

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE 'PROPULSION OF THE VESSEL)

18 MAR 1943

Received at London Office.....

Date of writing Report... 5th Mar 1943 When handed in at Local Office... 17 MAR 1943 Port of... Sunderland

No. in Survey held at... Sunderland Date, First Survey... 19th Nov 42 Last Survey... 9th Mar 1943 Reg. Book. (Number of Visits... 20...)

on the H.M. TRAWLER "GRUINARD" Tons { Gross... 453 Net... 146

Built at... Sunderland By whom built... John Crow & Sons, Ltd. Yard No... 205 When built... 1943

Owners... The Admiralty Port belonging to.....

Electrical Installation fitted by... The Sunderland Forge & Eng. Co., Ltd. Contract No... 205 When fitted... 1943

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

Installation is Admiralty approved plans Have plans been submitted and approved... Yes System of Distribution... Two wire insulated Voltage of supply for Lighting... 110

Heating... 110 Power... 110 Direct or Alternating Current, Lighting... No Power... No 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... No Are turbine emergency governors fitted with a

trip switch as per Rule... No Generators, are they compound wound... No, 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... No, are shunt field regulators provided... No 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... No Have certificates of

test for machines under 100 kw. been supplied... and the results found as per rule... Are the lubricating arrangements and the construction

of the generators as per rule... No Position of Generators... Engine room starboard side forward

on raised steel is the ventilation in way of generators satisfactory... No are they clear of inflammable material... No, 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... No, are the bedplates and frames earthed... No and the prime movers and generators in metallic

contact... No Switchboards, where are main switchboards placed... Engine room starboard side near

generating set are they in accessible positions, free from inflammable gases and acid fumes... No, are they protected from mechanical injury and damage from water, steam

and oil... No, if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulation

material is used for the panels... Admiralty pattern, if of synthetic insulating material is it an Approved Type... No, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... Is the frame effectually earthed... No

Is the construction as per Rule... No, including accessibility of parts... No, absence of fuses on the back of the board... No, individual fuses

to pilot and earth lamps, voltmeters, etc... No, locking of screws and nuts... No, labelling of apparatus and fuses... No, fuses on the "dead"

side of switches... No Description of Main Switchgear for each generator and arrangement of equaliser switches... Double pole

knife switch and double pole fuse.

and for each outgoing circuit... Double pole knife switch and double pole fuse.

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

ammeters... One 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 lamp connected to E through amp. fuse

Switches, Circuit Breakers and Fuses, are they as per Rule... No, are the fuses an approved type... Admiralty pattern, are all fuses labelled as

per Rule... No If circuit breakers are provided for the generators, at what overload current did they open when tested... No, are the reversed current

protection devices connected on the pole opposite to the equaliser connection... No, 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... No

Cables, are they insulated and protected as per the appropriate Tables of the Rules... Admiralty pattern, if otherwise than as per Rule are they of an approved type... No,

state maximum fall of pressure between bus bars and any point under maximum load... No, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets... No Are paper insulated and varnished cambric insulated cables sealed at the ends... None fitted



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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. cables supplied to perforated galvanised tray or to surface protected where necessary by metal or wood guards: in coal bunkers cables run in pipes suitably drained.*

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 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 _____ 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, 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. _____

Admissibility pattern magazine fittings installed in magazines and engine room and where are the controlling switches fitted. In accommodation space, are all fittings suitably ventilated. *Yes*, are all fittings and accessories constructed and installed as per Rule. *Yes*. Searchlight Lamps, No. of *Two*, whether fixed or portable. *Portable with plug connection*, 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. *Admissibility pattern*. 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. _____ 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. _____ Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. _____ Are the cables lead covered as per Rule. _____ 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	15	110	136.5	500	<i>Single expansion steam engine</i>		
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	15	1	37.072	136	152	30	V.I.R.	L.C. A.P. 6187
" 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							

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	A.P.
WIRELESS	1	7/0.044	15	31	190	V.I.R.	L.C.	6192
NAVIGATION LIGHTS	1	7/0.036	6	24	160	V.I.R.	L.C.	6193
LIGHTING AND HEATING								
Forward Lighting	1	7/0.044	17	31	150	V.I.R.	L.C.	6192
Forward Heating	1	7/0.064	31	46	150	V.I.R.	L.C.	6191
Aft Lighting	1	7/0.044	30	31	100	V.I.R.	L.C.	6192
Aft Heating	1	7/0.064	31	46	100	V.I.R.	L.C.	6191
1/8" Drilling Provisions	1	7/0.044	19	31	190	V.I.R.	L.C.	6192
6" Hand Drilling Lamps	1	7/0.036	2.5	24	180	V.I.R.	L.C.	6193
Accus	1	7/0.044	31	46	240	V.I.R.	L.C.	6192
De-gassing	1	7/0.044	25	31	50	V.I.R.	L.C.	6192
Shore Connection	1	37/0.072	-	152	100	V.I.R.	L.C.	6187

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	DESCRIPTION.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
1 - 7 1/2" Fan			and 1 - 5" Fan fed from Forward Lighting Circuit					
1 - 5" Fan			fed from Aft Heating Circuit					
1 - 12 1/2" Fan			fed from Aft Lighting Circuit					
Particulars of Fan Motors			7 1/2" Fan 0.25 H.P. 4.6 Amps. Fuses 7/0.044 L.C. 6196					
			5" Fan 0.18 H.P. 1.0 Amp Fuses 7/0.044 L.C. 6196					
			12 1/2" Fan 1.5 H.P. 13.1 Amps Fuses 3/0.036 L.C. 6195					

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 8-3-1943

J. H. Gurney

COMPASSES.

Minimum distance between electric generators or motors and standard compass 51 feet

Minimum distance between electric generators or motors and steering compass 48 feet

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères on the feet from standard compass 5 feet from steering compass.

A cable carrying .14 Ampères 5 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.

JOHN CROWN & SONS, Ltd.

J. Chamber

Builder's Signature.

Date

Secretary

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

Plans. Are approved plans forwarded herewith *Yes* If not, state date of approval *Appd. by Admiralty*

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 Admiralty plans and amendments thereto and with appropriate Admiralty Fleet Orders. The material used are of good quality and the workmanship is good. On completion the equipment was run under working conditions with satisfactory results and the insulation resistance of all circuits was maintained and found to be good. This equipment is in my opinion suitable for a class vessel.

Noted

H. H. C.

22.3.43

Total Capacity of Generators 15 Kilowatts.

The amount of Fee ... £ 15 : - : 1.3.MAR.1943

Travelling Expenses (if any) £ : : When received. 19.....

D. Harrison

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 23 MAR 1943

Assigned *See Id. 25 33639*

5th. 4.39.—Transfer. (MADE AND PRINTED IN ENGLAND.)

(The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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