

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 10 OCT 1942

Date of writing Report 28th Sept. 42 When handed in at Local Office 6. 10. 42 Port of Belfast

No. in Survey held at Reg. Book. Date, First Survey 7. May Last Survey 29 Sept 1942 (Number of Visits 6)

168516 on the M.V. Empire Spenser Tons {Gross 8194 Net 4776

Built at Belfast By whom built Messrs Harland & Wolff Ltd Yard No. 1079 When built 1941/2

Owners Ministry of Shipping Port belonging to Belfast

Electrical Installation fitted by Messrs Harland & Wolff Ltd Contract No. 1079 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. no Sub.Sig. no

Have plans been submitted and approved yes System of Distribution Two wire system 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 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 none 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 motor 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 on platform, starboard side of motor 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 Interohm, 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 outgoing switches one 300 AMP

double pole change over knife switch, slow break with 250AMP fuse on each pole

and for each outgoing circuit double pole change over knife switches with fuses on each pole

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 two earth lamps with two way and off switch

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

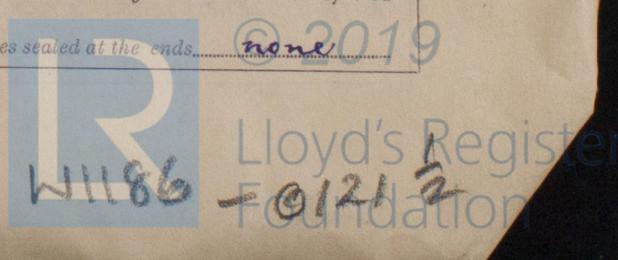
protection devices connected on the pole opposite to the equaliser connection, have they been tested under working conditions, and at what current

did they operate Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule yes

ables, 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

ate maximum fall of pressure between bus bars and any point under maximum load 4.5, 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 none



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. yes, if so, are they adequately protected. yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered L.S.A.B. or run in conduit. —. State how the cables are supported and protected. L.S.A.B. cables run in steel channel under fore and aft gangways; duplicate circuits L.S.A.B. cables run in plumbers piping along deck, machinery spaces L.S.A.B. cable on plating; accommodation L.C. cable; tween deck spaces L.C. cable in conduit.

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. sheet lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. —. 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. —. 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, weather proof. 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. flameproof fittings (in pump room) and where are the controlling switches fitted. midship 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. yes.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. none. 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. 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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN	2	25	110	227	600	STEAM ENGINE	—	—
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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	25	1	37/103	227	240	45	RUBBER	L.S.A.B.
" " EQUALISER								
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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							
SECTION BOX NO. 1 FORD & MIDSHIP LIGHTING	1	37/064	90	130	620	RUBBER	L.S.A.B.
" " 2 PORTABLE CONNECTIONS	1	19/052	18	64	180	"	"
" " 3 AFT LIGHTING	1	19/052	44.7	64	168	"	"
" " 4 MOTOR ROOM LIGHTING	1	19/044	50.5	53	90	"	"
" " 5 ACCOMMODATION VENT FANS	1	19/064	52	83	150	"	"
" " 5 ENGINE ROOM VENT FANS	1	19/064	70	83	210	"	"
DIST. BOX M.I. MOTOR ROOM MOTORS	1	19/064	46.3	83	250	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS (DUPLICATED)	1	19/064	23	83	675	RUBBER	L.S.A.B.
NAVIGATION LIGHTS (DUPLICATED)	1	7/029	2	15	675	"	"
LIGHTING AND HEATING DIST. BOX NO. 1	1	7/052	31	37	90	"	L.C.
DIST. BOX NO. 2 LIGHTING ACCOMMODATION	1	7/029	9.5	15	50	"	"
" " NO. 3	1	7/044	31.5	31	28	"	"
" " NO. 4	1	7/036	14	24	28	"	"
" " NO. 5 PORTABLE CONNECTIONS FORD	1	7/044	11.5	31	460	"	L.S.A.B.
" " NO. 6 LIGHTING FOCUSLE	1	7/044	4.0	31	320	"	"
" " NO. 7 PORTABLE CONNECTION AFT	1	7/029	6.5	15	50	"	L.C.
" " NO. 8 LIGHTING ACCOMMODATION AFT	1	7/044	23.2	31	195	"	"
" " NO. 9	1	7/044	21.5	31	30	"	"
" " NO. 10 LIGHTING MOTOR ROOM	1	7/036	13	24	140	"	L.S.A.B.
" " NO. 11	1	7/036	8	15	20	"	"
" " NO. 12	1	7/029	8.5	15	140	"	"
" " NO. 13	1	7/029	8.5	15	20	"	"
" " NO. 14	1	7/029	5	15	150	"	"
" " NO. 15	1	7/029	7.5	15	30	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.					
TURNING MOTOR	1	10	1	19/064	80	83	120 RUBBER L.S.A.B.
WORKSHOP MOTOR	1	3.0	1	7/044	26	31	115 " "
F.O. PURIFIER	1	3.0	1	7/044	25.1	31	180 " "
STANDBY P.O. PUMP	1	1.75	1	7/036	15.9	24	165 " "
LUB. OIL PURIFIER	1	2.5	1	7/036	21.3	24	180 " "
SUPPLY FAN NO. 1 (FORD ACCOMMODATION)	1	3.0	1	7/064	26	46	480 " L.S.A.B. & L.C.
" " NO. 2 (AFT ACCOMMODATION)	1	3.0	1	7/044	26	31	80 " L.S.A.B.
32 1/2 ENGINE ROOM FAN NO. 1	1	4.0	1	7/064	35	46	125 " "
" " " " NO. 2	1	4.0	1	7/064	35	46	110 " "

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.



Electrical Engineers. Date.....

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... eighteen feet

Minimum distance between electric generators or motors and steering compass..... twenty feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.13 Ampères on feet from standard compass 8 feet from steering compass.

A cable carrying 0.13 Ampères 8 feet from standard compass on feet from steering compass.

A cable carrying 17 Ampères 8 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, and calibrated with S.G. on and off

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 no degrees on any course in the case of the

standard compass, and no degrees on any course in the case of the steering compass.



Builder's Signature. Date.....

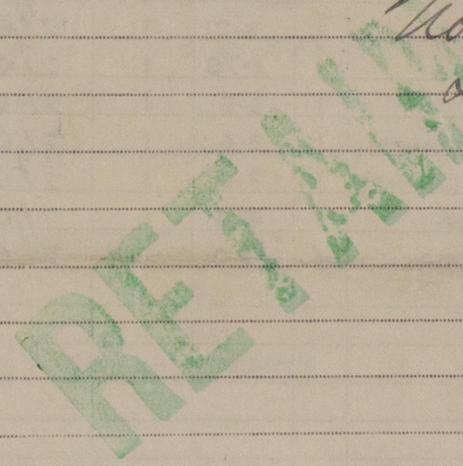
Is this installation a duplicate of a previous case yes If so, state name of vessel EMPIRE CHAPMAN. (Belfast Rpt No 13281).

Plans. Are approved plans forwarded herewith yes. If not, state date of approval.....

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 in accordance with the approved plans and Secretary's letters, tested under full working conditions and found satisfactory. The materials and workmanship are good.

*Noted
J.P.
12/10/42*



Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 27: 10: 8 : 10 : 19 : 42
 due Liverpool 13-15-0
 due Belfast 13-15-0
 Travelling Expenses (if any) £ : : :
 When applied for, 19.....
 When received, 19.....

A. Haffner & S. Shaw.
 Surveyors to Lloyd's Register of Shipping.

Committee's Minute TUE 20 OCT 1942

Assigned See je machy rll.

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