

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 3 JUN 1948

Date of writing Report 8<sup>th</sup> May 1948 When handed in at Local Office 1.6.48 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 28.7.47 Last Survey 12<sup>th</sup> May 1948  
Reg. Book. (Number of Visits 3)

37509 on the T.S. "HUNTINGDON" Tons { Gross 11281 Net 6658

Built at Glasgow By whom built Alex. Stephen & Sons Ltd Yard No. 612 When built 1948

Owners Federal Steam Nav Co Ltd Port belonging to London British

Electrical Installation fitted by Alex Stephen & Sons Ltd Contract No. 612 When fitted 1948

Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes RADAR Sub Sig. Yes TYPE 26B

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 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 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 Yes 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 Sindampo, 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

Triple pole circuit breaker fitted with O/L, R/C and preference trips

and for each outgoing circuit Circuit breaker fitted with O/L trips or double pole switch & fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 4

ammeters 2 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, 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 Full load, are the reversed current

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

did they operate 15% Full load 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 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 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. Yes, if so, are they adequately protected. Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. — State how the cables are supported and protected. Clipped to tray, woodwork or metal work protected by pipe or plating where necessary

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 effectually bushed. Yes and with what material. lead or brass ferrules. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position. Upper deck aft and method of control. Auto control panel

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. —, if so, how are they protected. —

and where are the controlling switches fitted. —, 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. Yes, are the frames effectually earthed. Yes, 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. Yes. 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. —. 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	4	300	220	1860	465	I.C. engine	oil	above 150° F
EMERGENCY	1	31	220	141	1200	I.C. engine	oil	above 150° F
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	300	2	127.093	1360	1630	134	V.C.	L.C. & B
" " EQUALISER	—	1	127.093	—	815	67	"	" " "
EMERGENCY GENERATOR	31	1	19.083	141	191	66	V.C.	L.C.A.B.
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 ...							
FOR? WINCH RING MAIN.	2	61.093	510	928	690	V.C.	L.C.B.
WINDLASS RING FED FROM FOR? WINCH RING	2	37.083	330	592	56	"	L.C.A.B.
AFT WINCH RING.	2	61.093	426	928	814	"	L.C.B.
REFRIG MASTER SWITCH BOARD.	3	127.103	2798	2796	256	"	L.C.A.B.
GALLEY SWITCH BOARD	2	37.072	382.5	492	448	"	L.C.B.
SHORE CONNECTION	1	37.103	350	385	180	"	"
ENGINE R. & REFRIG MACH SPACE 5 B.6.	1	19.064	100	135	144	"	"
BOAT WINCHES 5 B.3	1	19.064	80	135	180	"	"
THERMOTANK FANS	1	7.064	59	75	210	"	L.C.A.B.
AUX. BOILER FUEL BURNER MOTORS	1	7.064	45	75	270	"	" "
PRIMING PUMPS.	1	7.064	40	75	48	"	" "
LUB OIL PURIFIER SA	1	19.052	72	104	126	"	" "
ENGINEERS WORKSHOP MOTOR	1	7.064	38	75	162	"	" "
CRANE MOTOR	1	7.044	30	42	150	"	" "

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7.036	7	24	330	Rubber	L.C.B.
NAVIGATION LIGHTS	1	7.036	14.4	24	390	"	"
LIGHTING AND HEATING							
BOAT LIGHTS D.2	1	7.036	2.2	24	360	Rubber	L.C.B.
LIGHTING ACCOM. 2 WINCH HOUSE J.B.	1	19.064	110.6	135	150	V.C.	"
LIGHTING ENGINE ROOM PORT	1	7.044	14.5	42	312	"	L.C.A.B.
" " " STARBOARD	1	7.044	17	42	193	"	"
CARGO FOR?.	1	7.064	31	75	438	V.C.	L.C.B.
" AFT	1	7.064	31	75	390	"	L.C.B.
LIGHTING ACCOMM. 5.5	1	7.052	33	57	124	"	L.C.B.
ELECTRIC FIRES J.6	1	19.064	36	135	184	V.C.	L.C.A.B.
LIGHTING ENGINE ROOM. D.6 A2.	1	3.036	7	10	36	Rubber	"
REFRIG HEATERS	1	7.064	40	75	171	V.C.	L.C.B.
" "	1	3.029	1.3	5	66	Rubber	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
SEA WATER CIRC. PUMPS	2	30/60	1	37.072	226	246	252	V.C. L.C.A.B.
AIR COMPRESSORS	2	185	2	37.083	501	592	200	" "
BALLAST PUMPS	1	35/60	1	37.072	232	246	316	" "
BILGE & GENERAL SERVICE PUMP	2	13/19	1	19.052	76	104	162	" "
GENERATOR CIRC. PUMPS.	2	7/10 1/2	1	7.064	43	75	180	" "
FORCED LUB. PUMPS	3	15/20	1	19.052	80	104	380	" "
FUEL VALVE COOLING PUMPS.	2	4 1/2	1	7.044	20	42	380	" "
STEERING GEAR MOTORS	2	50	1	37.072	190	246	600	" "
REFRIG COMPRESSORS	3	180	2	37.103	670	770	150	" "
BRINE PUMPS	4	16	1	19.052	64	104	154	" "
" "	1	3 3/4	1	7.036	16	24	150	Rubber "
" "	1	3	1	7.036	12	24	150	" "
REFRIG. CIRC. WATER PUMPS	2	12	1	7.064	48	75	192	V.C. "
" AIR COOLER FANS	3	2	1	7.029	9	15	180	Rubber "
" " " "	4	2 1/2	1	7.029	11	15	197	" "
" " " "	9	3	1	7.029	14	15	192	" "
" " " "	2	3 1/2	1	7.036	15	24	120	" "
" " " "	1	3 3/4	1	7.036	16	24	240	" "
" " " "	3	5 1/4	1	7.044	22	42	120	V.C. "
" " " "	4	6 1/4	1	7.052	27	57	144	" "
" " " "	4	7 1/4	1	7.052	32	57	120	" "
" " " "	2	10	1	7.064	40	75	144	" "
JACKET & PISTON COOLING PUMPS	3	35/70	1	37.083	260	296	276	" "
SANITARY PUMP	1	13/19	1	19.052	76	104	180	" "
OIL FUEL TRANSFER PUMPS	2	10	1	7.064	40	75	240	" "
WINDLASS MOTOR	1	70	1	19.083	170	191	72	" "
F.W. PUMPS	2	4	1	7.044	18	42	210	" "
EMERGENCY FIRE PUMP	1	7 1/4	1	7.044	30	42	30	" "

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.

ALEXANDER STEPHEN & SONS LIMITED

Electrical Engineers. Date 25th May 1948

COMPASSES.

Minimum distance between electric generators or motors and standard compass 40 feet to Thermastak Fan

Minimum distance between electric generators or motors and steering compass 50 " " " "

The nearest cables to the compasses are as follows:—

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

A cable carrying 5 Ampères 15 feet from standard compass 10 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

ALEXANDER STEPHEN & SONS LIMITED

Builder's Signature. Date 25th May 1948

Is this installation a duplicate of a previous case Yes. If so, state name of vessel M.V. "HAPARANGI"

Plans. Are approved plans forwarded herewith No. If not, state date of approval 18.12.45

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, tested under working conditions, and found satisfactory.  
 The materials and workmanship are good.

# See copy of letter attached re- 76 certificates for Refrig Air Compressor Motors

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

Total Capacity of Generators 1231 Kilowatts.

1/10 London £9.1.6  
 1/10 Sunderland £9.1.6  
 The amount of Fee £ 90 : 15/6  
 4/5 Glasgow £72.12.6  
 Travelling Expenses (if any) £ 3 : 14/2  
 London Office

When applied for, JUN 1948

When received, 19

J. A. Wright  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 11 JUN 1948  
 ACCOMPANYING MACHINERY REPORT.  
 Assigned

