



Australian Government

DEFSIM011 Fault find and repair simulator control systems

Release: 1

DEFSIM011 Fault find and repair simulator control systems

Modification History

Release 1. This is the first release of this unit of competency in the DEF Defence Training Package Release 4.0. Motion systems component removed and developed in a new unit.

Application

This unit describes the knowledge and skills required to conduct fault finding and repairs to simulator control systems. This includes analysing fault reports, identifying and rectifying faults, conducting functional tests and the documentation and certification processes. In the context of this unit, simulators are used to replicate land, air, sea and undersea systems to facilitate training and development.

Simulator control systems must be custom designed to replicate the device being simulated.

Consumer grade computer hardware peripherals such as Joysticks and Steering wheels do not meet the requirements.

Simulator control systems are pneumatic, electrical or hydraulic and includes:

- Primary and secondary aircraft control systems
- Throttle control systems
- Steering control systems
- Thruster/propulsion control systems (ships)
- Active and passive controls

This unit applies to those working in fault finding and repairing simulator control systems and was developed for technicians who work in this field.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work independently, or as part of a team, with minimal supervision, while performing tasks, including problem solving, in a limited range of contexts. They would use discretion and judgement and take responsibility for the quality of their outputs.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Simulator Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Receive and analyse fault report	1.1	Receive and analyse simulator control system fault report
	1.2	Identify and select appropriate fault finding method(s) that will apply across the range of simulator control systems
	1.3	Prepare the simulator control system for fault finding
2 Identify and find fault	2.1	Apply fault finding method(s)
	2.2	Identify and analyse fault indicators
	2.3	Identify the simulator control system fault
	2.4	Confirm that the fault is the one initially reported
3 Repair fault	3.1	Identify and confirm cause of fault
	3.2	Identify and confirm repair method
	3.3	Complete simulator control system repair
	3.4	Conduct post repair safety check
	3.5	Restart simulator control loading system
4 Conduct functional test	4.1	Test simulator control systems to ensure operational integrity
	4.2	Confirm operational parameters
5 Finalise repair process	5.1	Finalise simulator control system repair reports

including a detailed synopsis of the fault and the repair process and any certification requirements

5.2 Report the operational status of the simulator control system

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is not equivalent to DEFSIM004 Fault find and repair simulator control systems.

Links

Companion Volume Implementation Guides are found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFSIM011 Fault find and repair simulator control systems

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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 one occasion and includes:

- undertaking research and analysis related to simulator control systems
- following logical, fault finding techniques
- using tools measuring instruments and diagnostics
- applying simulator control and systems repair methodologies
- following configuration management processes
- using appropriate information technology and software including proprietary control system calibration software and general online diagnostic tool software
- identifying, reviewing and analysing information that may impact on the simulator control system fault finding
- conducting simulator control system functional testing
- negotiating and communicating effectively with key stakeholders.

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:

- operational capabilities and limitations of the relevant simulator
- operational capabilities and limitations of the relevant simulator control system
- simulator operating modules comprising the simulator system being worked on
- fault indicators related to the simulator control systems being worked on
- repair methodologies related to the simulator control and systems being worked on
- legislative and regulatory requirements related to the simulator control systems being worked on
- organisational policy and procedures related to the relevant simulator control systems
- configuration management related to the simulator control and systems being worked on
- product knowledge related to systems and/or equipment in service.

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 must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Retail or commercial systems whose primary purpose is entertainment do not meet the requirements.

Individual domestic use systems whose primary purpose is entertainment do not meet the requirements.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- acceptable means of simulation assessment
- applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and PPE currently used in industry.

Links

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