

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 APR 1942

Received at London Office.....

Date of writing Report 28<sup>th</sup> March 1942 When handed in at Local Office 20:4:42 Port of Glasgow 1<sup>st</sup> April

No. in Survey held at Port Glasgow Date, First Survey 12.4.40 Last Survey 30<sup>th</sup> March 1942  
Reg. Book. (Number of Visits.....) 33

on the Twin screws minesweeper H.M.S. "LLANDUDNO" Tons {Gross.....  
Net.....

Built at Port Glasgow By whom built Wm. Hamilton & Co. Ltd. Yard No. J1029 When built 1942

Owners Admiralty Port belonging to.....

Electrical Installation fitted by The Sunderland Forge & Co. Ltd. Contract No. J.1029 When fitted 1942

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

Have plans been submitted and approved Yes System of Distribution Two wire Voltage of supply for Lighting 220

Heating 220 Power 220 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 no,

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

positive 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 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 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 micarised bars, 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 D.P. Circuit

Breakers for main generators fitted with O.L. and R.C. trips

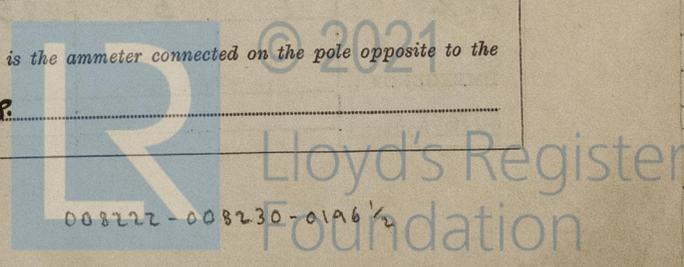
D.P. switch and fuses for Aux. generator.

and for each outgoing circuit D.P. switch and fuses.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule..... Instruments on main switchboard 3

ammeters 3 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.



Switches, Circuit Breakers and Fuses, are they as per Rule Adm Patt are the fuses an approved type Adm Patt are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection —, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Adm Patt. 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 3.5 volts, 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 — 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 No, 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 L. C. Clipped

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 lead or A.P. brass ferrules. 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 Yes, are they adequately ventilated 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 Yes, if so, how are they protected Special A.P. Magazine fittings

and where are the controlling switches fitted outside space, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 1, whether fixed or portable fixed, 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 Adm Patt. 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. 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 —, 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 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 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	30	225	133	400	steam engine		
AUX.	1	5	225	22.2	1000	I. C. engine	oil 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.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	30	1	.15	133	152	30	Rubber	L. C.
" " EQUALISER ...								
AUX. GENERATOR	5	1	.007	22	24	70	"	"
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 ...								
POWER FORWARD I		1	.06	52	83	100	Rubber	L. C.
POWER FORWARD II		1	.04	41.8	64	120	"	"
POWER AFT.		1	.04	21.6	64	40	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.		
WIRELESS ...		1	.04	60	64	90	Rubber	L. C.
NAVIGATION LIGHTS ...		1	.0045	10	15	120	"	"
LIGHTING AND HEATING ...								
RESTORABLE LIGHTING		1	.04	52	64	80	"	"
E. R. LIGHTING		1	.007	9	24	30	"	"
STAYOUT LIGHTING		1	.007	13	24	120	"	"
20" S/L PROTECTOR		1	.1	86	118	150	"	"
ASDIC		1	.007	10	24	190	"	"
S/A		1	.04	50.6	64	150	"	"

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.		
L. P. M-G <del>st</del>	1	2	1	.003	6	10	90	Rubber	L. C.
F. W. PUMP	1	1.25	1	.003	5	10	180	"	"

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.

Electrical Engineers.

Date 16.4.42

J. Shanks

COMPASSES.

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

Minimum distance between electric generators or motors and steering compass..... 25 feet

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères — feet from standard compass led into feet from steering compass.

A cable carrying .2 Ampères — feet from standard compass 4 feet from steering compass.

A cable carrying 86 Ampères — feet from standard compass 15 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 — degrees on — course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

For William Hamilton & Co., Limited,

H. Williams

Builder's Signature.

Date 17 April 1942

General Manager.

Is this installation a duplicate of a previous case..... Yes If so, state name of vessel H.M.S. "TENBY"

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

The electrical equipment of the vessel has been fitted on board under special survey in accordance with the Admiralty Plans, and Specifications, tested under full working conditions, and found satisfactory. The materials, and workmanship are good.

Noted  
L.F.  
28/4/42

20/4/42

Total Capacity of Generators..... 65 Kilowatts.

The amount of Fee ... £ : : When applied for, .....19.....  
Travelling Expenses (if any) £ : : When received, .....19.....

J. C. Wright

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 21 APR 1942

Assigned See C&K S.C. Rpt No. 21496.

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

