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# **TLIX0029X Evaluate FMECA 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 evaluate failure mode, effects and criticality analysis (FMECA) in a defence integrated logistics environment.

FMECA is a bottom-up, inductive analytical method which may be performed at either the functional or piece-part level. The result highlights failure modes with relatively high probability and severity of consequences, allowing remedial effort to be directed where it will produce the greatest value, and to inform the safety case for the asset.

It includes identifying source data, establishing and maintaining baselines for logistics support analysis (LSA), revising LSA data and documenting FMECA and related analyses.

This unit is appropriate for technical specialists supporting integrated logistics functions. Typically, these individuals must demonstrate the ability to work independently or as part of a team under indirect supervision, use discretion and judgement, and take responsibility for the quality of their outputs. All activities are carried out in accordance with relevant policy and organisational 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**

### **PERFORMANCE CRITERIA**

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Elements describe the essential outcomes.

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

**1 Identify source data**

- 1.1** Integrated logistics support (ILS) strategy for the program is reviewed to ensure relevance and alignment of FMECA
- 1.2** Organisational procurement and supply chain policies, and original equipment manufacturer (OEM) data for each identified item are interpreted
- 1.3** Contractual and regulatory requirements are determined and reviewed
- 1.4** LSA plan data is reviewed in line with trends in system supportability and affordability
- 1.5** Sensitivity analysis is conducted in accordance with organisational procedures
- 1.6** Levels of confidence to data is risk assessed

**2 Establish and maintain baselines for LSA**

- 2.1** In-service LSA data is gathered in accordance with organisational procedures
- 2.2** LSA baseline data and actions to deal with deviations or failure from established baselines are reviewed
- 2.3** FMECA criticality analysis is conducted in accordance with contractual and organisational procedures
- 2.4** FMECA data is interpreted to inform maintenance and supply support requirements
- 2.5** FMECA data is interpreted to confirm coverage of the operating support intent
- 2.6** Verification and validation of data is completed to confirm performance outcomes

**3 Revise LSA data**

- 3.1** LSA parameters using current data are analysed
- 3.2** LSA data is analysed and results are recorded
- 3.3** Logistics support management information systems is updated in accordance with contractual, regulatory requirements and organisational procedures

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**4 Document and maintain FMECA and related analyses**

- 4.1** Level of analyses, the data sources and techniques used in performing the analysis, including the system definition narrative, resultant analysis data, and worksheets are summarised, and the results documented
- 4.2** Reliability critical item lists are extracted from the FMECA and included in a summary report
- 4.3** FMECA data is collected throughout in-service and disposal phases to inform support system requirements
- 4.4** Conclusions and recommendations based upon the analysis and recommended actions are documented in accordance with organisational procedures

## **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**

TLI Transport and Logistics Training Package Companion Volume Implementation Guides are found in VETNet

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# Assessment Requirements for TLIX0029X Evaluate FMECA in a defence integrated logistics environment

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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:

- identifying the function/s, failure/s, effect/s and cause/s for each item or process to be analysed
- documenting failure mode, effects and criticality analysis (FMECA)
- evaluating FMECA in a defence integrated logistics environment
- identifying and consulting with relevant stakeholders
- identifying source data
- identifying, interpreting and applying legislation, policies and procedures that may impact on FMECA
- identifying, obtaining and interpreting documentation
- revising logistics support analysis (LSA) data
- working collaboratively with internal/external personnel/stakeholders to achieve required FMECA outcomes.

## 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:

- factors to be considered in integrated logistics support (ILS) planning and management
- FMECA in a defence integrated logistics environment
- LSA plan
- data requirements and sources to inform FMECA
- techniques to read and interpret:
  - engineering design notes and specifications
  - original equipment manufacturer (OEM) data
- legislation relevant to ILS, LSA and FMECA
- organisational policies and procedures relevant to ILS, LSA and FMECA
- industry standards relevant to ILS, LSA and FMECA.

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## 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 access to:

- 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.

## Links

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