

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 19<sup>th</sup> Dec. 44. When handed in at Local Office No. 1x 44 Port of GLASGOW.

No. in Survey held at GLASGOW. Date, First Survey 8th Nov 1944 Last Survey 18<sup>th</sup> Dec. 1944.  
Reg. Book. (Number of Visits.....4.)

91118. on the M.V. NISO Tons {Gross 273  
Net 177

Built at BELFAST. By whom built HARLANDS WOLFF LTD. Yard No. 1198 When built 1944

Owners ANGLO-SAXON PETROLEUM CO. LTD. Port belonging to LONDON.

Electrical Installation fitted by HARLAND & WOLFF LTD. Contract No. 1198. When fitted 1944

Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. -

Have plans been submitted and approved Yes System of Distribution Bus wire Voltage of supply for Lighting 110. ✓

Heating - Power 110. ✓ Direct or Alternating Current, Lighting D.C. Power D.C. 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 Yes 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 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 Yes and the results found as per rule Yes Are the lubricating arrangements and the construction of the generators as per rule Yes Position of Generators In engine room

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 beside generators.

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 Sindanfo., if 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 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 -

D.P. Switch and fuses

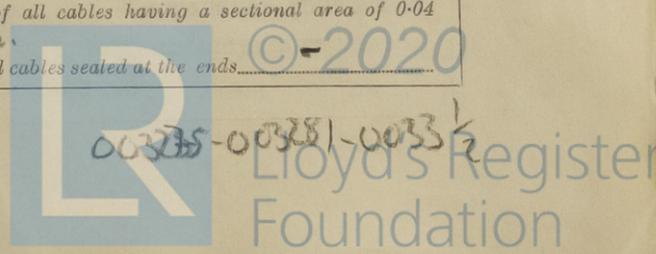
and for each outgoing circuit D.P. Switch and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule - Instruments on main switchboard 2

ammeters 2 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.

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 -, 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 Yes

Cables, 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 -, state maximum fall of pressure between bus bars and any point under maximum load 610k. are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes Are paper insulated and varnished cambric insulated cables sealed at the ends Yes



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. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. No. State how the cables are supported and protected. Main & Machinery spaces Pyrotex cable clipped to carriage plating or steelwork. Accommodation L.C. clipped to steel and woodwork.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. Yes. Refrigerated chambers, are the cables and fittings as per Rule. Yes

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 effectively 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. -

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. -, are they adequately ventilated. -

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. Yes, if so, how are they protected. Fittings in Pump Rooms installed in accordance with Rule Requirements.

and where are the controlling switches fitted. in accommodation, are all fittings suitably ventilated. Yes, are all fittings and accessories constructed and installed as per Rule. Yes. Searchlight Lamps, No. of -, whether fixed or portable. -

are their fittings as per Rule. -. 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. -. 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. Yes, are all fuses of the cartridge type. Yes

are they of an approved type. Yes. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Yes. Are the cables lead covered as per Rule. Yes. 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	110	273	675	Steam engine		
	1	30	110	273	675	Diesel engine	oil at 150°F	
EMERGENCY								
ROTARY TRANSFORMER								

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 NO. 1 (DIESEL)	30	1	0.2	273	296	36	Pyrotex Cable	
" " EQUALISER								
MAIN GENERATOR NO. 2 (STEAM)	30	1	0.2	273	296	172		
SHORE CONNECTION.		1	0.2	250	296	102		
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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							
MASTERBOARD (MIDSHIP)	2	0.15	173	2246	1576	Pyrotex	
SECTION BOX NO. 1 (WT & NAV)	1	0.1	87	191	660		
" NO. 2 (ALCOM AFT)	1	0.06	43	135	252		
" NO. 3 (ENG. ROOM MIDDLE)	1	0.1	124	191	180		
" NO. 4 (ENG. ROOM AFT)	1	0.06	81	135	132		

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	0.06	25	135	150	Pyrotex
NAVIGATION LIGHTS	2 DB 1	0.0045	10	15	150	
LIGHTING AND HEATING	DB 2	0.0145	16	57	60	
	DB 3	0.0145	27	57	12	
	DB 4	0.0145	27	57	18	
	DB 5	0.0145	14	57	360	
	DB 6	0.007	10	28	84	
	DB 7	0.0225	21	75	132	Mains Looping
	DB 8	0.0225	12	75	60	
	DB 8	0.0225	11	75	84	
	DB 10	0.0225	12	75	12	
	DB 11	0.007	13	28	180	
	DB 12	0.0045	8	15	150	
	DB 13	0.0045	6	15	60	
	DB 14	0.007	6	28	180	
	DB 15	0.0045	8	15	210	
	DB 16	0.0045	7	15	60	

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.					
TURNING GEAR	1	10	1	0.04	80	104	90
MID ACCUM VENT FAN	1	4.75	1	0.0145	39.5	57	168
AFT ACCUM VENT FAN	1	4.75	1	0.0145	39.5	57	240

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.

For **HARLAND AND WOLFF, LIMITED**

Electrical Engineers.

Date

21-12-44

*Agreen*  
 Govan Secretary.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 15 feet from w/s Motor ALTERNATOR

Minimum distance between electric generators or motors and steering compass 15 feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.1 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 10 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying 25 Ampères 12 feet from standard compass 10 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted Yes

The maximum deviation due to electric currents was found to be nil degrees on any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

For **HARLAND AND WOLFF, LIMITED**

Builder's Signature.

Date

21-12-44

*Agreen*  
 Govan Secretary.

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 25/1/44.

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith Yes

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

*The electrical equipment of this vessel has been fitted on board under special survey, tested under working conditions and found satisfactory. The materials and workmanship are good.*

*Noted*

*SRM*

15.1.45

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 28 : 10 : - When applied for, 9 JAN 1945

Travelling Expenses (if any) £ : : When received, \_\_\_\_\_

*S. G. Fiddell*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9 JAN 1945

**SEE ACCOMPANYING MACHINERY REPORT.**

Assigned \_\_\_\_\_

5m. 1.30.—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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