

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 28 SEP 1942

Received at London Office.....

Date of writing Report.....19..... When handed in at Local Office.....12/9/42..... Port of.....NEWCASTLE ON TYNE.....

No. in Survey held at.....Hebburn..... Date, First Survey.....5th June 1942..... Last Survey.....1st Sept 1942.....
Reg. Book..... (Number of Visits.....16.....)

37831 on the.....NUCULANA..... Tons { Gross.....8179.....
Net.....4767.....

Built at.....Hebburn..... By whom built.....Hawthorn Leslie & Co Ltd..... Yard No.....649..... When built.....1942.....

Owners.....Anglo Siam Petroleum Co Ltd..... Port belonging to.....London.....

Electrical Installation fitted by.....Hawthorn Leslie & Co Ltd..... Contract No..... When fitted.....1942.....

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.....No.....

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

Heating.....No..... Power.....Yes..... Direct or Alternating Current, Lighting.....Direct..... Power.....Direct..... 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

.....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.....Starboard side of engine room near main

switchboard....., 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.....Starboard side of engine room.....

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....."Pyralene"....., 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.....Double pole, double

throw, quick break knife switches and double pole fuses.....

and for each outgoing circuit.....Double pole, double throw, quick break knife switches, and

double pole fuses.....

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule.....Yes..... 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.....Lamps connected to earth via fuses & switches.....

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.....2....., 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.....

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with insulating compound — or waterproof insulating tape. Yes. 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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. Yes. State how the cables are supported and protected. In machinery spaces, centre castle passageway etc. clipped to keelson steel truss or rivet to steel work, in accommodation spaces lead covered wire clipped to wooden battens.

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. 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. Yes, are they adequately ventilated. Yes. what is the battery capacity in ampere hours. 100

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. In the centre castle passageway water tight fittings, pump rooms for tight fitting in welded steel work and where are the controlling switches fitted. midships, 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. Yes, are their fittings as per Rule. Yes. Heating and Cooking, is the general construction as per Rule. Yes, are the frames effectually earthed. Yes, are heaters in the accommodation of the convection type. Yes. 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. Yes and vertically. Yes. 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. Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule. Yes. Control Gear and Resistances, are they constructed and fitted as per Rule. Yes. Lightning Conductors, where required are they fitted as per Rule. Yes. 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	Nº1	1	25	110	227	400	Diesel motor	Oil
	Nº2	1	25	110	227	400	Steam engine	Less than 150°
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	Nº1	1	37/072	227	246	32'	V.C	L.C.A
"	EQUALISER							
"	Nº2	1	37/072	227	246	26'	V.C	L.C.A
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							
Sub main switchboard	1	37/122	238	385	600'	V.C	L.C.A+B
Section from B.I. Bridge deck	1	19/064	78	83	24'	V.R	LC
" B.I. Upper deck aft	1	7/064	29	46	17'	V.R	LC+A
" B.I. Engine room lighting	1	19/052	54	64	30'	V.R	LC+A
" B.I. " " " " " "	1	9/064	23	23	213'	V.R	LC+A
Shore Supply	1	37/072	—	246	168'	V.C	LC+A

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	...	...	...	...	...	...	1	19/064	27	23	✓	630'	V.I.R	LC+A
NAVIGATION LIGHTS	...	...	...	...	...	...	1	7/064	23	31	✓	660'	V.I.R	LC+A
LIGHTING AND HEATING	...	...	...	...	...	...		
Chart room							1	7/064	27.5	46	✓	120'	V.I.R	LC+A
Upper bridge deck							1	7/064	12.5	46	✓	69'	V.I.R	LC+A
Bridge deck (port)							1	7/064	31	46	✓	15'	V.I.R	LC+A
" (Starboard)							1	7/064	14.5	46	✓	60'	V.I.R	LC+A
Forecastle							1	19/052	5	64	✓	405'	V.I.R	LC+A+B
Portable connections							1	7/064	13	46	✓	27'	V.I.R	LC+A
Upper deck aft (Starboard) portables							1	7/029	6	15	✓	180'	V.I.R	LC+A
" " (Port) Crew							1	7/064	17	31	✓	165'	V.I.R	LC+A
" " (Starboard)							1	7/064	12	31	✓	24'	V.I.R	LC+A
Port							1	7/064	24	46	✓	241'	V.I.R	LC+A
Engine room No. 9							1	7/036	14.5	24	✓	165'	V.I.R	LC+A
" " 10							1	7/029	3.5	15	✓	120'	V.I.R	LC+A
" " 11							1	7/029	11	15	✓	150'	V.I.R	LC+A
" " 12							1	7/029	8	15	✓	73'	V.I.R	LC+A
" " 13							1	7/029	6	15	✓	200'	V.I.R	LC+A
" " 14							1	7/029	5.5	15	✓	80'	V.I.R	LC+A
Search light (cable only)							1	19/052		64	✓	680'	V.I.R	LC+A+B
ALL IMPORTANT MOTORS TO BE ENUMERATED.														
	No.	B.H.P.												
Drumming motor	1	7 1/2	1	19/084	60	43	✓	284'	V.I.R				LC+A	
Lathes	1	1 1/2	1	7/029	12	15	✓	60'	V.I.R				LC+A	
Drill	1	2	1	7/036	16	24	✓	60'	V.I.R				LC+A	
Grinder	1	3	1	7/044	25	31	✓	60'	V.I.R				LC+A	
Lat. oil pump	1	2	1	7/036	16	24	✓	150'	V.I.R				LC+A	
Fuel pump	1	1 1/2	1	7/029	14	15	✓	150'	V.I.R				LC+A	
Vent. fan (engine room)	1	4	1	7/064	33	46	✓	300'	V.I.R				LC+A	
" (bridge)	1	1/2	1	7/064	33	46	✓	195'	V.I.R				LC	
Ref. " "	1	1/2	1	3/036	4	10	✓	83'	V.I.R				LC	
Explos. compass	1	2	1	7/036	20	24	✓	110'	V.I.R				LC	



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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.

FOR R. & W. HAWTHORN, LESLIE & CO. LIMITED

Stephenson

Electrical Engineers.

Date 3rd September 1942

COMPASSES.

Minimum distance between electric generators or ~~motors~~ and standard compass 290'

Minimum distance between electric generators or ~~motors~~ and steering compass 280'

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères ^{inside} feet from standard compass 10 feet from steering compass.

A cable carrying .14 Ampères 10 feet from standard compass ^{inside} feet from steering compass.

A cable carrying 27.5 Ampères 11 feet from standard compass 14 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 every course in the case of the standard compass, and nil degrees on every course in the case of the steering compass.

FOR R. & W. HAWTHORN, LESLIE & CO. LIMITED

Stephenson

Builder's Signature.

Date 3rd September 1942

Is this installation a duplicate of a previous case Yes If so, state name of vessel NICANIA

Plans. Are approved plans forwarded herewith no If not, state date of approval 1/12/41

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 equipment

of this vessel was installed in accordance with the approved plans and the Society's rules. The materials used are of good quality and the workmanship is good. On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits and apparatus was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Noted

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29/9/42.

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... See etc. £ 24: 10: 0 When applied for, 24 SEP 1942

Travelling Expenses (if any) £ : : When received. 19

A. H. Cornwell

Surveyor to Lloyd's Register of Shipping.

FRI. 2 OCT 1942

Committee's Minute

Assigned See Nwc. J.E. 100736