

**NEW ZEALAND MARITIME SCHOOL**

**NZ Diploma Electro-technology**

**Year 1 ETO Cadets, 2019.**

**NZ2511-02.**

**(STCW-78 III/1, as amended in 2010)**

**Course 942.467**

**‘Electrical Maintenance and Repair Procedures’**

**Learning Outcomes Assessment**

***Research each of the Four Learning Outcomes and answer with your interpretation.***

***Use reading material provided on Canvas, library material or other suitable sources. Where possible provide reference to the sources. Email back to the tutor when complete.***

**Tutor**: John Lamb

[jlamb@manukau.ac.nz](mailto:jlamb@manukau.ac.nz)

Student Name:

Student ID:

Date:

Outcome 1: Demonstrate knowledge of safety precautions to take prior to undertaking shipboard electrical maintenance and repair work

Identify safety hazards which can be present when working on shipboard electrical equipment.

Name proper Personal Protective Equipment (PPE) to be used when working on various shipboard electrical equipment.

Explain Lockout-Tagout procedures prior to electrical maintenance and repair work.

Explain use of fixed and portable earthing devices and how to apply them safely.

Explain safe electrical maintenance/repair work procedures for flammable areas.

Explain how to interpret and follow shipboard instructions relating to electrical maintenance and repair work.

Explain how to interpret and follow electrical equipment/manufacturer safety guidelines for repair and maintenance work.

Answer here

Outcome 2: Demonstrate knowledge of and interpret basic electrical drawings

PERFORMED USING Drawing SOFTWARE AND IN CLASS ANALYSIS of typical ships schematic drawings. No answers required here.

Student to submit drawing file.

1. Ship generating and distribution layout (any ship – HV or LV)
2. Star Delta with two remote stop/start

IN CLASS ANALYSIS of typical ships schematic drawings. No answers required here.

Interprets main features of ships electrical system technical drawings for maintenance and repair purposes.

Interprets main features of ships electrical equipment drawings for maintenance and repair purposes.

Identifies the symbols for electric generators, motors, transformers, contacts, switches, breakers, relays, time-delay relays, thermal relays, contactors, signal lights, fuses, measurement sensors and electric measuring devices, lighting fixtures, switches, sockets, connection boxes.

Identifies the following diagram types:

* block
* system
* circuit
* wiring (connection)
* view (layout)

Outcome 3: Test for and detect basic faults and restore electrical equipment and machinery to operating condition

Explain how to detect basic equipment/machinery electrical malfunction.

Explain how to locate basic electrical faults.

Explain how to take action to prevent further damage due to a fault.

Correctly uses measuring and calibration instruments during testing and restoration. DONE IN LAB.

Explain how to interpret and follow shipboard instructions and procedures for fault detection and system/equipment restoration.

Answer here

Outcome 4: Demonstrate knowledge of the basic maintenance requirements of ships fire detection systems

Use material from Ship Manuals to assist completing this section;

# Eg- Epic and ms Koningsdam, SOPs and detector systems

Interprets typical shipboard electrical fire detection system and maintenance documentation.

Knows common fire detection testing procedures.

Knows typical fire detection system electrical system preventative maintenance procedures.