



Australian Government

DEFCA323 Assist in the preparation, construction and maintenance of roads and tracks

Release: 1

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Modification History

Release	TP Version	Comments
1	DEF12 V2	First release. Replaces and is equivalent to DEFCA307B. Assist in the preparation, construction and maintenance of roads and tracks. Pre-requisites removed. Unit Descriptor updated. Application added. Minor range Statement change. Evidence Guide updated.

Unit Descriptor

This unit covers the competency required to assist in the preparation, construction and maintenance of minor roads and tracks to provide access to work sites, camps and other installations.

The minor roads and tracks will normally be of a temporary nature and can be expected to carry only a moderate amount of vehicular traffic without major upgrading, construction and maintenance work to bring it up to a permanent standard. Roads and tracks will normally be constructed in field conditions.

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 combat engineer personnel required to assist in the preparation, construction and maintenance of minor roads and tracks to provide access to work sites, camps and other installations in a deployed operational environment but is applicable to any individual in this field of work.

The individual will usually work as part of a team under supervision, but may undertake some autonomous tasks, must 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

ELEMENTS	PERFORMANCE CRITERIA
1. Plan and prepare for construction	1.1 Appropriate personal protective equipment is selected and worn in accordance with WHS requirements. 1.2 Tools and equipment required for the job are selected, checked for serviceability and any faults are reported to the supervisor. 1.3 The road/track line is laid out and cleared of vegetation and obstructions in accordance with standard procedures and job instructions.
2. Construct road/track sub-base	2.1 Soil is removed manually or with the assistance of plant support to establish a base of suitable width, slope and stability. 2.2 Soil and waste removal is coordinated with plant operators and dumped or stored in accordance with standard procedures. 2.3 Soil is compacted or stabilised chemically or mechanically with the assistance of plant support. 2.4 Provision for drainage and crossing points is progressively made in accordance with standard procedures.
3. Construct road/track surface and drainage	3.1 Road/track base and other surface materials such as pierced steel plank (PSP) and locally won expedient materials are transferred, spread, compacted and laid/fixed to meet the planned road/track design in accordance with standard procedures. 3.2 Drains are provided and water run-off is established.
4. Construct crossings	4.1 Road/track surface is cut and prepared at crossing point using appropriate compaction. 4.2 Culverts are installed as required in accordance with the predicted volume of water. 4.3 Pipes or cords are placed and correctly backfilled and compacted.
5. Maintain road/track and refurbish work site	5.1 Condition of road/track is monitored in relation to volume of traffic, loads and expected future requirements.

	5.2 Damage likely to lead to safety or environmental issues is identified and repaired or immediately reported to supervisor. 5.3 Normal wear and tear damage repair is planned and carried out with minimal disruption to other activities. 5.4 Ineffective drainage is identified and modified as required.
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Required Skills and Knowledge

Required Skills

- interpret job instructions and plans, maps and overlays
- use power tools, hand tools, small plant and other engineering equipment
- measure relative to the construction process
- utilise expedient and improvised construction methods and materials
- follow instructions/directives and report information
- encourage other team members
- use a variety of verbal and non-verbal communication techniques including language style, active listening
- read and interpret job instructions, procedures manuals, job guides, field engineering pamphlets, technical specifications and manufacturer's specifications

Required Knowledge

- workplace and equipment safety requirements
- capabilities of small plant and equipment
- materials handling and storage
- expedient and improvised construction methods
- techniques for supporting others
- composition of teams and roles and responsibilities of team members
- verbal and non-verbal communication techniques including language style, active listening
- basic numeracy required to determine linear measurement, and number and placement of pegs

Evidence Guide

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

Assessment must confirm the ability to assist in the preparation, construction and maintenance of a number of lengths of road/track using a combination of locally won and pre-fabricated materials such as PSP. The road/track construction must include the installation of drainage and crossings.

Assessment must also confirm the ability to:

- assist in the construction of a road/track in accordance with job instructions and technical specifications
- use tools, plant and equipment
- construct drainage and crossings
- carry out road maintenance tasks
- interactively communicate and work in a team

Consistency in performance

Competency should be demonstrated over a time frame that allows for the preparation, construction and maintenance of roads and tracks under a range of field conditions.

Context of and specific resources for assessment

Context of assessment

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

Specific resources for assessment

Access to:

- road and track construction materials relevant to the task
- hand tools, power tools, plant and other equipment appropriate to the construction process
- suitable site/work/training areas for the construction of roads and tracks.

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.

<i>Personal protective equipment</i> may include:	• boots • cap • dust masks/respirators • ear plugs/muffs • gloves • hard hat • high visibility vest • safety glasses/goggles
<i>WHS requirements</i> may include:	• manual handling of materials • use of protective clothing and equipment • workplace environment and safety
<i>Tools and equipment used in construction</i> may include:	• equipment and non-equipment bridging • fabricated and pre-fabricated materials for surfaces and culverts • hand and power tools • small plant equipment supplemented, when required and available, by medium/heavy road construction plant and operators
<i>Laying out of road/track line</i> may include:	• line of sight • marking/blazing trees • pegs • string
<i>Clearance of road line</i> may include:	• felling trees • pulling stumps • shifting rocks
<i>Standard procedures and instructions</i> may include:	• standing orders, routine orders, procedures manuals, job guides, field engineering pamphlets and other publications • technical specifications and manufacturer's specifications • written and verbal orders and instructions, job instructions
<i>Road/track base and surface materials</i> may include:	• cords and pipes • crushed rock • expedient surfacing materials won locally • other materials typically used for road/track construction • pierced aluminium plank (PAP) • pierced steel plank (PSP) • pre-fabricated culverting

	• sand • sandbags • trackway
Road/track base design requirements must include:	• camber • depth • length • width

Unit Sector(s)

Not applicable.