

<b>Title</b>	<b>Demonstrate knowledge of marine electrical systems</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>8</b>

<b>Purpose</b>	People credited with this unit standard are able to explain the electrical systems in a boat and explain the corrosion protection for electrical system components in a boat.
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<b>Classification</b>	Boating Industries > Boatbuilding
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<b>Available grade</b>	Achieved
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### Guidance Information

#### References

- ISO 10133:2012 Small Craft – Electrical Systems – Extra-low-voltage d.c. installations, available at <http://www.iso.org>.
- Maritime Rules for Recreational Boating, available at <http://www.maritimenz.govt.nz>.

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### Outcomes and performance criteria

#### Outcome 1

Explain electrical systems in a boat.

#### Performance criteria

- 1.1 Battery banks are explained in relation to their marine use.  
Range battery banks include - deep cycle, start.
- 1.2 Start and deep cycle banks are compared in terms of their use.
- 1.3 Marine battery types are explained in terms of their characteristics and maintenance requirements.  
Range flooded, gel, lead-acid.
- 1.4 Electrical circuits are explained in terms of wiring requirements.  
Range parallel, series, earthing.

- 1.5 Battery installation requirements are explained in accordance with manufacturer's instruction information.
- Range position, security, ventilation.
- 1.6 On-board charging of batteries is explained in terms of marine safety guidelines.
- 1.7 Components of electrical systems are explained in terms of their use.
- Range inverters, navigation lights, emergency lights.
- 1.8 Ingress Protection (IP) Ratings for marine electrical systems are explained in terms of the degree of protection against the marine environment.

## Outcome 2

Explain the corrosion protection for electrical system components in a boat.

### Performance criteria

- 2.1 The corrosion protection for electrical systems components is explained in accordance with manufacturer's instruction information and marine environment.

<b>Planned review date</b>	31 December 2021
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 April 2017	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0136
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Comments on this unit standard

Please contact the NZ Marine and Composites Industry Training Organisation [training@nzmarine.com](mailto:training@nzmarine.com) if you wish to suggest changes to the content of this unit standard.