

# REPORT ON OIL ENGINE MACHINERY.

Received at London Office **9 APR 1951**

Date of writing Report **19th March 1951.** When handed in at Local Office **4th April 1951.** Port of **Gothenburg**

No. in Survey held at **Uddevalla** Date, First Survey **14th April, 1950** Last Survey **16th March 1951.**  
Reg. Book. Number of Visits **11**

~~90078~~ on the ~~Twin~~ Screw vessel **"ISLAS ORCADAS"** Tons Gross **9809**  
Net **5582**

Built at **Uddevalla** By whom built **Uddevallavarvet A-B.** Yard No. **112** When built **1951**  
**TSM 2973**

Engines made at **Milwaukee, U.S.A.** By whom made **Nordberg Manufacturing Company** Engine No. **23176** When made **1949**

Donkey Boilers made at **Paisley, Scotland** By whom made **A.F. Craig & Co., Ltd.** Boiler No. **23178** When made **1950**

Maximum and Brake Horse Power **2 x 4250** Owners **Argentine Government (Yacimientos Petroliferos Fiscales)** Port belonging to **Buenos Aires**

M.N. Power as per Rule **2062** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

Trade for which vessel is intended **General**

**OIL ENGINES, &c.**—Type of Engines **Heavy oil engines, Crosshead type, Solid injection** 2 or 4 stroke cycle **2** Single or double acting **Single**

Maximum pressure in cylinders **800 psi** Diameter of cylinders **29"** Length of stroke **40"** No. of cylinders **7** No. of cranks **7**

Mean Indicated Pressure **80 psi** Ahead Firing Order in Cylinders **1-7-2-5-4-3-6** Span of bearings, adjacent to the crank, measured from inner edge to inner edge **---** Is there a bearing between each crank **---** Revolutions per minute **140**

Flywheel dia. **---** Weight **---** Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) **---** Means of ignition **Compr.** Kind of fuel used **Diesel oil**

Crank Shaft, **Solid forged** dia. of journals **---** as per Rule **---** Crank pin dia. **---** Crank webs **---** Mid. length breadth **---** Thickness parallel to axis **---**  
**Semi built** as fitted **---** Mid. length thickness **---** shrunk **---** Thickness around eye-hole **---**  
**All built**

Flywheel Shaft, diameter **---** as per Rule **---** Intermediate Shafts, diameter **appd. 325 mm.** Thrust Shaft, diameter at collars **---** as fitted **---**

Tube Shaft, diameter **---** as per Rule **---** Screw Shaft, diameter **appd. 360 mm.** Is the **XXXX** shaft fitted with a continuous liner **Yes**

Bronze Liners, thickness in way of bushes **appd. 19 mm.** Thickness between bushes **appd. 14 mm.** Is the after end of the liner made watertight in the propeller boss **Yes**   
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **One length**

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **Yes**   
If two liners are fitted, is the shaft lapped or protected between the liners **---** Is an approved Oil Gland or other appliance fitted at the after end of tube shaft **No**

Propeller, dia. **4280 mm.** Pitch **3950 mm.** No. of blades **4** Material **Bronze** whether moveable **No** Total developed surface **7.37** sq. **XXXX** Metr.

Moment of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) **---** Kind of damper, if fitted **No damper fitted**

Method of reversing Engines **Compr. air** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes**  Means of lubrication **Forced** Thickness of cylinder liners **---** Are the cylinders fitted with safety valves **Yes**

Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **Lagged** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **Led to a funnel** Cooling Water Pumps, No. **3** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**

Bilge Pumps worked from the Main Engines, No. **None** Diameter **---** Stroke **---** Can one be overhauled while the other is at work **---**

Pumps connected to the Main Bilge Line (No. and size **1 ballast à 100 tons/hour, 1 bilge à 30 tons/hour, 1 transfer à 50 tons/h.** How driven **Electrically** **Steam** **Electrically**

Is the cooling water led to the bilges **No**  If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements **---**

Ballast Pumps, No. and size **1 à 100 tons/hour** Power Driven Lubricating Oil Pumps, including spare pump, No. and size **3. 225 M<sup>3</sup>/hour**

Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces **3 x 3", 4 x 2"** In forward **XXXX** pump room **1 x 2 1/2"**

In **XXXXXX** Main Pump Room **3 x 3"** In Dry Cargo Hold **2 x 2 1/2"**

Independent Power Pump Direct Suctions to the engine room bilges, No. and size **1 x 5" ballast pump, 1 x 3 1/2" bilge pump, 1 x 3" transfer pump, 1 x 6" main cooling water pumps**

Are all the bilge suction pipes in holds **XXXXXX** well fitted with strum-boxes **Yes**  Are the bilge suction in the machinery spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **Yes**

Are all Sea Connections fitted direct on the skin of the Ship **Also on stands** Are they fitted with valves or cocks **Valves**  Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates **Yes**

Are the overboard discharges above or below the deep water line **Above**  Are they each fitted with a discharge valve always accessible on the plating of the vessel **Yes**  Are the blow off cocks fitted with a spigot and brass covering plate **Yes**

What pipes pass through the bunkers **No coal bunkers**  How are they protected **---**

What pipes pass through the deep tanks **Only bilge pipe from cofferdam** Have they been tested as per Rule **Yes**

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another **Yes**

Is the shaft tunnel watertight **No tunnel** Is it fitted with a watertight door **---** worked from **---**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **---**

Main Air Compressors, No. **None**  No. of stages **---** diameters **---** stroke **---** driven by **---**

Auxiliary Air Compressors, No. **2**  No. of stages **2** diameters **11.1/4" x 4.3/4"** stroke **8"** driven by **El. motor**

Small Auxiliary Air Compressors, No. **1**  No. of stages **2** diameters **5" x 2.1/4"** stroke **3 1/2"** driven by **diesel engine**

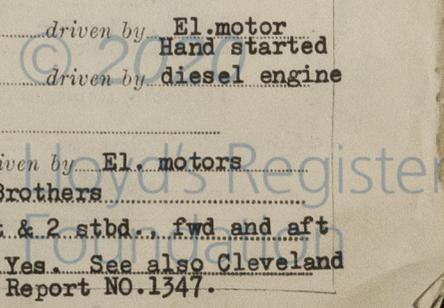
What provision is made for first charging the air receivers **The above diesel driven compressor**

Scavenging Air Pumps, No. **2 for each engine**  diameter **---** stroke **---** driven by **El. motors**

Auxiliary Engines crank shafts, diameter **---** as per Rule **---** No. **4** **Busch Sulzer Brothers** Journals **7"** Crank pins **6"** Position **ER floor, 2 port & 2 stbd., fwd and aft**

Have the auxiliary engines been constructed under special survey **Yes**  Is a report sent herewith **Yes**  See also Cleveland Report NO. 1347.

SEN  
19/4/51



**AIR RECEIVERS:**—Have they been made under survey... **Yes** ✓ State No. of ~~receivers~~ receivers 2339-40.  
 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 and cleaned... **Yes** ✓ Is a drain fitted at the lowest part of each receiver... **Yes** ✓  
 Injection Air Receivers, No. **None** ✓ Cubic capacity of each... --- Internal diameter... --- thickness... ---  
 Seamless, welded or riveted longitudinal joint... --- Material... --- Range of tensile strength... --- Working pressure... ---  
 Starting Air Receivers, No. **2 + 1** ✓ Total cubic capacity **1 à 3 M<sup>3</sup>** Internal diameter... **976 mm.** thickness... **12 mm.** appd. **17.5**  
 Seamless, welded or riveted longitudinal joint... **El. welded** Material... **S.M. Steel** Range of tensile strength... **45-52 kg/mm<sup>2</sup>** Working pressure... **28.0** Actual... **17.5**

**IS A DONKEY BOILER FITTED** **Yes** ✓ If so, is a report now forwarded... **Yes**  
 Is the donkey boiler intended to be used for domestic purposes only... **No** ✓

**PLANS.** Are approved plans forwarded herewith for shafting... **London 15.8.1949** Receivers... **London 2.2.1949** Separate fuel tanks... ---  
 Donkey boilers... --- General pumping arrangements... **London 15.3.49** Pumping arrangements in machinery space... **London 15.3.19**  
 Oil fuel burning arrangements... ---  
 Have Torsional Vibration characteristics been approved... **Yes** ✓ Date of approval... **London 12.10.1948 and 15**

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied... **Yes** ✓  
 State the principal additional spare gear supplied... **Propeller shaft**

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics.

**UDDEVALLAVARVET**  
**AKTIEBOLAG**  
*Anders Sjögren*

Manufacturer.

Dates of Survey while building  
 During progress of work in shops - - -  
 During erection on board vessel - - - **14th April, 1950 - 16th March, 1951.**  
 Total No. of visits... **11**  
 Dates of examination of principal parts—Cylinders... --- Covers... --- Pistons... --- Rods... --- Connecting rods... ---  
 Crank shaft... --- Flywheel shaft... --- Thrust shaft... --- Intermediate shafts... **5.2.1951** Tube shaft... ---  
 Screw shaft... **26.10.1950** Propeller... **26.10.1950** Stern tube... **14.4.1950** Engine seatings... **5.6.1950** Engine holding down bolts... **9.11.1950**  
 Completion of fitting sea connections... **14.4.1950** Completion of pumping arrangements... **5.3.1951** Engines tried under working conditions... **16.3.1951**  
 Crank shaft, material... --- Identification mark... --- Flywheel shaft, material... --- Identification mark... ---  
 Thrust shaft, material... --- Identification mark... --- Intermediate shafts, material... **S.M. Steel** Identification marks... **See below**  
 Screw shaft, material... **S.M. Steel** Identification mark... **LL.1512-13 Spare** / Screw shaft, material... **S.M. Steel** Identification mark... **SB 4.10.50**

Identification marks on air receivers:  

No. 2339	No. 2356	No. 2359	Intermediate shaft
LLOYD'S TEST 35 KG.	LLOYD'S TEST 45.5 KG.	LLOYD'S TEST 45.5 KG.	6859-1, 1
WP 17.5 KG.	WP 28 KG.	WP 28 KG.	Starbd. LLOYD'S 92
HL 7.9.50	HL 2.10.50	HL 5.10.50	AS 5.2.51

 Welded receivers, state Makers' Name... **Uddevallavarvet A-B.** in accordance with the Rules for Welded Pressure Vessels Class II A  
 Is the flash point of the oil to be used over 150°F... **Yes** ✓  
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with... **Yes** ✓  
 Description of fire extinguishing apparatus fitted... **Steam under donkey boilers and main engines, 8 x 12 litres foam extinguishers, 1 x 140 litres foam ext. in boiler**  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo... **Oil tanker** If so, have the requirements of the Rules been complied with... ---  
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with... **Not complied**  
 Is this machinery duplicate of a previous case... **Yes** If so, state name of vessel... **M/T "Islas Malvinas", Gothenburg Fire Entry Report No. 17660. See also Cleland, Ohio, Report No. 1377.**

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The machinery of this vessel has been fitted on board under my inspection and to my satisfaction and has been tested under full working power on a trial trip and found to work satisfactorily.  
 Material certificates in respect of the straight shafting and air receiver are forwarded separately.  
 The main engines can easily be run continuously below 60 revolutions per minute, and in accordance with the Secretary's letter dated the 12th October, 1948, and of the 15th August, 1949, a notice board has been fitted at control station, stating that the main engines are not to be run continuously below 60 revolutions per minute. No torsionograph records have been taken from the completed installation.  
 The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book with notation of +LMC 3.51, 2 donkey boilers à 150 lbs. per sq. inch, and Tail Shafts fitted with Continuous Liners.

The amount of Entry Fee ... £ --- : ---  
 Special ... **Kr. 2720:00** When applied for **4th April 1951.**  
 Start. Air Rec. Fee... **Kr. 370:00** When received... **19 --**  
 Travelling Expenses (if any) **Kr. 274:40**

*Anders Sjögren*  
 Engineer Surveyor to Lloyd's Register of Shipping

(The Committee's Minute)  
 Assigned **+LMC 3.51 Oil Eng. (with endorsement)**  
**C.L. 2 DB 150lb.**

Gothenburg Office.

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

