

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

13 SEP 1945

Date of writing Report..... 3/9/45 Received at London Office.....
When handed in at Local Office..... Port of NEWCASTLE-ON-TYNE

No. in Survey held at HEBBURN-ON-TYNE Date, First Survey (1945) May 21st Last Survey Aug 24th
Reg. Book. (Number of Visits 14)

on the M.V. "EMPIRE NEPTUNE"

Tons { Gross 8285
Net 4755

Built at HEBBURN-ON-TYNE By whom built HAWTHORN LESLIE & CO. LTD. Yard No. 666 When built 1945
HIS MAJESTY, REPRESENTED BY
Owners THE MINISTER OF WAR TRANSPORT.

Port belonging to SOUTH SHIELDS

Electrical Installation fitted by HAWTHORN, LESLIE & CO. LTD. Contract No. 666 When fitted 1945

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 TWO WIRE INSULATED 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 grid of 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

SHORTEST SWITCHBOARD TO CIRCUIT BOARD 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

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 INTEROMINT, 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 effectively 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 CHANGE-OVER KNIFE SWITCH & DOUBLE POLE FUSES FOR NO. 1 GENERATOR.

DOUBLE POLE KNIFE SWITCH & DOUBLE POLE FUSES FOR NO. 2 GENERATOR.

and for each outgoing circuit DOUBLE POLE CHANGE-OVER SWITCH & DOUBLE POLE FUSES. 6.C.

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 EARTH LAMPS CONNECTED TO E THROUGH SWITCHES AND 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, 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, 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. YES. Is 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. State how the cables are supported and protected. ALONG FORE & AFT GANGWAYS, PYROTEX CABLES IN MACHINERY SPACES & ALONG FORE & AFT GANGWAYS, CENTRECASTLE & F.C.L. CABLES RUN IN WOOD CLEATS BOLTED TO INVERTED CHANNEL PLATE.									
IN ACCOMMODATION:- LEAD COVERED CABLES CLIPPED TO WOOD GROUNDS.									
IN MACHINERY SPACES ETC:- CABLES CLIPPED TO TRAY PLATES.									
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. TYPICAL POSITION OF LIGHTING IN ENGINE ROOMS AND BOILER ROOMS.									
and method of control. NAVIGATION - 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. what is the battery capacity in ampere hours. -									
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. MOUNTED IN WELDED STEEL ENCLOSURES WITH GLAZED APERTURES.									
and where are the controlling switches fitted. IN FUSE BOXES ON BRIDGE DECK. 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. YES. 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	Kilowatts.	Volts.	Ampères.	RATED AT	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE		
MAIN ...	1	30	110	272	675	SINGLE CYL. STEAM ENGINE	Fuel Used.	Flash Point of Fuel.	
	1	30	110	272	675	DIESEL			ABOVE 150° F.
EMERGENCY ...									
ROTARY TRANSFORMER									
GENERATOR CABLES.									
DESCRIPTION.	KILOWATTS.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.			
MAIN GENERATORS ...	30	1	0.2	272	296	60	MINERAL	COPPER-COVERED.	
" " 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.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins. or sq. mm.	In the Circuit.	Rule.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...										
W/T. & NAVIGATION (ALTERNATIVE SUPPLY) S.B.1	1	19/064	31.8	135	630	V.C.	L.C.A.			
MIDSHIP ACCOMMODATION L.T.S.	1	19/064	113.5	135	39	V.C.	L.C.			
CREW ACCOMMODATION L.T.S. IN POOP.	1	0.04 SQ.IN.	75.6	104	171	MINERAL	COPPER-COVERED.			
ENGINE ROOM LIGHTING.	1	0.04 "	58.6	104	30	MINERAL	COPPER-COVERED.			
ENGINE ROOM MOTORS.	1	0.06 "	72.3	135	132	MINERAL	COPPER-COVERED.			
MIDSHIP ACCOMMODATION L.T.S.	1	7/064	53.1	75	120	V.C.	L.C.			
MIDSHIP SWITCHBOARD.	2	0.15 SQ.IN.	250.5	246	570	MINERAL	COPPER-COVERED.			
LIGHTING AND HEATING, ETC., CABLES.										
WIRELESS ...	1	19/064	30	135	120	V.C.	L.C.			
NAVIGATION LIGHTS ...	1	7/036	1.8	28	144	V.C.	L.C.			
LIGHTING AND HEATING ...						ALTERNATE SUPPLY FROM SECTION BD. NO. 1 FROM MAIN SW. BOARD.				
MIDSHIP ACCOMMODATION L.T.S.	1	7/064	245/35.1	75	81/15	V.C.	L.C.			
" " "	1	7/044	19.4	42	48	V.C.	L.C.			
CREW ACCOMMODATION L.T.S. IN POOP.	1	7/064	20.6	75	165	V.C.	L.C.			
" " "	1	7/044	19.6	42	15	V.C.	L.C.			
" " ", POOP DK.	1	0.035"	56.7	87	195	MINERAL	COPPER-COVERED.			
ENGINE ROOM LIGHTING	1	0.0045"	10.9/9.3	15	180/30	MINERAL	COPPER-COVERED.			
" " "	1	0.007"	14.7	28	210	MINERAL	COPPER-COVERED.			
FORECASTLE LIGHTING.	1	0.0225	6	75	420	MINERAL	COPPER-COVERED.			
PORTABLE CONN'TS. MIDSHIPS.	1	7/044	13.1	42	111	V.C.	L.C.			
PORTABLE CONN'TS. AFT.	1	0.0045"	6.9	15	180	MINERAL	COPPER-COVERED.			
SHORE SUPPLY - SWITCHBOARD TO CONN'TS. BOX	1	0.15"	246	246	168	MINERAL	COPPER-COVERED.			
MOTOR CABLES.										
ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.								
LATHE.	1	1	0.007"	10.3	28	60	MINERAL	COPPER-COVERED.		
DRILLING MACHINE.	1	2	1	0.007"	18.2	28	60	MINERAL	COPPER-COVERED.	
GRINDING MACHINE.	1	2	1	0.007"	17.4	28	60	MINERAL	COPPER-COVERED.	
LUBRICATING OIL PURIFIER.	1	2	1	0.01"	17.2	42	150	MINERAL	COPPER-COVERED.	
LUBRICATING OIL PURIFIER.	1	2	1	0.01"	17.2	42	225	MINERAL	COPPER-COVERED.	
STANDBY FUEL OIL SERVICE PUMP.	1	1	1	0.007"	9.2	28	201	MINERAL	COPPER-COVERED.	
TURNING MOTOR.	1	7.5	1	0.06"	60	135	204	MINERAL	COPPER-COVERED.	
VENT. FAN MOTOR - NAV. BRIDGE	1	4	1	7/064	33	75	207	V.C.	L.C.	
VENT. FAN MOTOR - ENGINE CASING	1	4	1	0.0225	33	75	300	MINERAL	COPPER-COVERED.	
VENT. FAN MOTOR - BOAT DK. AFT	1	0.5	1	7/029	5	15	120	V.C.	L.C.	
VENT. FAN FOR REFRIGERATION COMP.	1	-	1	3/036	2	10	165	V.C.	L.C.	
PANTRY FAN - NAV. BRIDGE	1	0.09	1	3/036	0.8	10	126	V.C.	L.C.	
GRAVITY DAVIT MOTOR.	4	2	1	7/044	15.7	42	168/240	V.C.	L.C.	
GALLEY EXH. FAN.	1	0.2	1	3/036	1	10	186	V.C.	L.C.	
BOOSTER PUMP FOR H.W. SERVICES.	1	0.25	1	3/036	2	10	75	V.C.	L.C.	
BOOSTER PUMP FOR H.W. SERVICES	1	0.25	1	0.035" (2c)	2	10	30	MINERAL	COPPER-COVERED.	
POTATO PEELING MACHINE.	1	-	1	7/029	6	15	210	V.C.	L.C.	
DOMESTIC REFRIGERATOR.	1	0.5	1	3/036	5	10	60	V.C.	L.C.	
GALLEY BLOWER	1	0.25	1	7/029	2.6	15	130	V.C.	L.C.	

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

Cottingham

Electrical Engineers.

Date 28/8/45

COMPASSES.

17 FEET.

Minimum distance between electric generators or motors and standard compass

15 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères inside feet from standard compass — feet from steering compass.

A cable carrying .14 Ampères — inside 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 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 (1) EVERY course in the case of the standard compass, and .nil degrees on (2) EVERY course in the case of the steering compass.

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

Builder's Signature.

Date 28/8/45

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 20/8/45

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

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

The equipment of this vessel has been installed in conformity with the Society's Rules and Regulations, and the arrangements are in accordance with, or equivalent to those shown on the approved plan.

Materials used are of good quality and the workmanship is satisfactory.

On completion the insulation resistance of the installation was good and the generators operated under normal working conditions with satisfactory results.

The equipment as installed is in my opinion suitable for a

clean vessel.

Total Capacity of Generators

60 Kilowatts.

London.

The amount of Fee £ 35 : 17 : 6

When applied for,

11 SEP 1945

14 AUG 1945

When received.

31 AUG 1945

Surveyor to Lloyd's Register of Shipping.

A. A. Dimond.

Committee's Minute

5 OCT 1945

Assigned

See H. Machy. Rst.