

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

12 FEB 1942

Received at London Office

Date of writing Report 26th Jan^y 1942 When handed in at Local Office 5th Feb^y 1942 Port of Dundee

No. in Survey held at Dundee Date, First Survey 3rd Oct^r 1941 Last Survey 23rd Jan^y 1942
Reg. Book. (Number of Visits 17)

24538 on the RFA "GREEN RANGER" Tons { Gross 331.3...
Net 1506

Built at Dundee By whom built Baledon S.B. & E. Ltd. Yard No. 391 When built 1942

Owners The Admiralty Port belonging to London

Electrical Installation fitted by Jelford Grier Mackay & Co. Ltd. Contract No. 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. yes Sub.Sig. yes

Have plans been submitted and approved yes System of Distribution Two Wise Voltage of supply for Lighting 110

Heating Power 110 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 yes 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 yes, 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 In Main Engine Room at forward end

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 In Main Engine Room adjacent to

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 Black Ebony Sindango, 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 For each generator

D.P. overload & Reverse Biscuit Breaker, with time lags & interlocked Equal-

izer Switch

and for each outgoing circuit D.P. Quick Break Switch & two S.P. cartridge type fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule 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 yes Earth Testing, state means provided Earth lamps & switches & cartridge type 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, are the reversed current protection devices connected on the pole opposite to the equaliser connection yes, have they been tested under working conditions yes. 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 4.7 ✓, 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 Admiralty type cables clipped to perforated sheet steel trays, & further protected by steel plates where deemed necessary.

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. 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 ✓.

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 Admiralty type fittings in Magazine. Flame proof fittings elsewhere and where are the controlling switches fitted Outside dangerous spaces, are all fittings suitably ventilated yes, are all fittings and accessories constructed and installed as per Rule yes. Searchlight Lamps, No. of one, whether fixed or portable portable, are their fittings as per Rule yes. 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 ✓. 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 yes, are all fuses of the cartridge type yes are they of an approved type yes. 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 ...	Two	Each 25	110	217	400	Steam Engines made by Sunders. land torque		
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 ...	25	1	37/103	217	240	45	Admiralty Type	
" " EQUALISER ...		1	19/083		118	22	" "	
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 ...						
Lighting		1 19/083	111 118	150	Admiralty Type	
Ventilating fans		1 19/083	131 118	30	" "	
Engine Room Motors		1 19/064	83 83	30	" "	
Boat Winches		1 19/083	168 118	150	" "	

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS ...		1 7/064	36 46	108	Admiralty Type	
NAVIGATION LIGHTS ...		1 7/036	12 24	210	" "	
LIGHTING AND HEATING ...						
Police		1 7/029	7 18	150	" "	
Engine Room Port		1 7/029	14 18	30	" "	
" " Starboard		1 7/029	13 18	30	" "	
10" Projector		1 7/064	30 46	240	" "	

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.
Workshops	1	3 1/2	1 7/044	30 31	180	Admiralty Type	
Fans	1	5	1 7/064	42 46	210	" "	
Crane	1	2	1 7/029	18 18	120	" "	
Lub. Oil Purifier	2	Each 1/2	1 7/029	12 18	90	" "	
Fuel	2	do	1 7/029	12 18	90	" "	
Vapour Extraction fan	1	1 1/2	1 7/029	15 18	90	" "	
Fuel Priming Pump	1	2 1/2	1 7/036	22 24	90	" "	

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.

TELFORD, GRIER, MACKAY & CO. LTD.

E. H. Grier DIRECTOR

Electrical Engineers.

Date 28 Jan 42

COMPASSES.

Minimum distance between electric generators or motors and standard compass 66 ft

Minimum distance between electric generators or motors and steering compass 58 ft

The nearest cables to the compasses are as follows:—

A cable carrying 12 Ampères 24 feet from standard compass 30 feet from steering compass.

A cable carrying 1/4 Ampères one feet from standard compass one 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 all course in the case of the

standard compass, and nil degrees on all course in the case of the steering compass.

THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.

Builder's Signature.

Date 5th Feb 1942

Henry Main

Managing Director.

Is this installation a duplicate of a previous case yes If so, state name of vessel "Gold Ranger"

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

This Installation has been efficiently fitted on board in accordance with the Rules, the materials & workmanship being sound & good. The wiring of the vessel has been carried out in a satisfactory manner, & in accordance with the approved plans. On completion, the installation was tried out under full load & working conditions, & it was found satisfactory in all respects.

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 24 : 10 : 0 When applied for, 5th Feb 1942. 1/5th the sum £ 22.0.0 1/5th the fee £ 5.10.0 Travelling Expenses (if any) £ : : When received, 19.....

John Houston
Surveyor to Lloyd's Register of Shipping.

GLASGOW 10 FEB 1942

Committee's Minute

SEE ACCOMPANYING MACHINERY REPORT.

Assigned

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



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