

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 12196

Date of writing Report 30 June 1947 When handed in at Local Office 19 Port of Copenhagen Received at London Office

No. in Reg. Book 85648 Survey held at Nalborg Date, First Survey 27 September 1946 Last Survey 27 June 1947 Number of Visits 10

Single on the Motor Screw vessel AFRICAN REEFER Tons Gross 1862.14 Net 968.29

Built at Elsinore By whom built Maschinenbau Yard No. 230 When built 1935

Owners Rederiet Ocean A/S Port belonging to Copenhagen

Oil Engines made at Copenhagen By whom made Borniche & Niels Maschin ENGINE Contract No. 2458-2453 When made 1935

Generators made at Copenhagen By whom made Thomas B. Thorge GENERATOR Contract No. 226390 When made 1935

No. of Sets 3 Engine Brake Horse Power 180 Nom. Horse Power as per Rule 65 Total Capacity of Generators 3 x 120 Kilowatts.

**OIL ENGINES, &c.**—Type of Engines Heavy oil engine, solid injection 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 3 1/4 220 1/2 Length of stroke 370 1/4 No. of cylinders 3 No. of cranks 3

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 3 1/4 280 1/2 Is there a bearing between each crank ye

Revolutions per minute 144 1650 Flywheel dia. 3 1/4 1200 1/2 Weight 1550 kg Means of ignition compression Kind of fuel used Heavy oil

Crank Shaft, dia. of journals 130 1/2 Crank pin dia. 150 1/2 Crank Webs Mid. length breadth 245 1/2 Thickness parallel to axis 85 1/2

Flywheel Shaft, diameter 144 1650 Intermediate Shafts, diameter 144 1650 Thickness of cylinder liners 18 1/4

Is a governor or other arrangement fitted to prevent racing of the engine when declutched ye Means of lubrication forced

Are the cylinders fitted with safety valves ye Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Cooling Water Pumps, No. 3 independent Is the sea suction provided with an efficient strainer which can be cleared within the vessel ye

Lubricating Oil Pumps, No. and size 1 1/4 for each engine gear wheel pumps 4.5 tons/hour

**MANOEUVRING**  
Air Compressors, No. 1 for each engine No. of stages 2 Diameters 280 1/2 (280 1/2-250 1/2) Stroke 190 1/4 Driven by the engine

**BLOWERS**  
Scavenging Air Pumps, No. 1 for each engine Diameter rotary CAPACITY Stroke 22 1/4 1/min Driven by the engine

**AIR RECEIVERS:**—Have they been made under Survey ye Germanischer Lloyd State No. of Report or Certificate ✓

Is each receiver, which can be isolated, fitted with a safety valve as per Rule ye

Can the internal surfaces of the receivers be examined ye What means are provided for cleaning their inner surfaces ✓

Is there a drain arrangement fitted at the lowest part of each receiver ye

High Pressure Air Receivers, No. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓

Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓

**EMERGENCY**  
Starting Air Receivers, No. 1 Total cubic capacity 100 liters Internal diameter 335 1/2 thickness 8 1/2

Seamless, lap welded or riveted longitudinal joint seamless Material St. Steel Range of tensile strength ✓ Working pressure by Rules 30 atm

**ELECTRIC GENERATORS:**—Type Drif prof verholsted

Pressure of supply 220 volts Full Load Current 3 1/4 545 Amperes Direct or Alternating Current direct current

If alternating current system, state the periodicity ✓ Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown on and off ye Generators, are they compounded as per Rule ye is an adjustable regulating resistance fitted in series with each shunt field ye

Are all terminals accessible, clearly marked, and furnished with sockets ye Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched ye Are the lubricating arrangements of the generators as per Rule ye

If the generators are under 100 kw. full load rating, have the makers supplied certificates of test ✓ and do the results comply with the requirements ✓

If the generators are 100 kw. or over have they been built and tested under survey ye Germanischer Lloyd

PLANS.—Are approved plans forwarded herewith for Shafting ye Receivers ✓ Separate Tanks ✓

SPARE GEAR as per Rule

The foregoing is a correct description,

Manufacturer.



003245-003251-0098

Dates of Survey while building  
 During progress of work in shops - - ✓  
 During erection on board vessel - - ✓  
 Total No. of visits ✓

Dates of Examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Piston rods ✓

Connecting rods ✓ Crank and Flywheel shafts ✓ Intermediate shafts ✓

Crank shaft { Material *Siemens Martin Ingot Steel (B. W)* Tensile strength ✓  
 Elongation ✓ Identification Marks ✓

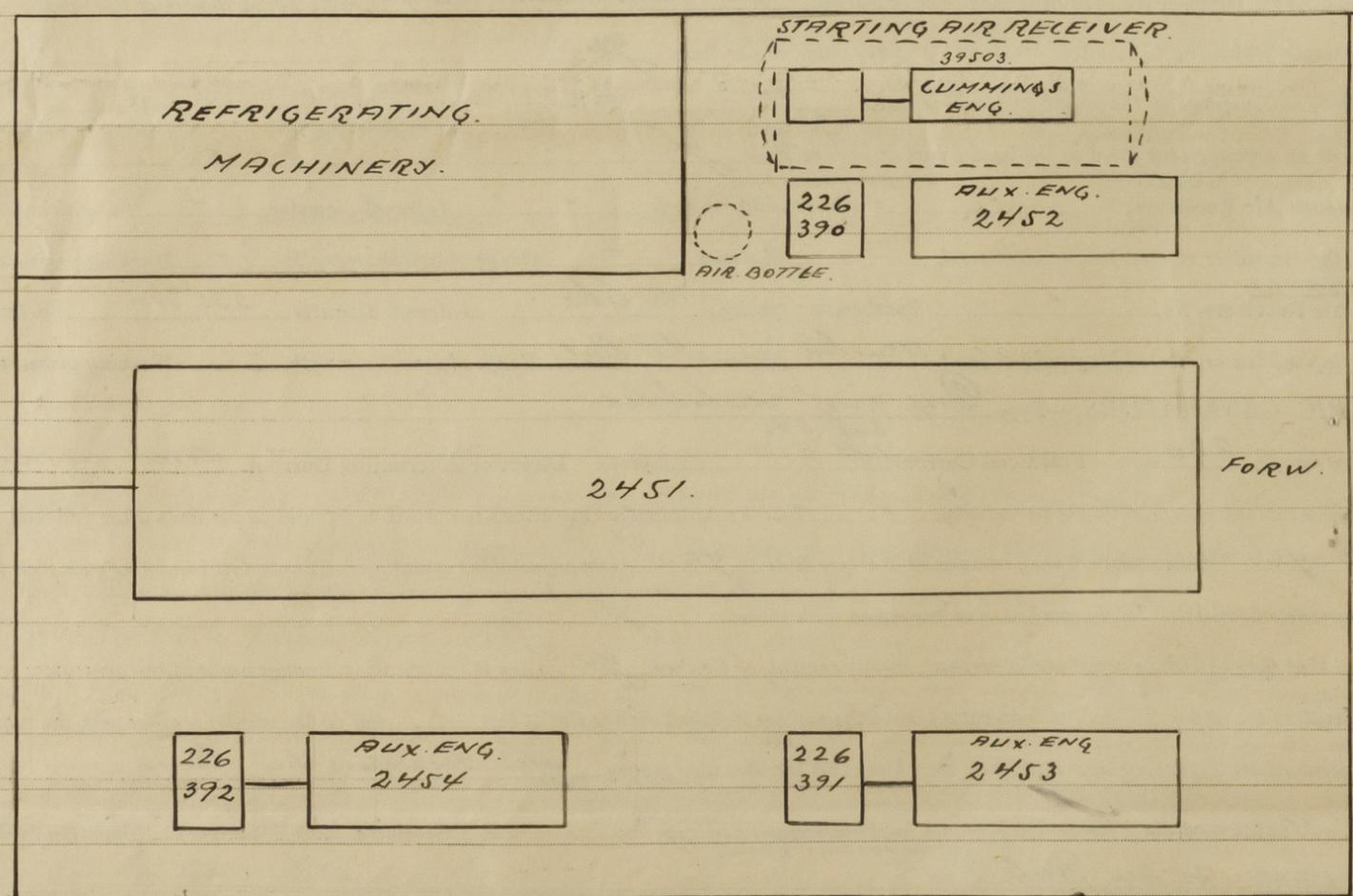
Flywheel shaft, Material ✓ Identification Marks ✓

Is this machinery duplicate of a previous case *No.* Identification Marks ✓

Identification marks on Air Receivers *B. W 1935 Indhold 100 liter. Art. Tryk 28 atm. Pr. Tryk 50 atm  
 11.10.35 G J L. 563 K. H.*

Is this machinery duplicate of a previous case *No* If so, state name of vessel ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *The three 180 BHP oil engines have been constructed by Messrs Burmeister & Wain, Copenhagen under Special Survey by Germanischer Lloyd.  
 The six cylinder heavy oil engine has been constructed by Messrs Cummins Diesel Paylow Ohio and was placed on board while the vessel was under U.S.A. flag.  
 All engines have been opened up, repaired as required, and found in good condition. They have been tested under working conditions and found satisfactory.*



The amount of Fee ... £ ✓ : : When applied for 19  
 Travelling Expenses (if any) £ : : When received 19

Committee's Minute *FRI. 8 AUG 1947*  
 Assigned *See FE machy rpt.*

*S. L. Larsen*  
 Surveyor to Lloyd's Register of Shipping.  
 Lloyd's Register Foundation

Im. 11.42.-T. (MADE AND PRINTED IN ENGLAND).  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)