



Australian Government

TLIX0031X Provide maintenance engineering support in a defence integrated logistics environment

Release: 1

TLIX0031X Provide maintenance engineering support in a defence integrated logistics environment

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to undertake maintenance engineering support within a defence integrated logistics environment.

It includes determining the functional maintenance support requirements of an asset; designing and developing documentation required for physical maintenance support; the operating intent of the asset; and managing the maintenance support requirements of an asset throughout in-service and disposal.

Maintenance support provides the hardware, software, materiel, facilities, personnel, processes and data needed to enable maintenance services such that the materiel system (mission system and support system) retains its technical integrity throughout its intended life. Maintenance links closely with the other disciplines and is a driver of design change, technical data requirements, spares, training, the majority of technical publications content, configuration management (CM) requirements, and support system verification and validation activity.

This unit has extensive relationships to other integrated logistics support (ILS) functions, including ILS management, reliability availability and maintainability (RAM), technical publications, supply chain and training support.

This unit is appropriate for technical specialists supporting integrated logistics functions. Typically, these individuals will have existing vocational or higher education qualifications related to engineering, and significant engineering support experience. Prior training in, or awareness of, safety and human factors in engineering is useful for Maintenance Engineers in roles that will influence mission (asset) system design. They must demonstrate the ability to work independently or as part of a team under direct and/or indirect supervision, use discretion and judgement, and take responsibility for the quality of their outputs. All activities are carried out in accordance with relevant policies and procedures.

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

Pre-requisite Unit

Not applicable.

Competency Field

X – Logistics

Unit Sector

Integrated logistics

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Determine the maintenance support requirements of an asset

PERFORMANCE CRITERIA

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

- 1.1** ILS strategy for the program is reviewed to ensure relevance and alignment of maintenance engineering
- 1.2** Organisational support policy is accessed, interpreted and applied to maintenance support, logistics support analysis (LSA) strategy and ILS planning
- 1.3** Maintenance support performance metrics, requirements and specifications are developed in accordance with organisational policy
- 1.4** Data required to develop functional maintenance support requirements for the identified asset is gathered and analysed
- 1.5** Improvement, standardisation, technological and other risk mitigation opportunities are identified and analysed to inform asset and support system design changes
- 1.6** Maintenance requirements determination (MRD) is conducted to identify physical maintenance support requirements
- 1.7** Usage upkeep cycle and class maintenance plan is developed to sustain the asset over life
- 1.8** Maintenance management system requirements are identified

2 Design and develop physical maintenance requirements to support

- 2.1** Maintenance task analysis is conducted to determine the physical elements associated with each preventative and

the operating intent of the asset

corrective maintenance task

- 2.2 Maintenance records are developed, loaded and data maintained within the materiel maintenance management information system
- 2.3 Technical data is developed and/or validated
- 2.4 Verification and validation activities and maintenance support assessments are planned and conducted to confirm the achievement of maintenance support objectives

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.

Unit Mapping Information

This is a new unit. No equivalent unit.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIX0031X Provide maintenance engineering support in a defence integrated logistics environment

Modification History

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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 two separate occasions and include:

- reviewing integrated logistics support (ILS) strategy for the program to ensure relevance and alignment of maintenance engineering
- accessing and interpreting the organisational support policy and applying it to maintenance support, logistics support analysis (LSA) strategy and ILS planning
- working as part of the ILS team, planning and conducting maintenance engineering tasks, including:
 - during the concepts, requirements determination and design phases of a materiel system
 - during the design and development phases of a support system
 - throughout the in-service and disposal phases of a materiel system
- determining the functional maintenance support requirements of an asset
- designing, developing and delivering the physical maintenance support outputs that enable maintenance services to ensure the materiel system retains its technical integrity throughout its intended life.

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:

- organisational policies and procedures relevant to ILS
- organisational policies and strategies relevant to maintenance engineering
- industry standards relevant to ILS and maintenance engineering
- LSA processes and the application of LSA data, including failure mode, effects and criticality analysis (FMECA), level of repair analysis (LORA), reliability, availability and maintainability (RAM) and reliability-centred maintenance (RCM)
- techniques to develop understanding of the proposed system
- techniques to develop functional maintenance support requirements and translating these into physical support outputs and ILS outcomes
- techniques to identify improvements, standardisation, technological and other risk mitigation opportunities to inform asset and support system design changes to improve support system

- outcomes or reduce life cycle costs
- physical elements associated with each maintenance task, including:
 - skills, knowledge and attributes – trade performance requirements
 - maintenance procedures and processes (safety issues, hazards and associated human factors considerations)
 - general and specialist tools and test equipment
 - facility requirements (at each level of repair)
 - repair parts, rotable items and consumables
 - packaging, handling, storage and transportation (PHS&T) requirements for all items of supply
 - conducting an economic LORA and amending support strategy and plans
 - populating the logistics support analysis record (LSAR)
- processes and information required to prepare outline plans and high-level costings
- maintenance engineering concepts and practices
- organisational maintenance management systems
- maintenance engineering budget forecast
- techniques to plan engineering maintenance related to human resource complements
- techniques to plan and conduct verification and validation activities and maintenance support assessments to confirm the achievement of maintenance support objectives, including:
 - acceptance test and verification plans and reports
 - maintenance evaluations
 - operational test and evaluation support.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate 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.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation, including organisational policies and procedures, legislation, data and/or modelling applicable to ILS, industry standards and/or specifications and access to relevant organisational information management systems
- relevant materials, tools, equipment and personal protective equipment (PPE) currently used

in industry.

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