhole or handhole **—**

Headers or Sections:—Number **12** Material **Steel** Thickness **7/8"** Tested by Hydraulic Pressure to **—**

Tubes:—Diameter **1 1/4", 2" x 4"** Thickness **13 B.W.G., 10 B.W.G. + 5 B.W.G.** Number **1148** 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 of 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 **2** Inside Diameter **7 1/4" square**

Thickness **3/4"** Material **Steel** Range of tensile strength **A.B. requirements** 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:—Cir. 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 **1 1/4"** Pitch of tube holes **about 2 3/8"** 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 **4 1/4" x 3 3/8"** Number, diameter, and thickness of tubes **145-1 1/4"-11 B.W.G.**

Tested by Hydraulic Pressure to **750 lbs/sq"** Date of Test **Not known** 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 **1-1 1/4" High Lift (Single)** Area of each set of valves **1.226 sq"** Pressure to which they are adjusted **464 lbs/sq"** Is easing gear fitted **Yes**

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

The foregoing is a correct description,

Manufacturer.

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

Is this boiler a duplicate of a previous case **Yes** If so, state vessel's name and report No. **T.R. TANKERS.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This report is submitted for the information of the committee.**

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

Committee's Minute Assigned

James H. Smyth
Engineer Surveyor to Lloyd's Register of Shipping.

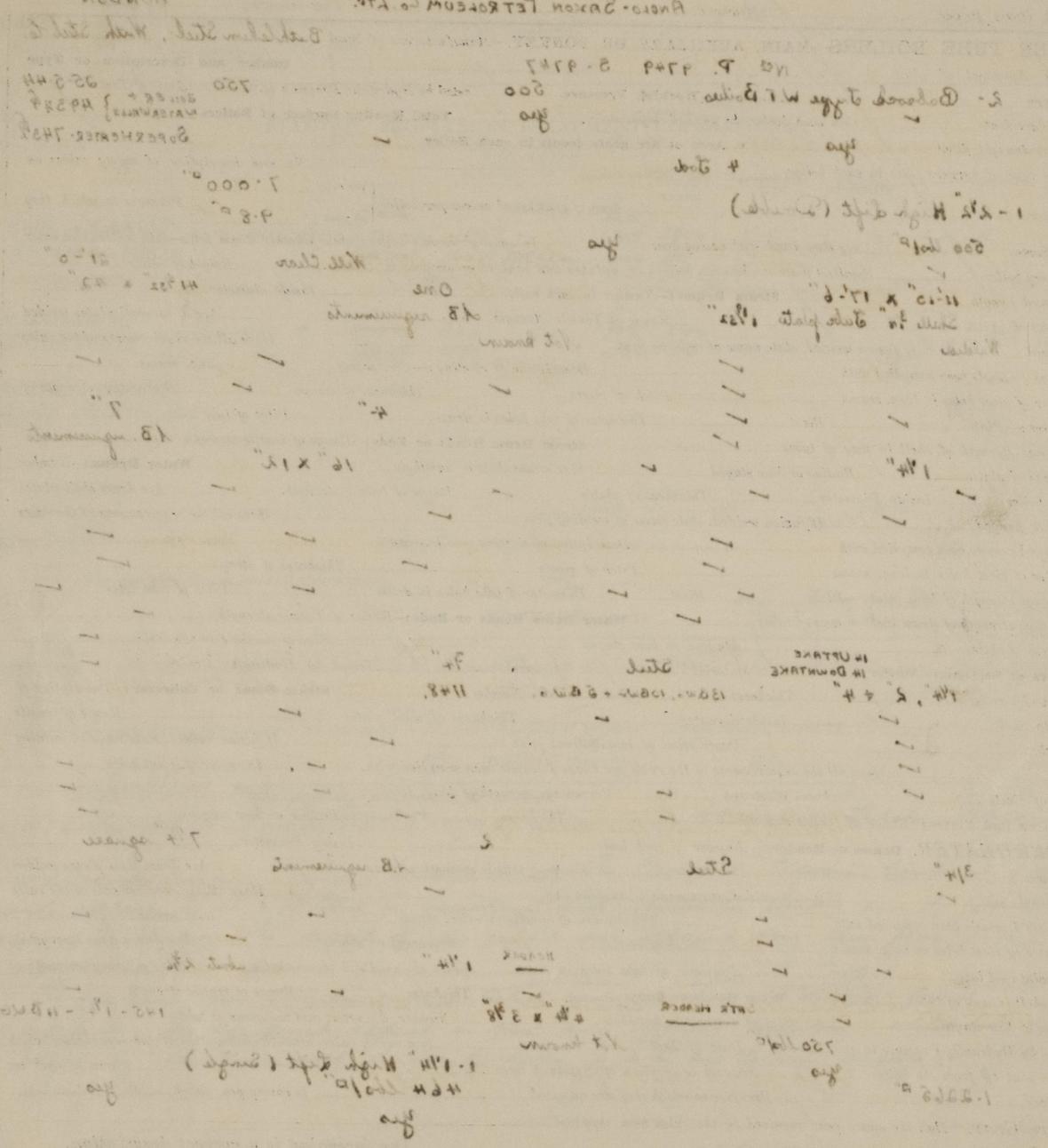


REPORT ON WATER TUBE BOILERS

30-8-48 - 8-08 - 11

BRITISH PORTLAND OR.
TOMOCYCLUS
WANN, MASS.

COMBUSTION ENGINEERING CO. INC.
GENERAL ELECTRIC CO.
KAISER CO. INC.



Handwritten notes and signatures at the bottom of the left page, including 'T. S. THOMAS' and 'at of details on page 10'.

Rpt. 13. No. 127527

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

15 SEP 1948

Date of writing Report... 4th Aug 48... Port of Liverpool
No. in Survey held at Birkenhead Date, First Survey 2/6/48 Last Survey 30/7/48
Reg. Book 77732 on the ss TOMOCYCLUS Tons Gross 10668 Net 6321
Built at Portland Or. By whom built Kaiser Co. Inc. Yard No. - When built 1944
Owners Anglo Saxon Petroleum Co. Ltd Port belonging to London
Electrical Installation fitted by Procured by Butler Contract No. - When fitted 1944

Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.T. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No
Have plans been submitted and approved Typical plans of Tankers System of Distribution Power - 3 phase 3 wire Voltage of supply for Lighting 120 AC
Heating 220 AC Power 440 AC Direct or Alternating Current, Lighting AC Power AC If Alternating Current state periodicity 60 Prime Movers,
has the governing been tested and found as per Rule when full load is suddenly thrown on and off Yes Are turbine emergency governors fitted with a
trip switch as per Rule Yes Generators, are they compound wound See Note No are they level compounded under working conditions
if not compound wound state distance between generators. - and from switchboard. - Where more than one generator is fitted are they
arranged to run in parallel. No, are shunt field regulators provided. Yes Is the compound winding connected to the negative or positive pole
negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing. No Have certificates of
test for machines under 100 kw. been supplied. No and the results found as per rule. - Are the lubricating arrangements and the construction
of the generators as per rule. Yes Position of Generators In main engine room starting platform.
is the ventilation in way of generators satisfactory. Yes are they clear of inflammable material. Yes, if situated
near unprotected combustible material state distance from same horizontally. - and vertically. - are the generators protected from mechanical
injury and damage from water, steam and oil. Yes, are the bedplates and frames earthed. Yes and the prime movers and generators in metallic
contact. Yes Switchboards, where are main switchboards placed. In main engine room at starting platform.
are they in accessible positions, free from inflammable gases and acid fumes. Yes, are they protected from mechanical injury and damage from water, steam
and oil. Yes, if situated near unprotected combustible material state distance from same horizontally. - and vertically. - what insulation
material is used for the panels. Dead front board. Insulation material of synthetic insulating material is it an Approved Type. Yes, if of
semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule. - Is the frame effectually earthed. Yes
Is the construction as per Rule. Yes, including accessibility of parts. Yes, absence of fuses on the back of the board. Individual fuses
to pilot and earth lamps, voltmeters, etc. Yes locking of screws and nuts. Yes, labelling of apparatus and fuses. Yes, fuses on the "dead"
side of switches. Yes Description of Main Switchgear for each generator and arrangement of equaliser switches. Single pole circuit
breakers for A.C. Generators, D.P. Circuit breakers for D.C. Generator.
and for each outgoing circuit. Single pole or double pole circuit breakers.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 14
ammeters 5 voltmeters 1 synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the
equaliser connection. - Earth Testing, state means provided. Earth bonding lamps on D.C. and A.C. supplies
Switches, Circuit Breakers and Fuses, are they as per Rule. Yes, are the fuses an approved type. Yes, are all fuses labelled as
per Rule. Yes. If circuit breakers are provided for the generators, at what overload current did they open when tested. 150% are the reversed current
protection devices connected on the pole opposite to the equaliser connection. - have they been tested under working conditions, and at what current
did they operate. - Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. All American
American Standard Cables
Cables, are they insulated and protected as per the appropriate Tables of the Rules. - if otherwise than as per Rule are they of an approved type. -
state maximum fall of pressure between bus bars and any point under maximum load. - are the ends of all cables having a sectional area of 0.04
square inch and above provided with soldering sockets. Clamps Are paper insulated and varnished cambric insulated cables sealed at the ends
with V.C. cables

* Generating sets consist of 400 K.V.A. alternators; 75 Kilo. Steam turbine driven by steam turbine.
55 Kilo compound wound generator all mounted on common bedplate and
driven by steam turbine.

