

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 22 MAY 1942

Received at London Office.....

Date of writing Report. 15th May 42 When handed in at Local Office. 21 MAY 1942 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 20th Mar. Last Survey 11th May, 1942
Reg. Book. Suppt. (Number of Vols.....)

36453 on the S.S. "EMPIRE KEATS" Tons {Gross... 7035
Net... 4949

Built at Sunderland By whom built. Short Bros, Ltd. Yard No. 470 When built. 1942

Owners. Ministry of War Transport Port belonging to. Sunderland

Electrical Installation fitted by. Campbell & Woodward, Ltd. Contract No. 470 When fitted. 1942

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

Have plans been submitted and approved. Yes System of Distribution 2 wire mixed Voltage of supply for Lighting. 110

Heating. Power 110 Direct Alternating Current, Lighting Yes Power Yes 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

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. Engine room starboard side

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 starboard side

on aft bulkhead.

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. "Economy Linoleum" 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. Description of Main Switchgear for each generator and arrangement of equaliser switches. Double pole

swing breaker with overload and time lag on each pole

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

switch and double pole fuse.

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

ammeters. 2 wo 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. Elamp coupled to E through 2 wo. fuses

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. 160A, are the reversed current

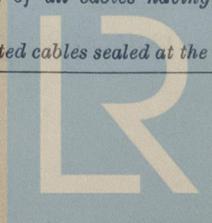
protection devices connected on the pole opposite to the equaliser connection. have they been tested under working conditions, and at what current

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. 44.44, 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 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 No, 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 V.I.R. cables run in heavy galvanized screwed conduit in 'twinducks' and in machinery spaces: L.C.B. cables clipped to wood grounds on or surface in accommodation.

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 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 Yes and method of control Yes.

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 Yes.

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 Yes and where are the controlling switches fitted Yes, are all fittings suitably ventilated Yes.

are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of Yes, 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	2	15	110	136.5	600	Single expanded steam engines		
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 GENERATORS	2 x 15	1	19/088	136.5	191	364.	V.C.	L.C.B.
" " EQUALISER								
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							
Saloon Section Board	1	19/044	26	53	300	V.I.R.	In conduit
Engine Room Section Board	1	19/044	27	53	8	do.	do.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	15	46	360	V.I.R.	In conduit L.C.B.
NAVIGATION LIGHTS	1	7/044	6	31	360	do.	do.
LIGHTING AND HEATING	All. fuses to nav. ab. fitted from Prod. Cargo Eq. ab.						
Saloon Eq. ab.	1	7/044	8	31	12	V.I.R.	L.C.B.
Capt's Eq. ab.	1	7/036	3	24	50	do.	do.
Prod. Cargo Eq. ab.	1	7/036	9	24	90	do.	do.
E.S.D. Prod.	1	7/036	6	24	300	do.	In conduit
Engin'rs app. Cargo ab. off. Engrs. ab.	1	7/064	17	46	100	do.	do.
App. Eq. ab.	1	7/064	10	46	300	do.	do.
Engin'rm. Eq. ab.	1	7/044	18	31	20	do.	do.

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.
			No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Rapid. Trp.	1	2	1	7/044	17	31	300	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.

Thos Meads

Electrical Engineers.

Date *16th May 1942*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *132 feet*

Minimum distance between electric generators or motors and steering compass *128 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *on the feet from* standard compass *7* feet from steering compass.

A cable carrying *.14* Ampères *7* feet from standard compass *on the 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 *Every* course in the case of the standard compass, and *Nil* degrees on *Every* course in the case of the steering compass.

FOR SHORTR BROTHERS LIMITED.

Norman Blakeney

Builder's Signature.

Date *21 May 1942*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *"Empire Newton"*

Plans. Are approved plans forwarded herewith *Yes* If not, state date of approval *13. 11. 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 electrical*

equipment of this vessel has been installed under special survey and in accordance with the approved plans and with the specification. The materials used are of good quality and the workmanship is good. On completion the equipment was run under working conditions with satisfactory results, the protective devices of the circuit breakers were operated and adjusted and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a closed vessel.

*Noted
26/5/42*

Total Capacity of Generators *30* Kilowatts.

The amount of Fee ... £ *28 : 2/6* :
 (incl. Sundry)
 Travelling Expenses (if any) £ : :
 When applied for, 1.9.41 and 19.4.42
 When received,19.....

G. Anterson

Surveyor to Lloyd's Register of Shipping.

TUE 2 JUN 1942

Committee's Minute

Assigned *See A/c. J.E. 33398*

5m.4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minutes.)

