



Australian Government

**Assessment Requirements for MARB049
Use internal communication systems,
operate computers and computer networks
on ships**

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least four separate occasions and include:

- adjusting proportional-integral-derivative (PID) controller systems
- applying fault-finding methods to rectify faults in the following systems:
 - computer network systems
 - internal communication
- applying work health and safety (WHS)/occupational health and safety (OHS) requirements and electronic safe work practices
- checking and handling shipboard information technology devices in accordance with manufacturer specifications
- operating internal communication systems onboard a ship in accordance with required protocols.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- bridge-based, engine-room-based and commercial computer use, including:
 - construction and function of integrated navigation systems
 - purpose, construction and operation of ship fuel consumption optimising systems
 - purpose, structure and function of computer systems for critical equipment condition monitoring
 - purpose, structure and function of electronic alarm recorder
 - purpose, structure and function of programmable logic controller (PLC) or PLC-based power management systems
 - purpose, structure and function of PLC or PLC-based refrigeration systems
 - purpose, structure and function of PLC or PLC-based systems for fuel storage, transport and preparation

- purpose, structure and function of voyage data recorder (VDR) system
- purpose, structure and functions of dynamic positioning system
- construction and use of computer networks on a ship, including:
 - internet and ethernet protocols
 - medium access methods, including master-slave, master-slave with cyclical polling, token ring, token ring with master-slave polling, carrier-sense multiple access/collision detection (CSMA/CD), carrier-sense multiple access/collision avoidance (CSMA/CA)
 - Profibus decentralised peripherals (DP) network, characterises nodes, structures, objects of configuration, programming of data exchange
- software licensing rights and responsibilities
- fault-finding methods and techniques
- features of computer networking
- hardware and software of digital enhanced cordless telecommunications (DECT) cordless phone system used on ships with advanced private automatic branch exchange (PABX)
- hardware, software and functions of pager system
- internal communication systems, including:
 - alarm systems
 - public address (PA) systems
 - talkback and intercom system
 - telephones:
 - automatic telephone system
 - sound powered telephone system
- main features of data processing
- metering and measuring equipment suitable for internal communication and computer networks systems
- operation of internal communication systems on board a ship
- personal computer (PC)-based control systems
- PID controller
- relevant industry standards and legislative requirements
- shipboard information technology, including:
 - computer networks
 - computers
 - electronic device capable of receiving information
- typical sound powered telephone network on ship
- typical talkback network on ship and its components for various environmental conditions
- WHS/OHS requirements, including electronic safe work practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory

requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, safety management system (SMS), workplace procedures and operational manuals
- computer network with PID and PLC controllers
- tools, technology equipment, machinery, materials and personal protective equipment (PPE) currently used in industry.

Links

Companion Volume implementation guide can be found in VetNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>