



Australian Government

DEFCA315B Supervise engineering operations

Release 2

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Modification History

Release	TP Version	Comments
2	DEF12 V2	Unit Descriptor updated. Application added. Minor Range Statement change. Evidence Guide updated.
1	DEF12 V1	First release.

Unit Descriptor

This unit covers the competency required to command, lead and manage engineering personnel of up to a sub-unit size (about 130) on operations.

Command is the authority a commander in the military service lawfully exercises over subordinates by virtue of rank or assignment.

This unit also includes the skills and knowledge required to lead and manage under extreme conditions in a high-risk environment. It therefore requires individuals to be incisive in a fluid and demanding environment, to act independently, and to lead by example.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication. In a Defence context, this means that there is no civilian need to hold this unit in order to meet licensing, legislative, regulatory or certification requirements.

Application of the Unit

This competency was developed for land engineering personnel required to deploy in an operational environment, but is applicable to any individual in this field of work.

Typically supervisors work independently and lead 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 organisational policies and procedures.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare and plan for engineering operations	1.1 Competence of subordinates is confirmed and maintained in accordance with standard procedures. 1.2 Personnel administration is maintained in accordance with standard procedures. 1.3 Orders are received and clarified as necessary to determine commander's intent. 1.4 Constraints and risks relevant to the task are determined and managed in accordance with standard procedures. 1.5 Appropriate resources for the task are assembled, and any shortfalls that limit capability are reported to the chain of command. 1.6 Work health and safety (WHS) requirements and recognised safety precautions are applied throughout the operation in accordance with standard procedures. 1.7 Planning decisions are made based on a logical process to solve operational problems. 1.8 Battle procedures are conducted in accordance with standard procedures.
2. Conduct engineering operations	2.1 Orders are prepared and delivered in accordance with standard procedures. 2.2 Subordinates are directed and supervised in accordance with organisational requirements. 2.3 Liaison is conducted in accordance with operational requirements and standard procedures. 2.4 Support from outside agencies is organised and directed.
3. Finalise engineering operations	3.1 Debriefs are conducted in accordance with standard procedures. 3.2 Post activity analysis is conducted and subsequent recommendations are made in accordance with standard procedures. 3.3 Equipment, stores and ammunition are reconditioned, replaced or returned as applicable. 3.4 Documentation is completed in accordance with standard procedures. 3.5 Subordinates' health and well-being is monitored and any anomalies are referred or fixed.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required Skills

- combat engineer skills
- develop instructions from given orders
- draw simple construction plans
- navigate by day and night, vehicle and foot
- operate Global Positioning System (GPS)
- operate weapons
- simple levelling for construction tasks
- supervise subordinates
- use computers
- write reports

Required Knowledge

- civil and general construction occupational competencies and related equipment.
Such as:
 - work in confined space and heights
 - traffic control
 - road repairs and culverting
 - civil construction and design methods
 - employment of plant and operators
 - employment of civil trades
- combat communications
- combat engineer skill sets and equipment including:
 - engineering information and intelligence
 - engineering technical reconnaissance
 - field construction
 - field defences and obstacles
 - water purification and analysis
 - timber felling and milling
 - high-risk search
- chemical, biological, radiological and nuclear (CBRN):
 - personal decontamination station/equipment decontamination station
 - CBRN survey
 - counter surveillance and deception
 - mine warfare/booby traps
 - demolitions/destruction of malfunctioned explosive ordnance
 - blast effects

- target hardening
- battle area clearance
- bridging - wet, dry, non-equipment
- watercraft
- deployment of engineer equipment and personnel:
- convoy orders
- occupation and defence of a unit position
- deployment planning data sheet (DPDS)
- combat skills including:
 - weapons (individual, crew served and direct fire support weapon systems)
 - tactical reconnaissance
 - navigation
 - track and patrolling
 - tactical deployment
- command and control
- emergency response engineering
- engineering specialist skills including:
 - army working diver
 - engineer driving
 - plant operations
 - quarrying operations
 - timber milling operations
 - explosive ordnance disposal operations
 - explosive detection dog team employment
- geometric engineering including:
 - survey
 - terrain analysis
 - geospatial information systems
 - product support
- legal responsibilities
- relevant legislation and procedures in relation to environmental requirements and Rules of Engagement
- relevant WHS regulations/requirements, equipment, material and personal safety requirements
- risk assessment techniques

Evidence Guide

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to supervise a range of missions such as:

General construction of pre-designed timber structures, sandbag walls, obstacles, expedient structures and field defences using the following techniques:

- construction design and plans
- excavation
- revetment
- basic carpentry
- concreting

The construction process must include the design and use of field machines (field machines may include devices such as slings, gyns, derricks and sheers to construct the mechanical advantage necessary to lift and move the load) to move a load of at least three tonne.

Search of:

- an occupied building
- an unoccupied building
- a vehicle (may include aircraft, boat, truck, train etc)
- route (road)
- area
- and involving liaison with a higher authority (search advisor, cordon commander, police, explosive ordnance disposal, etc.)

Offensive, defensive and security tasks (such as patrolling, attacking or withdrawing) involving:

- navigation (day, night, vehicle, foot)
- tracking and patrolling
- employment of unit weapon systems:
- individual weapons
- crew served weapons
- direct fire support weapons
- communications
- living in the field

The individual should be exposed to the extremes of the operational environment where a person is under physical and mental stress.

Consistency in performance

Competency should be demonstrated over time and across a range of simulated or actual workplace

**Context of and specific
resources for assessment**

situations that allows for the performance of a range of general construction, search and operational tasks under various field conditions.

Context of assessment

Competency should be assessed in the workplace or in a simulated workplace environment.

Specific resources for assessment

Access to a group of up to 30 engineers, including weapons, equipment and appropriate operating areas.

Range Statement

The Range Statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the Performance Criteria is detailed below.

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| <p><i>Standard procedures</i> may include:</p> | <ul style="list-style-type: none"> • Australian Standards • defence instructions • job guides, pamphlets and other publications • manufacturers' handbooks, industry specifications and technical instructions • WHS regulations • organisational policies and procedures • procedure manuals • relevant local government by-laws • relevant state/territory or federal legislation or regulations • routine orders • standing operating procedures • standing orders • written and verbal orders |
| <p><i>Personnel administration</i> may include:</p> | <ul style="list-style-type: none"> • career management • counselling • discipline • pay • welfare |
| <p><i>Constraints</i> may include:</p> | <ul style="list-style-type: none"> • environmental conditions • experience of subordinates • health • morale • operational tempo • resources • terrain • training short falls • troops to task • welfare |
| <p><i>Risks</i> may include:</p> | <ul style="list-style-type: none"> • loss of equipment • loss of personnel • threats injury |
| <p><i>Logical process</i> may include:</p> | <ul style="list-style-type: none"> • engineer battlefield assessment • individual military appreciation process |
| <p><i>Battle procedures</i> may include:</p> | <ul style="list-style-type: none"> • concurrent activity • rehearsals |

Support from outside agencies may include:

- thorough reconnaissance
- warning orders
- armour
- artillery
- engineers
- logistics
- medical
- rotary and fixed wing aircraft

Unit Sector(s)

Not applicable.