



Australian Government

PUASAR034 Undertake swiftwater and floodwater rescue and recovery

Release 2

PUASAR034 Undertake swiftwater and floodwater rescue and recovery

Modification History

Release	TP Version	Comments
2	PUA12 V2.1	Editorial changes.
1	PUA12 V2	New unit.

Unit Descriptor

This unit covers the competency required to undertake swiftwater and floodwater rescues and recoveries as a member of a specialist team.

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

Application of the Unit

This unit applies to personnel who are skilled operators who apply the full range of rescues within a swiftwater and floodwater environment, using some discretion and judgement and relevant theoretical knowledge. They may provide technical advice and support to a team and may adopt a leadership role during the rescue.

A person operating at this level will not be performing under direct supervision.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

PUASAR033 Perform land based swiftwater and floodwater rescue and recovery

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

1. Prepare and respond to the rescue

PERFORMANCE CRITERIA

- 1.1 Operation and task information is obtained from communication centre or supervisor.
- 1.2 **Rescue equipment/resources** are identified and selected based on incident information received.
- 1.3 **Personal protective equipment** is selected based on the nature of the rescue operation.
- 1.4 Any further details of the nature of the rescue are received en route.
- 1.5 Anticipated **situational and environmental hazards** are discussed with rescue team members while on approach and are used as the basis for the development of a rescue plan.

2. Assess the rescue scene

- 2.1 Information is collected from **relevant persons** at scene and observations are made of the scene to determine location, number, **entrapment** and condition of casualties.
- 2.2 Risk assessment on situational and environmental hazards is conducted and control measures to ensure safety to self, other team members and casualty are developed.
- 2.3 **Communication** with other team members is maintained during assessment to gather further information from their observations.
- 2.4 Request for additional personnel and/or specialist equipment based on risk assessment is reported to supervisor in accordance with the recognised chain of command
- 2.5 Personal capabilities and limitations of self and other team members are recognised and referred to the supervisor, based on assessment of rescue scene.

3. Develop primary and secondary rescue plans

- 3.1 **Rescue and recovery techniques** suitable to the casualty condition, entrapment, location and swiftwater and floodwater conditions are identified.
- 3.2 Primary and secondary rescue plans are developed based on risk assessment, identification of appropriate rescue and recovery techniques and consultation from team members and **other agencies**.
- 3.3 Equipment and resources are selected to perform rescues and recoveries as identified by the rescue plan.
- 3.4 Job roles and equipment are allocated to other team

	members.
	3.5 In conjunction with the primary plan, deployment of secondary rescue plan downstream is implemented and is acted upon.
4. Use rope and mechanical advantage systems	4.1 Situations requiring the use of rope system and mechanical advantage systems are identified. 4.2 Type of system required is based on the situation, and organisational policies and procedures. 4.3 Suitable rope and mechanical advantage systems are established to perform rescues and recoveries in a range of situations. 4.4 System equipment is used in accordance with manufacturer recommendations and organisational policies and procedures, to ensure that design limits are not exceeded. 4.5 System is modified to increase efficiency, where necessary, and communication is maintained throughout.
5. Gain access and perform rescue on casualty	5.1 Isolation techniques are used to stabilise positioning of casualty to assist in extrication and management of conscious casualty. 5.2 Craft is tethered to perform a rescue or recovery, where required by the rescue plan. 5.3 Rescue techniques and equipment are deployed to gain access to casualty as identified in the rescue plan. 5.4 Rescue plan is implemented and casualty is extricated from entrapment or secured by using rescue and recovery techniques and equipment.
6. Remove casualty from swiftwater and floodwater	6.1 Casualties are retrieved from swiftwater and floodwater using techniques for removal in accordance with organisational policies and procedures. 6.2 Casualty is packaged and handled in accordance with organisational emergency care procedures, or as directed by first aid or medical personnel.
7. Conclude swiftwater and floodwater rescue	7.1 Prior to leaving the scene, equipment is recovered, cleaned and maintained in accordance with manufacturer guidelines and organisational procedures. 7.2 During cleaning of rescue equipment and personal protective equipment, hygiene procedures are followed in accordance with organisational procedures.

- 7.3 Where identified, signs and symptoms of operational stress in self and others are recognised and reported to appropriate personnel.
- 7.4 **Operational debrief** is participated in or conducted, in accordance with role during rescue.
- 7.5 **Documentation** is completed to **organisational standards** and job role.

Required Skills and Knowledge

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

Required Skills

- anticipate, identify and mitigate hazards and risks
- apply aggressive, manoeuvring and defensive swimming techniques to escape hazards
- apply entrapment rescue techniques
- apply first aid
- apply search techniques and implement search management procedures
- apply wading techniques
- contact rescue
- determine rescue and recovery methods to use according to the routine situation
- handle and package patient
- handle non-powered boat/craft safely
- identify changes in casualty condition and position
- identify changes in water flow, currents, eddies and other hydrological features
- inform appropriate people of progress
- interact with other members of the rescue team, casualty and others
- manage spinal injuries in the context of swiftwater and floodwater incident
- operate in a range of conditions and climates
- select equipment and resources
- swim aggressively and defensively
- throw equipment to reach a swimmer in swiftwater and floodwater
- use rope and mechanical advantage systems
- use knots and anchors
- work as part of a team and support others in the rescue operation

Required Knowledge

- behaviour of vehicles trapped in swiftwater and floodwater
- composition of team, and roles and responsibilities of team members

- environmental considerations based on whether operating in an urban or rural context
- first aid hazards and risks associated with rescues and recoveries for swiftwater and floodwater
- helicopter operations
- organisational communication techniques used during rescue operations
- potential contaminants in water and their potential impact on the rescuer and casualty
- principles of risk assessment including hierarchy of control and control methods
- psychological considerations of swiftwater and floodwater rescue for the rescuer, casualty (normal survivor behaviour, panic, counter-panic casualty, instinctive drowning response), onlookers and the potential need for support resources
- relevant legislation, and organisational policies and procedures to enable safe conduct of all swiftwater and floodwater rescue and recovery activities
- rescue and recovery equipment, characteristics, advantages and disadvantages, and its care and maintenance to enable appropriate selection and use
- rescue rating system
- signs and symptoms of operational stress
- swiftwater and floodwater hydrology and basic meteorology and the impact this will have on water flow

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

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

Assessment must confirm the ability to:

- undertake risk assessment to determine and implement control measures
- develop and implement appropriate primary and secondary plans for rescue being undertaken
- use mechanical advantage system to conduct rescue or recovery
- apply organisational policies and procedures relating to swiftwater and floodwater rescue

Context of and specific resources for assessment

Context of assessment

Competency should be assessed conducting rescues and recoveries in swiftwater and floodwater relevant to the job role and of sufficient breadth to demonstrate competency.

Method of assessment**Specific resources for assessment**

Access is required to:

- swiftwater and floodwater location
- personnel for team based rescues
- rescue, recovery, safety, first aid and activity-specific equipment and resources

Assessment should be conducted by direct observation in either the workplace (through recorded subject matter supervision and/or mentoring) or the training environment.

Assessment may occur in an operational environment or in an industry-approved simulated work environment.

Forms of assessment that are typically used include:

- direct observation
- interviewing the candidate
- journals and workplace documentation
- third party reports from supervisors
- written or oral questions

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.

Rescue equipment/resources must include:

And may also include:

- carabiners
- descender
- first aid equipment
- float ropes
- life rescue ropes
- non powered water craft
- paddles
- portable radios
- prussiks
- pulleys
- stretchers
- tapes/webbing
- throw bags
- vehicle

Personal protective clothing and equipment must include:

- ascenders
- cyalume sticks
- flares
- harnesses
- helicopters
- hose inflators and encaps
- electrical detection devices
- line throwing device
- loud hailer
- sledge hammer
- steel pickets for anchoring
- appropriate footwear including bootees
- appropriate personal floatation devices
- eye protection
- gloves
- wetsuit and/or dry suit
- whistles

And may include

- fins
- headlamps
- helmet appropriate for swiftwater and floodwater
- hoods
- knives
- lycra suit
- mask
- torches
- wet shirt
- wet weather gear

Situational and environmental hazards may include:

- adverse water conditions
- availability of assistance
- below surface debris hazards
- biological contaminants
- boat wraps
- confluence
- culverts
- cushions and/or stacked water cushions
- diseases and infections
- downstream and upstream vs
- eddies
- entrapment hazards
- haystacks and standing waves
- holes, stoppers and keepers
- inundation

Relevant persons may include:

Entrapment may include:

Communication may include:

- lightning
- low visibility
- manholes
- overhead hazards
- rocks
- snakes and other dangerous animals
- strainers
- surface debris hazards
- undercuts
- utilities – electrical
- water borne hazards
- water contaminants
- water hydraulics
- waterfalls
- water depth
- weirs
- bystanders
- other agencies
- other casualties
- body
- Person static on object (e.g. tree)
- Person in/on vehicle in water
- Person with limb pinned
- recirculation
- rope entanglements
- hand signals
- radio
- verbal
- whistle signals
- written documents

Rescue and recovery techniques must include:

And may also include:

- contact rescue
- defensive swimming position
- entrapment rescue techniques
- line crossing techniques
- mechanical advantage system
- offensive or aggressive swimming position
- reach rescue techniques
- throw bag rescue technique

Other agencies may include:

Mechanical advantage systems may include:

Organisational policies and procedures must include:

And may also include

Isolation techniques may include:

Conscious casualty is:

Craft may include:

- inflatable fire hoses techniques
- boat and rope rescue system
- paddle boat handling
- shallow water crossing technique
- vehicle rescue techniques
- ambulance service
- fire service
- interagency departments
- police
- state emergency service
- 4 to 1 mechanical advantage
- vector pulls
- Z rigs
- communication protocols
- emergency care
- rescue rating framework
- removal of casualties
- use, maintenance and storage of equipment
- access to workplace health and safety
- access to medical personnel
- code of ethics
- manufacturer design specifications and recommendations for equipment use
- hand signals
- yelling
- a casualty who is able to follow commands and assist in stabilising their position
- flood rescue boats
- inflatable rescue boat
- motorised inflatable work platforms
- rafts

<i>Tethering a craft</i> may include:	• high line with a craft on tether system • two and/or four point boat tether system
<i>Extricating a casualty from entrapment</i> may include:	• alternate entries • controlled release • immediate release
<i>Techniques for removal</i> may include:	• manual carry • stretcher
<i>Packaging and handling a casualty</i> may include:	• extrication device • stiff neck collar • spinal board
<i>First aid or medical personnel</i> may include:	• doctors • first aider • nurses • paramedics
<i>Operational debriefs</i> may include:	• areas where improvements can be made • organisational strengths that can be built on • validation of the participation of teams and individuals
<i>Documentation</i> may include:	• accident/injury report • incident report forms • risk assessment forms
<i>Organisational standards</i> may include:	• documentation to meet another agency's operational requirements

Unit Sector(s)

Not applicable.