

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.

NEWCASTLE-on-TYNE

Date of writing Report.....19..... When handed in at Local Office.....26/3/41..... Port of.....

No. in Survey held at Walker-on-Tyne Date, First Survey 27-6-40 Last Survey 17-3-1941  
Reg. Book. Suppl. (Number of Visits.....27.....)

87013 on the T.S. ARONDA Tons { Gross 8220 Net 4463

Built at Newcastle (Walker) By whom built Swan Hunter & Wigham Richardson Ltd No. 1640 When built 1941

Owners British India Steam Nav. Co. Ltd Port belonging to LONDON

Electrical Installation fitted by Sunderland Forge & Eng'g Co. Ltd. Contract No. 1640 When fitted 1941

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

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 Direct Power Direct 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 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 Engine room starboard side

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 After end of engine room

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 Ebony Sindanyo, 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 Two pole circuit.

breakers with coupled equalizer breaker, with overload & reverse current trips &

time delays.

and for each outgoing circuit D.P. circuit breakers or D.P. switches and fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes 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 Yes Earth Testing, state means provided Earth lamps coupled to earth via switches & fuses

See Sheet 93 Rpt 76

ENCLOSURE

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 Yes 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 ..... 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 ..... 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

PARTICULARS OF GENERATING PLANT.								
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampres.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	8	275	220	1250	1000	Steam turbines		
EMERGENCY ...	1	20	220	91	1200	oil engine		None 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 For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rate.			
MAIN GENERATOR ... ..	275	2	91/103	1250	1476V	100'	V.C.	L.C.B.
" " EQUALISER ... ..	-	1	91/103	-	788V	100'	V.C.	L.C.B.
EMERGENCY GENERATOR ... ..	20	1	19/072	91	97V	20'	V.I.E	L.C.A.B.
ROTARY TRANSFORMER: MOTOR ... ..								
" " GENERATOR ... ..								

MAIN DISTRIBUTION CABLES.

[illegible]

LIGHTING AND HEATING, ETC., CABLES.

[illegible]

MOTOR CABLES

[illegible]

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.

*Henry Sunderland Large & Co Ltd.* Electrical Engineers. Date *19-3-1941*  
*At Survey.*

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass..... *150'*

Minimum distance between electric generators or motors and steering compass..... *140'*

The nearest cables to the compasses are as follows:—

A cable carrying *16* Ampères *inside* feet from standard compass ..... feet from steering compass.

A cable carrying *16* Ampères ..... feet from standard compass ..... *inside* feet from steering compass.

A cable carrying *10* Ampères *12* feet from standard compass ..... *7* 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.

*SWAN, HUNTER, & WIGHAM RICHARDSON LTD.*  
*Thomas Morrison* Builder's Signature. Date *25<sup>th</sup> March 1941*  
*DIRECTOR*

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

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

*The electrical equipment of this vessel was installed under special survey. The workmanship and materials used are good. The governing, compensating and parallel operation of the generator sets were tested under working conditions. The operation of the protective devices of the circuit breakers, and the insulation resistance of each circuit measured, and found satisfactory. In my opinion the installation is suitable for a classed vessel.*

*Noted*  
*2/4/41*

Total Capacity of Generators..... *845* Kilowatts.

*Sunderland & Co* £ *152.18.0*  
*LONDON & Co* £ *113.4.6*

The amount of Fee ... £ *66 : 2 : 6* When applied for, *27 MAR 1941*

*Sunderland & Co* £ *161.5.0* When received, .....  
Travelling Expenses (if any) £ *4 : 7 : 6* .....  
*LONDON & Co* Expenses

*L. S. Owen*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 4 APR 1941*

Assigned *See NWC J.C. 99305*