



Australian Government

DEFCA321 Assist in the construction of wet gap crossings

Release: 1

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Modification History

Release	TP Version	Comments
1	DEF12 V2	First release. Replaces and is equivalent to DEFCA305B. Assist in the construction of wet gap crossings. 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, operation and recovery of wet gap crossing bridging equipment, including:

- floating support bridges
- fixed floating span equipment
- ferry equipment (captive and free)
- floating support bridge
- rafts
- improvised floating structures

to cross rivers and other wet gaps to facilitate the movement of personnel, vehicles, cargo and equipment.

Wet gap crossing is defined as a bridge that is physically supported by the water, i.e. through pontoons and associated buoyancy measures. Bridges will normally be constructed on a temporary basis to meet the operational need to provide a crossing point over a gap for personnel and equipment. When the crossing is no longer required the bridge is either recovered to storage or redeployed to another crossing.

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, operation and recovery of wet gap crossing bridging equipment, including floating support bridges, to cross rivers and other wet gaps to facilitate the movement of personnel, vehicles, cargo and equipment in a deployed operational environment but is applicable to any individual in this field of work.

The individual will usually be engaged in bridge construction as part of a team under supervision, but may undertake some autonomous tasks.

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

ELEMENT

Elements describe the essential outcomes of a Unit of Competency.

PERFORMANCE CRITERIA

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 Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

<p>1. Construct wet gap crossing equipment</p>	<p>1.1 Appropriate <i>personal protective equipment</i> is selected and worn in accordance with WHS requirements.</p> <p>1.2 <i>Site layout and preparation</i> is conducted in accordance with <i>standard procedures</i>.</p> <p>1.3 All wet gap crossing bridging components are checked against the inventory and materials list for completeness and are prepared for operation with faults and deficiencies reported to the supervisor.</p> <p>1.4 <i>Tools and equipment</i> required for the task are selected, checked for serviceability and faults are reported to the supervisor.</p>
<p>2. Construct wet gap crossing equipment</p>	<p>2.1 Jigs, fixtures and equipment to be used in construction are assembled and adjusted ready for use.</p> <p>2.2 Bridge components are assembled and checked for compliance, accuracy and alignment in accordance with standard procedures.</p> <p>2.3 Equipment is operated in accordance with standard procedures.</p>
<p>3. Maintain and clean up site and equipment</p>	<p>3.1 Gap crossing sites and crossing systems are maintained in accordance with standard procedures.</p> <p>3.2 Gap crossing equipment, tools and unused materials are recovered, cleaned, maintained and documentation is completed, with any faults and deficiencies reported in accordance with standard procedures.</p> <p>3.3 Gap crossing equipment, tools and materials are either stored or redeployed to another site in accordance with standard procedures.</p>

Required Skills and Knowledge

Required Skills

- interpret plans and job instructions
- manually handle construction materials and heavy bridging components
- work with plant
- follow instructions/directives and report information
- participate in team
- encourage other team members
- use a variety of verbal and non-verbal communication techniques including language style, active listening

Required Knowledge

- WHS workplace and equipment safety requirements
- materials handling while operating tools
- site safety while working with plant
- anchorage systems, knots and lashings
- 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

Evidence Guide

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

Assessment must confirm the ability to assist in the construction of at least two wet gap crossings using two types of wet gap crossing bridging equipment listed in the Range Statement. Individuals should be assessed participating in the construction of:

- one gap crossing with a span of at least 30 metres
- one crossing at night.

Assessment must also confirm the ability to:

- prepare a crossing site
- check components, tools and equipment for serviceability and completeness
- participate in the assembly, construction operation and recovery of various types of crossing systems
- communicate effectively and work as part of a team.

Consistency in performance

Competency should be demonstrated under field conditions over a time frame that allows for individuals to be assessed in the various tasks related to the construction of at least two wet gap crossings using two types of equipment listed in the Range Statement.

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:

- wet gap crossing equipment and components (fixed floating span equipment; ferry equipment; floating support bridge; rafts; improvised floating structure)
- tools, plant, equipment and materials required to support the operation of wet gap crossing equipment including the construction of supporting devices such as aerial ropeways
- wet gap area for training area
- transport, small watercraft, plant and operators.

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.

<p><i>Personal protective equipment</i> may include:</p>	<ul style="list-style-type: none"> • boots • dust masks/respirators • ear plugs/muffs • gloves • hard hat/cap • life vests • safety glasses/goggles
<p><i>WHS requirements</i> may include:</p>	<ul style="list-style-type: none"> • safe handling and storage of materials • safe use of tools and equipment • safe working on water and floating structures • use of protective clothing and equipment • workplace operations and safety procedures
<p><i>Site layout and preparation</i> may include:</p>	<ul style="list-style-type: none"> • compacting the soil and stabilising entry and exit points • constructing approaches including access roads and tracks • determining datum line • marking out site • positioning components and materials for assembly • preparing site plan • removing vegetation
<p><i>Standard procedures</i> may include:</p>	<ul style="list-style-type: none"> • technical specifications • wet bridging equipment procedures manuals, manufacturer's handbooks, job instructions, field engineering pamphlets and other publications • written and verbal orders and instructions
<p><i>Tools and equipment</i> may include:</p>	<ul style="list-style-type: none"> • anchorages • clamps • expedient road and tracking i.e. materials obtained locally to construct improvised roads and tracks • hand and power tools • jigs • measuring tape/rule • mechanical advantage devices, including blocks and tackle • small plant equipment • spirit level

	<ul style="list-style-type: none">• straight edge• string lines• watercraft• weights
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Unit Sector(s)

Not applicable.