

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office AUG 1942

Date of writing Report... 20th July 1942 When handed in at Local Office... 1: 8: 42 Port of... Glasgow

No. in Survey held at... Greenock Date, First Survey... 20th May Last Survey... 18th July 1942
Reg. Book. (Number of Visits... 15)

36487 on the... S.S. 'EMPIRE GALAHAD' Tons { Gross... Net...

Built at... Port Glasgow By whom built... Lithgao Ltd. Yard No... 970 When built... 1942

Owners... MINISTRY OF WAR TRANSPORT Port belonging to... GREENOCK.

Electrical Installation fitted by... The Sunderland Forge & Eng. Co. Ltd. Contract No... 970 When fitted... 1942

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

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

Heating... Power... 110 Direct or Alternating Current, Lighting... D.C. Power... D.C. If Alternating Current state frequency... Prime Movers,

has the governing been tested and found efficient when the whole 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... Yes, 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... 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... In engine-room near 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... Sindanyo, 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...

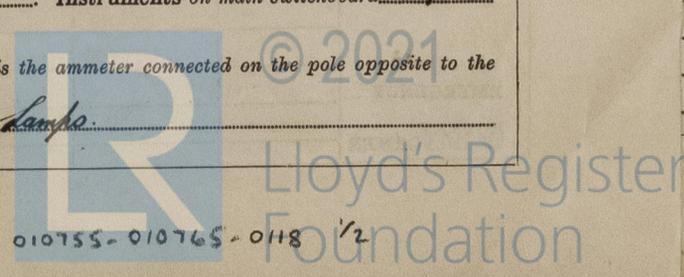
Double pole circuit breaker fitted with overload and reverse current trips.

and for each outgoing circuit... Double pole knife pattern switches, and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Instruments on main switchboard... 7

ammeters... 3 voltmeters... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection... SEE REMARKS. 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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes.

REMARKS 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 _____ 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 exposed ends Yes 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 _____, if so, are they adequately protected _____ Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected Mains: V.I.R. in galvanised pipe.
Machinery space: V.I.R. in conduit.
Accommodation: L.C. clipped to woodwork.

Are all lead sheaths, armouring 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 effectively bushed Yes and with what material Fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position _____ and method of control _____ 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 _____, 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 _____, 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 _____ 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 Yes Received 21/9/42 L.Y. 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 _____ If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type _____ 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 megger 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	33	110	300	640	STEAM ENGINE		
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	33	1	37/083	300	296	60	V.C.	L.C.
" " EQUALISER		1	19/083		191	60	V.C.	L.C.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS						

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS		1	7/064	15	46	400 V.I.R. IN CONDUIT
NAVIGATION LIGHTS						
LIGHTING AND HEATING						
CREW & CARGO AFT		1	7/064	22.6	46	400 V.I.R. IN CONDUIT
ENGINEERS LIGHTING		1	7/064	38.5	46	150 V.I.R. IN CONDUIT
ENGINE-ROOM LIGHTING		1	7/044	21	21	60 RUBBER L.C.
SALOON, NAVIGATION & FWD CARGO LTS.		1	19/064	47	83	350 V.I.R. IN CONDUIT.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
REFRIG. CIRC. PUMP	1	10	19/084	80	135	60 V.C.	L.C.
REFRIG. FAN N° 1	1	12.5	19/083	100	118	350 RUBBER	L.C.
REFRIG. FAN N° 2	1	12.5	19/083	100	118	350 RUBBER	L.C.
REFRIG. FAN N° 3	1	8.25	19/064	66	83	190 RUBBER	L.C.
REFRIG. FAN N° 4	1	8.25	19/064	66	83	190 RUBBER	L.C.
REFRIG. MACHINE	1	2.5	7/044	21.7	31	360 V.I.R.	IN CONDUIT.

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.

J. C. Stankel
P. Eng. THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers. Date 27th July 1942.

COMPASSES.

Minimum distance between electric generators or motors and standard compass 40 FEET.

Minimum distance between electric generators or motors and steering compass 35 FEET.

The nearest cables to the compasses are as follows:-

A cable carrying 2 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 7.3 Ampères 6 feet from standard compass 6 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 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.

J. M. Gardiner Secretary Builder's Signature. Date 29/7/42.

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

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

The electrical installation has been fitted on board under special survey, tested under working conditions and found satisfactory, with the exception that the ammeter shunts are to be fitted on the pole opposite to the equalising connection and the reverse current trips to be tested. All the requirements of the approved plans and M.O.W.T specifications have been carried out. The materials and workmanship are good.

Job 1/8/42

Noted
10/8/42

Total Capacity of Generators 99 Kilowatts.

The amount of Fee ... £ 38 : 8 :
Travelling Expenses (if any) £ 1 : 14/7

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

Committee's Minute GLASGOW 4 AUG 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT

2m.10.38. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

