

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report... 30-9-49 ... 19... When handed in at Local Office... 19... Port of... Groningen

No. in Survey held at... Haarlingen ... Date, First Survey... 19-10-'48 ... East Survey... 21-9-19-49

on the... twin screw vessel "Orca" ... Tons... Gross 499.94 ... Net 362.54

Built at... Glasgow ... By whom built... Messrs Brown ... Yard No... unkn. ... When built... during war 1940/45

Owners... N.V. "Orca" ... Port belonging to... Rotterdam

Electrical Installation fitted by... (concerning conv.) W. Mulder, Groningen ... Contract No... When fitted...

Is vessel fitted for carrying Petroleum in bulk... no ... Is vessel equipped with D.F... no ... E.S.D... yes ... Gy.C... no ... Sub.Sig... no

Have plans been submitted and approved... yes ... System of Distribution... 2 wire insulated syst. ... Voltage of supply for Lighting... 220

Heating... Power... 220 ... Direct or Alternating Current, Lighting... dir. ... Power... dir. ... If Alternating Current state periodicity... 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... Generators, are they compound wound... yes ... are they level compounded under working conditions... yes

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

to negative... Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing... Have certificates of

test for machines under 100 kw. been supplied... no (see general remarks) ... and the results found as per rule... Are the lubricating arrangements and the construction

of the generators as per rule... yes ... Position of Generators... 1 at centre line a.e.; 1 at portside a.e.; 1 at port

side main eng.; 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... engine room casing in top

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... insulation board, Pertinax ... if of synthetic insulating material is it an Approved Type... 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... yes ... 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... DPDT switch

and DP fuses.

and for each outgoing circuit... DP switch and DP fuse

are compartments containing switchboards composed of fire-resisting material or lined as per Rule... yes ... Instruments on main switchboard... 4

ammeters... 4 ... voltmeters... 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 lamps conn. to "E" trough DP fuses and SP switch

switches, Circuit Breakers and Fuses, are they as per Rule... yes ... are the fuses an approved type... 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... 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

and they operate... Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule... yes

ables, are they insulated and protected as per the appropriate Tables of the Rules... yes ... if otherwise than as per Rule are they of an approved type...

the maximum fall of pressure between bus bars and any point under maximum load... 4.6% ... are the ends of all cables having a sectional area of 0.04

are inch and above provided with soldering sockets... yes ... Are paper insulated and varnished cambric insulated cables sealed at the ends...



with insulating compound or waterproof insulating tape. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage. *yes*, are cables laid under machines or floorplates. *no*, if so, are they adequately protected. *yes*. Are cables in machinery spaces, galleys, laundries, etc., lead covered. *yes* or run in conduit. State how the cables are supported and protected. *Machinery spaces: LC and NWB cable on sheet iron ground plates or surface. Cargo hold: LC and NWB cable clipped to surface and protected by sheet steel plates where necessary. Accommod. spaces: LC cable clipped to surface or wood ground.*

Are all lead sheaths, armoring and conduits effectually bonded and earthed. *yes*. Refrigerated chambers, are the cables and fittings as per Rule. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands. *yes*, where unarmoured cables pass through beams, etc., are the holes effectually bushed. *yes* and with what material. *lead*. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. *yes*. Emergency Supply, state position. *lead battery placed on boat deck* and method of control. *automatic cutout switch + fuses*. Navigation Lamps, are they separately wired. *yes* controlled by separate double pole switches. *yes* and fuses. *yes*. Are the switches and fuses in a position accessible only to the officers on watch. *yes*, is an automatic indicator fitted. *yes*. Secondary Batteries, are they constructed and fitted as per Rule. *yes*, are they adequately ventilated. *yes* what is the battery capacity in ampere hours. *Emergency battery 90 Ah; Starting battery 2 x 250 Ah*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. *yes*. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. *no*, if so, how are they protected. and where are the controlling switches fitted. are all fittings suitably ventilated. *yes* are all fittings and accessories constructed and installed as per Rule. *yes*. Searchlight Lamps, No. of. *1*, whether fixed or portable. *fixed*, are their fittings as per Rule. *yes*. Heating and Cooking, is the general construction as per Rule. are the frames effectually earthed. are heaters in the accommodation of the convection type. Motors, are all motors constructed and installed as per Rule. *yes* and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil. *yes*, if situated near unprotected combustible material state minimum distance from same horizontally and vertically. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. *no* (see general remarks) Control Gear and Resistances, are they constructed and fitted as per Rule. *yes*. Lightning Conductors, where required are they fitted as per Rule. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with. are all fuses of the cartridge type. are they of an approved type. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Are the cables lead covered as per Rule. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule. *yes*, are they suitably stored in dry situations. *yes*. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. *yes*.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	30	220	133	1100	Paxman Ric. aux. e.	Diesel oil above 150°	
	1	15	220	68	1100	Lister aux. eng.	" " " "	
	1	8	220	36	1500	PS main engine	" " " "	
EMERGENCY	1		24	35		CAV	" " " "	
ROTARY TRANSFORMER	1		24	35		CAV	" " " "	
	1		30	50		Lister aux. engine	" " " "	

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	30	1	70	133	8			
" " EQUATION	15	1	35	68	8		NJR	LC and NWB
" " "	8	1	16	36	11			
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

for charging starting batteries

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
in wheelhouse	1	4			47		
in accommodation forw.	2 x 16				76		NJR LC & NWB
	1	4			76		

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands. sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS						
NAVIGATION LIGHTS	1	2 1/2				
LIGHTING AND HEATING						
emergency lighting	1	2 1/2				NJR LC & NWB
lighting aft	1	2 1/2				
lighting midship	1	2 1/2				
lighting forward	1	2 1/2				

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P. KW	mm ²	m	INSULATED WITH.	HOW PROTECTED.
Siemens Schuckert 1450 RPM	1	3.3	10	18.1		
Mach. fabr. Esslingenwerk Constatt 1250 RPM	1	5.5	10	30.7		
to capstan	10 HP	1	10	38		
to aft cargo winch	10 HP	1	10	38	9	NJR LC & NWB
to fore cargo winch	10 HP	1	10	38	68	
to windlass	20 HP	1	10	75	91	



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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
 All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
 The foregoing is a correct description.

Muldry

Electrical Engineers.

Date 13-10-49

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....
 Minimum distance between electric generators or motors and steering compass.....
 The nearest cables to the compasses are as follows:—
 A cable carrying Ampères feet from standard compass feet from steering compass.
 A cable carrying Ampères feet from standard compass feet from steering compass.
 A cable carrying Ampères feet from standard compass feet from steering compass.
 Have the compasses been adjusted with and without the electric installation at work at full power
 Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted
 The maximum deviation due to electric currents was found to be degrees on course in the case of the
 standard compass, and degrees on course in the case of the steering compass.
 Builder's Signature. Date.....

Is this installation a duplicate of a previous case..... *no* If so, state name of vessel
 Plans. Are approved plans forwarded herewith..... *no* If not, state date of approval *15-10-1948 ; 5-5-1949*
 Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith *no [see general remarks]*
 General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.).....

This vessel was originally owned by the British Admiralty and was a landingcraft, marked "US LCF-12"; she has meanwhile been converted into a cargo ship.

The original electrical equipment has been maintained but the wiring layout has been renewed and the main switchboard has been reconstructed. During reconstruction the electrical equipment was examined and found satisfactory.

The refitting has been carried out in accordance with approved plans.

On completion the whole plant has been tried out under working conditions and found satisfactory.

This equipment is in my opinion suitable for a classed vessel.

Total Capacity of Generators..... *53 + 3* Kilowatts.

The amount of Fee £ *please see Special Survey Report.* } When applied for,19.....
 Travelling Expenses (if any) £ } When received,19.....

M. J. Talbot
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRU 27 JAN 1950*
 Assigned..... *Deferred*

5m. 4.39.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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