Title	Demonstrate knowledge of marine electronic equipment types, functions and connection
Level	3	**Credits**	6

Purpose	People credited with this unit standard are able to: explain the function, installation and connection requirements of commonly installed marine electronic equipment; describe the procedures for programming, commissioning and troubleshooting of marine electronic equipment; explain marine electronic equipment selection considerations; and explain the integration and operation of GMDSS on marine electronic equipment.

Classification	Boating Industries > Boatbuilding

Available grade	Achieved

Guidance Information

1   Assessment against this unit standard must be compliant with either –
    (a)   AS/NZS 3004.2:2014 – *Electrical installations – Marinas boats;* or
    (b)   ISO 10133:2017 – *Small craft – Electrical systems – Extra low voltage DC installations*;
        available at https://shop.standards.govt.nz/.

2   Definitions
    AIS – Automatic Identification System.
    DSC – Digital Selective Calling.
    EPIRB – Emergency Position-Indicating Radio Beacon.
    GMDSS – Global Maritime Distress Safety System.
    GPS – Global Positioning System.
    HF – High Frequency.
    IP – Ingress Protection.
    Navtex – Navigational Telex.
    PC – Personal Computer.
    RF – Radio Frequency.
    SSB – Single Side-Band.
    VHF – Very High Frequency.
    Workplace policies and procedures refers to the documented procedures and policies providing guidelines of the tasks and activities carried out in the workplace. This typically includes relevant health and safety policies to manage risk in the workplace.

Outcomes and performance criteria

Outcome 1

Explain the function, installation and connection requirements of commonly installed marine electronic equipment.

Range   GPS, radar, VHF, SSB, AIS, chart plotter, sounder/sonar, autopilot and heading, speed, wind sensing equipment, PC interface.

Performance criteria

1.1   Marine electronic equipment is explained in terms of functions.

1.2   Installation requirements are explained in terms of mounting location and securement in accordance with AS/NZS 3004.

1.3   Cabling and connection requirements are explained in terms of equipment types in accordance with AS/NZS 3004.

          Range   requirements include – cable length variation, connector, aerial, RF earthing, power supply, data communication.

Outcome 2

Describe the procedures for programming, commissioning and troubleshooting of marine electronic equipment.

Performance criteria

2.1   Generic procedures for programming electronic equipment are described in accordance with workplace policies and procedures, and manufacturer instructions.

2.2   Generic procedures for commissioning electronic equipment are described in accordance with workplace policies and procedures, and manufacturer instructions.

2.3   Generic procedures for maintenance and troubleshooting of electronic equipment are described in accordance with workplace policies and procedures, and manufacturer instructions.

Outcome 3

Explain marine electronic equipment selection considerations.

Range   three different types of marine electronic equipment.

Performance criteria

3.1   Marine electronic equipment are explained in terms of equipment compliance, compatibility, capability, regional compatibility, and use considerations.

3.2   Installation considerations that may affect installation are explained in terms of connection and ancillary equipment considerations in accordance with AS/NZS 3004.

Range   ancillary considerations include – sensors, transducers.

Outcome 4

Explain the integration and operation of GMDSS on marine electronic equipment.

Performance criteria

4.1   GMDSS integration and operation is explained in terms of compatibility on marine electronic equipment.

Range   EPIRB, NAVTEX, Inmarsat, HF, VHF.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 May 2011	31 December 2022
Review	2	27 August 2020	N/A

Consent and Moderation Requirements (CMR) reference	0136

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 if you wish to suggest changes to the content of this unit standard.