

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 12993

Received at London Office

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Date of writing Report 6<sup>th</sup> June 1940 When handed in at Local Office 18<sup>th</sup> June 1940 Port of Gothenburg  
 No. in Survey held at Gothenburg Date, First Survey 14<sup>th</sup> June 1939 Last Survey 7<sup>th</sup> May 1940  
 in Reg. Book Suppt. Number of Visits 30

39780 on the Single Tonn Triple Screw vessel **BELLONA** Tons { Gross 11267 Net 6800  
 Built at Gothenburg By whom built A/B. Gotaverken Yard No. 540 When built 1940  
 Owners Rederi A/B. ZENIT Port belonging to Gothenburg  
 Oil Engines made at Gothenburg By whom made A/B. Gotaverken Contract No. { 372 1373 1374 When made 1940  
 Generators made at Odense By whom made Thomas B. Thirge Contract No. { 233555 233556 233557 When made 1939  
 No. of Sets 3 Engine Brake Horse Power 3x190 Nom. Horse Power as per Rule 3x43.4 Total Capacity of Generators 375 Kilowatts.

**OIL ENGINES, &c.**—Type of Engines Heavy oil 2 or 4 stroke cycle 4 Single or double acting S.A.  
 Maximum pressure in cylinders 45 kg/cm<sup>2</sup> Diameter of cylinders 240 mm. Length of stroke 360 mm. No. of cylinders 5 No. of cranks 5  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 301 Is there a bearing between each crank Yes  
 Revolutions per minute 400 Flywheel dia. 1250 mm. Weight 1910 kg Means of ignition Compression Kind of fuel used Diesel oil  
 Crank Shaft, dia. of journals as per Rule 141 as fitted 160 Crank pin dia. 160 Crank Webs Mid. length breadth 213.5 Thickness parallel to axis shrunk  
 Flywheel Shaft, diameter as per Rule Flywheel fitted to crankshaft Intermediate Shafts, diameter as per Rule Thickness of cylinder liners 25, 14  
 Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced  
 Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged  
 Cooling Water Pumps, No. 2 @ 430 lit/min. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
 Lubricating Oil Pumps, No. and size 1 @ 4 ton/hr. for each engine  
 Air Compressors, No. none No. of stages — Diameters — Stroke — Driven by —  
 Scavenging Air Pumps, No. none Diameter — Stroke — Driven by —  
**AIR RECEIVERS:**—Have they been made under Survey Yes State No. of Report or Certificate 6476  
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes  
 Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Steam & soda  
 Is there a drain arrangement fitted at the lowest part of each receiver Yes  
**High Pressure Air Receivers, No. none** Cubic capacity of each — Internal diameter — thickness —  
 Seamless, lap welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure by Rules —  
**Starting Air Receivers, No. 1** Total cubic capacity 120 litres Internal diameter 302 mm. thickness 8 mm.  
 Seamless, lap welded or riveted longitudinal joint seamless Material S.M. Steel Range of tensile strength 44/47 kg/mm<sup>2</sup> Working pressure by Rules 42.5 kg/cm<sup>2</sup>  
**ELECTRIC GENERATORS:**—Type Dippedole Compound  
 Pressure of supply 220 volts. Full Load Current 568 Amperes. Direct or Alternating Current D.C.  
 If alternating current system, state the periodicity — Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on and off Yes  
 Generators, are they compounded as per rule Yes is an adjustable regulating resistance fitted in series with each  
 shunt field Yes Are all terminals accessible, clearly marked, and furnished with sockets Yes  
 Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes  
 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 Yes  
**PLANS.** Are approved plans forwarded herewith for Shafting 28/9/38 Receivers 21/4/39 Separate Tanks 6/10/29  
 (If not, state date of approval)  
**SHAFTING GEAR** As per Rules.

The foregoing is a correct description,

ALFRED J. COLLIER

Surveyor

Manufacturer.

Signature



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Dates of Survey while building { During progress of work in shops - - } 1939 June 14. July 10. Aug. 5. Sept. 11. Oct. 12. Nov. 16. 21. Dec. 1. 4. 6. 13. 1940 Jan 3. 13  
 { During erection on board vessel - - - } 1939 Dec. 19. 1940 Jan 26. Feb. 6. 7. 13. 15. 19. 22. 29. Mar. 1. 12. 29. 30. April 1. 9. 12. May 7  
 { Total No. of visits } 30

Dates of Examination of principal parts—Cylinders 14. 16/6. 10/7. 5/8/39 Covers 14. 16/6. 10/7. 5/8/39 Pistons 21/11. 6/12/39 Piston rods ✓

Connecting rods 21/11. 6/12/39 Crank and Flywheel shafts 16/11. 28/12/39 Intermediate shafts ✓

Crank and Flywheel shafts, Material S. M. Steel Identification Marks LLOYDS 10258 W.T.M. 21-3-39 LLOYDS 10259 W.T.M. 21-3-39 LLOYDS 10260 P.K. 25-6-39

Intermediate shafts, Material ✓ Identification Marks ✓

Identification marks on Air Receivers 5464  
 LLOYDS TEST  
 H.T. 80 ATM.  
 W.P. 40 ATM.  
 H.J. 21-6-39  
 H.J. 6762

Is this machinery duplicate of a previous case Yes If so, state name of vessel ANDREA BRÖVIG. Got. rpt. no. 12832

General Remarks (State quality of workmanship, opinions as to class, &c.)

These auxiliary engines have been constructed under special survey in accordance with the Rules & approved plans.

The materials & workmanship are good and forging reports for the shafting are attached.

The engines have been securely fitted in the vessel under my inspection and to my satisfaction & have been tested under full power conditions & found in order.

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

W. S. Ligers  
 Surveyor to Lloyd's Register of Shipping.

FRI. 23 AUG 1940

Committee's Minute

Assigned

See fol. JE 12993



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