

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

11 JUN 1946

Received at London Office

Date of writing Report 28-5-1946 When handed in at Local Office 5 JUN 1946 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 27-11-45 Last Survey 30-5-1946
Reg. Book. (Number of Visits 4)

on the S.S. "WAVE KNIGHT"

Tons Gross 8187
Net 4562

Built at Sunderland By whom built Sir James Laing & Sons Ltd Yard No. 764 When built 1946

Owners Admiralty Port belonging to London

Electrical Installation fitted by Sunderland Forge & Engineering Co. Ltd. Contract No. 764 When fitted 1946

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 insulated Voltage of supply for Lighting 110

Heating Power 110 Direct or 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,

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 on generator flat at aft L.P. Bolers

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 angle-iron framework 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 Gray "Sindumpo" 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 switches a double-pole, simple-

throw, quick-break knife switch and double-pole fuse.

and for each outgoing circuit a 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 Yes Instruments on main switchboard Two

ammeters Two 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 E.lamps coupled to E through switches & 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 > 6.0, are the ends of all cables having a sectional area of 0.01

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 no. Are cables in machinery spaces, galleys, laundries, etc., lead covered yes or run in conduit no. State how the cables are supported and protected in machinery spaces, along deck gangways, & accessible, V.C.L.C.R.T.B. cables clipped to solid steel bracing or perforated metal tray: in accommodation L.C. cables clipped on the surface and protected as required by metal or wooden guards.

Are all lead sheaths, armoring 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 8-12V lights placed in engine room and boiler room. and method of control Battery with 20.7V battery operating on failure of either main supply or E.C. fuses. 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 2 of 80 A.H.

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 "Vign" flameproof lighting fittings installed in accessible part about deck spaces. and where are the controlling switches fitted in officer accommodation, are all fittings suitably ventilated yes.

are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of 2 x 10" Admiralty pattern portable, are their fittings as per Rule yes. Heating and Cooking, is the general construction as per Rule no.

are the frames effectually earthed no, are heaters in the accommodation of the convection type no. 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 no and vertically no. 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 no.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing no. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule no. Control Gear and Resistances, are they constructed and fitted as per Rule yes. Lightning Conductors, where required are they fitted as per Rule no. 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	30	110	273	685	Single Cylinder Vertical 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 GENERATOR	No. 1	30	1 37.083	273	296	84	V.C.	L.C. on steel plate
"	No. 2	30	1 37.083	273	296	102	V.C.	L.C.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
"								

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							
Bridge Section Panel - S.1.	1	19/083	50	191	759	V.C.	L.C. on B.
Midship " - S.2.	1	37/072	52	244	654	"	"
Aft " - S.3.	1	19/083	40	191	270	"	"
Engine Room " - S.4.	1	7/064	32	75	270	"	L.C.
" " " - S.5.	1	7/044	30	42	270	"	"

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	off. S.1.	1	7/064	20	75	119	V.C.	L.C.
NAVIGATION LIGHTS	off. S.1.	1	7/036	10	24	30	V.I.R.	L.C.
LIGHTING AND HEATING	S.2.	Alternative supply through C.D.S. in wheelhouse.						
Bridge lighting DB. D-2	off S.1	1	7/036	8	24	126	V.I.R.	L.C.
Upper " " D.3	" S.2.	1	7/064	12	75	114	V.C.	"
Bottom " " Port. D.4	" "	1	7/044	11.5	31	120	V.I.R.	"
" " Star. D.5	" "	1	7/044	8	31	111	"	"
Hydr. Compressor Supply	" "	1	7/036	14	24	21	"	"
Emergency W/T.	" "	1	7/064	-	75	33	V.C.	"
Large Ig. DB. D-6	" "	1	7/036	16	24	71	V.I.R.	"
Port Wg. Ig. DB. Port. D-7	" "	1	7/052	7.5	37	84	"	"
" " Star. D.8 & D.16.	" "	1	7/052	9	37	84	"	"
Aft Large DB. D-12	" "	1	7/036	10	24	128	"	"
Upper BR DB Port. D-9.	" "	1	7/052	6	37	60	"	"
" " Star. D-10	" "	1	7/052	7	37	102	"	"
" " Aft. D-11.	" "	1	7/044	5	31	198	V.C.	"
Engine & Boiler Room Ig. D-13	" "	1	7/044	18	42	24	V.C.	"
" " D-14	" "	1	7/044	20	42	27	"	"
Deck lighting D-15	" "	1	7/036	10	24	111	V.I.R.	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Turning Motor	1	16	1	19/064	12.4	135	258	V.C. L.C.
Engine Room Vent Fan Port	1	3	1	7/044	26	42	312	" "
" " " - Star.	1	3	1	7/044	26	42	234	" "
Oil Pump No. 1.	1	5	1	1/064	5.6	10	96	" "
" " " - 2.	1	5	1	1/064	5.6	10	114	" "
Waterlift Motor	1	3	1	7/044	26	42	72	" "
Boat Winch - Port aft.	1	2	1	7/036	18	28	90	" "
" " Star. "	1	2	1	7/036	18	28	207	" "
" " Mid. Port	1	2	1	7/036	18	28	84	" "
" " Star.	1	2	1	7/036	18	28	84	" "
Staircase Fan.	1	3	1	7/044	26	42	132	" "
" Aft.	1	3	1	7/044	26	42	132	" "
" Midship	1	3	1	7/044	26	42	66	" "
Painting Behaviour Fan.	1	5	1	3/036	5.6	10	120	" "

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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

H. Wilson

Electrical Engineers.

Date 29/5/46

COMPASSES.

Minimum distance between electric generators or motors and standard compass 18'

Minimum distance between electric generators or motors and steering compass 11'

The nearest cables to the compasses are as follows:—

A cable carrying .15 Ampères 7 feet from standard compass *on the* feet from steering compass.

A cable carrying .15 Ampères *on the* feet from standard compass 7 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 *Wey* course in the case of the

standard compass, and *Nil* degrees *and on bearing* course in the case of the steering compass.

SIR JAMES LAING & SONS, LIMITED

Builder's Signature.

Date

31 May 1946

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *S.S. "EMPIRE HERALD"*

Plans. Are approved plans forwarded herewith *No.* If not, state date of approval *15.2.46 - Revised plans.*

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 in accordance with the approved plans and amendments thereto. The materials used are of good quality and design and the workmanship is good: on completion the equipment was operated on board with satisfactory results and the insulation resistance of all circuits was measured and found good: this equipment is in my opinion suitable for a closed vessel.

Notes

Flu 26.6.46

Total Capacity of Generators *(2x30) 60* Kilowatts.

The amount of Fee ...

£ *20.00*

When applied for *6 JUN 1946*

Travelling Expenses (if any) £

When received

L.D. Wilson
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI, 28 JUN 1946

Assigned

See F.E. machy.spt.

5m.4.33.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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