



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PUASAR029A Undertake a complex transport rescue**

**Revision Number: 2**

## PUASAR029A Undertake a complex transport rescue

### Modification History

Release	TP version	Comments
2	PUA12 V1	Layout adjusted.
1	PUA00 V8.1	First release in TGA.

### Unit Descriptor

This unit covers the competency required to gain access to and extricate entrapped casualty/s from transport such as trains, trams, light aircraft (as defined by CASA) and self propelled heavy plant while minimising the potential for further injury and preserving the integrity of evidence.

This unit requires the responder to access entrapped casualty/s using a range of techniques and to operate specialist equipment to undertake the rescue.

This unit is designed to build on the skills and knowledge acquired in the competency PUASAR024A Undertake road crash rescue to extend the capability of a rescuer to perform rescues from trains, trams, light aircraft and self propelled heavy plant.

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

### Application of the Unit

This unit applies to a member of a rescue team.

This unit may be customised to suit a range of complex transport incidents based on an organisational risk profile.

### 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 for complex transport rescue	1.1 Operation and <i>task information</i> is obtained and assessed upon call out. 1.2 Appropriate <i>rescue resources</i> are identified and selected based on incident information, received and checked to ensure they are ready for use. 1.3 Personal protective equipment (PPE) and clothing are selected based on nature of transport and type of collision. 1.4 <i>Systematic approach</i> to identifying <i>potential hazards and associated risks</i> is undertaken en route and on approach to the incident.
2. Establish and maintain rescue scene safety	2.1 <i>Communication</i> and ongoing liaison with rescue team members on site is established. 2.2 Liaison with <i>other relevant personnel</i> is established and maintained. 2.3 Rescue scene reconnaissance and size up is conducted. 2.4 <i>Situational</i> and <i>environmental hazards</i> are identified, analysed, evaluated and <i>treated</i> , marked and monitored. 2.5 Rescue team is positioned taking into account <i>potential dangers</i> , requirements for personnel and vehicles to <i>access the scene</i> , and <i>limitations of operating equipment</i> . 2.6 <i>Functional areas</i> are established to support operations. 2.7 <i>Warning devices</i> are placed at appropriate distances from the scene to alert to approaching traffic of hazards or adverse road conditions. 2.8 Safe work area is established to protect casualty/s, emergency services personnel and members of the public. 2.9 Preventative action is taken to minimise the risk of fire or other potential hazards, where required. 2.10 <i>Impact effects on transport</i> and potential impact effects <i>on casualty/s</i> are assessed. 2.11 Techniques and equipment are employed to <i>stabilise the transport</i> and to make the incident site safe. 2.12 Scene lighting is established to reduce hazards associated with type of incident. 2.13 Specialist rescue resources are accessed based on the assessment of the incident.

ELEMENT	PERFORMANCE CRITERIA
3. Gain access to casualty/s	<p>3.1 <i>Hygiene precautions</i> are implemented in accordance with organisational requirements.</p> <p>3.2 Techniques and equipment are used to <i>gain access to entrapped casualty/s</i> within the vehicle/s.</p> <p>3.3 <i>Primary survey</i> of casualty is undertaken to determine injury type and severity.</p> <p>3.4 Injuries are confirmed that may complicate removal of the casualty/s from the vehicle and appropriate action is taken.</p> <p>3.5 In the event of multiple casualties, triage assessment is undertaken to determine priorities for medical treatment and for extrication.</p> <p>3.6 Need for additional personnel and/or specialist equipment is requested.</p> <p>3.7 Support is provided to medical personnel assisting with the treatment of the entrapped person/s as required.</p>
4. Extricate casualty/s	<p>4.1 Casualty/s are protected from injury during extrication.</p> <p>4.2 <i>Treatment of located casualty/s</i> is undertaken in consultation with medical personnel and in accordance with organisational policies.</p> <p>4.3 Rescue techniques and equipment used by the rescue team take into account <i>transport design</i>, materials and safety features that may impact on the extrication.</p> <p>4.4 Casualty/s are removed using <i>recognised techniques</i> and <i>equipment</i>.</p> <p>4.5 Located casualty/s are released, treated and stabilised.</p> <p>4.6 Evidence of casualty identity is collected and processed in accordance with organisational procedures.</p> <p>4.7 Appropriate actions are taken to preserve the incident scene where possible for evidentiary purposes.</p>
5. Conclude rescue operations	<p>5.1 Equipment is <i>recovered, cleaned and serviced</i> according to manufacturers' guidelines and organisational standards.</p> <p>5.2 Fatigue and operational stress of team members is monitored and action taken to address identified issues.</p> <p>5.3 <i>Signs</i> and <i>symptoms</i> of <i>operational stress</i> in self and others are reported to relevant personnel.</p> <p>5.4 Operational <i>debrief</i> is attended and <i>documentation</i></p>

**ELEMENT****PERFORMANCE CRITERIA**

- is completed to organisational standards.
- 5.5 *Hygiene precautions* are implemented in accordance with the organisational procedures.
- 5.6 Exposure records are completed.

## Required Skills and Knowledge

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

### Required Skills

- apply transport stabilisation techniques
- establish functional areas
- extricate casualties safely
- handle stretchers safely
- implement safety procedures for 'height safety operations' in accordance with organisational procedures
- isolate transport utilities
- operate equipment to access entrapped casualty/s in accordance with organisational procedures
- undertake a primary survey
- wear PPE and clothing in accordance with organisational requirements
- work within the responsible agency's command and control structure

### Required Knowledge

- complex transport design and safety features
- capabilities and limitations of rescue equipment
- command and control structure
- electrical hazards
- hazard identification and dynamic risk assessment recording
- hazardous materials procedures
- hygiene precautions relative to biological contamination
- injury prevention and minimisation
- manual handling
- organisational procedures for cleaning and discarding equipment in terms of environmental management and sustainability
- primary survey
- procedures for gaining access to entrapped casualties in different types of complex transport
- procedures for preservation of integrity of evidence
- procedures for reporting injuries and accidents
- relevant legislation
- safe work practices
- scene assessment procedures
- sectorisation
- situational and environmental hazards
- specific emergency entrance and exit procedures (doors/windows)
- standard operating procedures
- symptoms of physical/emotional stress

- systematic approach
- team stretcher handling procedures
- types of personal protective clothing and equipment
- types of collisions



## Evidence Guide

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

Assessment must confirm the ability to:

- apply a systematic approach to a complex transport rescue and to implement safe work practices throughout the incident
- safely and effectively gain access to entrapped casualties using techniques relevant to the type of complex transport rescue impact
- operate equipment to gain access to entrapped casualties in accordance with organisational procedures
- maintain situational awareness and be alert to environmental and situational hazards
- work effectively as a member of a rescue team

### Consistency in performance

Competency should be demonstrated over time in a range of actual and/or simulated workplace environments.

### Context of and specific resources for assessment

#### Context of assessment

Competency should be assessed in an industry-approved simulated and/or workplace environment.

#### Specific resources for assessment

Access is required to:

- simulation of a range of potentially complex transport mediums and their infrastructure
- equipment, personnel, facilities etc. appropriate to a complex transport rescue incident training exercise

### Method of assessment

In a public safety environment assessment is usually conducted via direct observation in a training environment or in the workplace via subject matter supervision and/or mentoring, which is typically recorded in a competency workbook.

Assessment is completed using appropriately qualified assessors who select the most appropriate method of assessment.

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.

***Task information*** may include:

- environmental and other hazards at the scene
- incident location and exact location of vehicles involved
- other public safety organisations at the scene or en route
- time of day and traffic obstructions caused by collision
- types and number of vehicles involved and potential number of casualties
- wind direction

***Rescue resources*** may include:

- air operated equipment
- ancillary equipment such as:
  - airbag restraints
  - stretchers
  - elevated platforms
- hot cutting equipment
- electrical equipment
- hand tools
- hydraulic equipment
- lifting and hauling equipment
- rescue units and stowed equipment
- stabilisation equipment
- tool boxes

***Personal protective equipment and clothing*** may include:

- boots
- eye protection
- gloves
- hearing protection
- helmets
- knee/elbow protection
- helmet

***Nature of transport*** may include:

- heavy plant e.g. bulldozers
- light aircraft
- trains

- trams

***Types of collision*** may include:

- heavy plant:
  - roll over
  - impact with stationary object
- light aircraft:
  - on take off and landing
  - mid-air collision (impact into rural/urban environment)
  - collision with structure
- trains/trams:
  - derailment
  - roll over
  - impact with another train
  - impact with electrical infrastructure
  - level crossing

***Systematic approach*** must include:

- assessment i.e. on call out and response, en route, scene, liaison, casualties
- positioning of vehicle i.e. dangers, access and casualties
- procedures i.e. dangers, casualty protection, extrication, warning devices and lighting

***Potential hazards and associated risks*** may include:

- downed powerlines
- fuel
- hazardous materials
- overhead hazards
- stability and position of vehicles involved
- traffic in and around the incident location
- unstable ground

***Communication*** may include:

- radio communications (radio, telephones and information technology)
- warning signals

***Other relevant personnel*** may include:

- ambulance officers
- company personnel
- emergency services personnel
- police
- technical specialists
- utility technicians
- vehicle passengers

***Rescue scene reconnaissance*** may include:

- collecting relevant information about casualty/s and hazards
- isolating and eliminating utilities
- surveying the incident scene

***Situational and environmental hazards*** may include:

- biological hazards such as body fluids and tissue
- climate
- composite fibres
- dangerous goods and hazardous substances
- different types of surfaces
- dust and wind
- noise and vibration
- overhead hazards such as falling debris, power lines
- pressurised containers
- pyrotechnic safety device
- structural instability
- sharp and jagged objects
- water and/or foam run off and oil

***Treating hazards*** may include:

- eliminating the hazard
- isolating the area/source
- stabilising overhead hazards
- using atmospheric monitoring equipment
- using ppe and clothing

***Potential dangers*** to be considered when positioning the rescue unit may include:

- downed power lines in the vicinity of the vehicle
- down wind of contaminants
- fuel
- hazardous materials and locations where they collect
- oncoming traffic
- stability and position of transport involved
- traffic in and around the incident location

***Accessing the scene*** must include:

- allowing clear access and egress for other responding vehicles and ambulances
- establishing a clear area to manoeuvre personnel, stretchers, charged hose lines and other equipment
- placing rescue vehicle at an appropriate distance
- specialist transport to move the equipment/personnel

***Limitations of operating equipment*** may include:

- access to incident site
- equipment capacities and limitations
- working on uneven and soft ground

***Functional areas*** may include:

- debris collection
- decontamination
- equipment
- personnel staging
- triage

***Warning devices*** may

- flashing lights

include:

- traffic warning cones

***Impact effects on transport*** may include:

- damage to onsite hazardous infrastructure
- frame deformation
- occupant cell/s
- structural integrity
- supporting infrastructure

***Impact effects on casualty/s*** may include:

- effect of types of collisions on the human body
- crush syndrome
- trauma

***Stabilising the transport*** may include:

- chains, slings and winches
- hydraulics
- monitoring stabilisation
- re-establishing mechanical braking systems
- using step chocks and cribbing blocks

***Hygiene precautions*** may include:

- avoiding contact with body fluids and tissue
- decontaminating equipment at scene and placing protective clothing and gloves in a sealed bag for special dry cleaning
- establishing decontamination areas
- using correct personal protective clothing and equipment
- using surgical gloves under protective work gloves

***Gaining access to entrapped casualty/s*** may include:

- accessing doors
- accessing emergency exits
- accessing front
- accessing roof
- accessing side
- managing electrical supplies
- managing glass
- removing debris

***Primary survey:***

- is a methodical process used to quickly identify immediate life threatening injuries and conditions that require intervention
- should be completed promptly upon initial patient contact if no immediate life threatening injuries and conditions requiring intervention are found during the survey
- should be completed as soon as possible if it is interrupted
- should only be interrupted when:
  - life threatening condition is identified and immediate life saving interventions are initiated
  - scene conditions require that the patient be moved immediately due to danger to first

| emergency care responders or the patient



***Treating located casualty/s*** may include:

- assist medical personnel with patient triage if required
- cervical collar
- first aid
- primary/secondary survey
- respiratory protection, if required

***Transport design*** may include:

- heavy reinforced compartment cell
- maintaining body rigidity
- major components such as frame (chassis), body parts, doors, windows, glass, seats, trim, removable panels, additional fittings and equipment, steering columns and wheels
- light framed composite material
- new safety systems
- two storey transport

***Recognised techniques*** may include:

- casualty packaging
- team stretcher handling

***Equipment for removing casualty/s*** may include:

- rescue/spine board
- stretchers appropriate for packaging in a range of situations

***Preserving the incident scene*** must include:

- disturbing only to gain access or make scene safe
- not disturbing fatality scenes until police investigation activities are completed
- preserving integrity of evidence

***Recovering, cleaning and servicing of equipment*** may include:

- checking inventories
- cleaning or disposing of contaminated clothing and equipment
- inspecting equipment for damage and serviceability

***Signs and symptoms of operational stress*** may include:

- anxiety
- critical incident stress
- fatigue
- flashbacks
- highly emotional behaviour
- physical discomfort
- poor concentration
- sleep disturbances

***Debriefing*** may include:

- critical incident stress debriefing
- operational analysis
- performance evaluations

***Documentation*** may include:

- AIRS/coroner report
- notebooks completed

***Hygiene precautions*** may include:

***Exposure records*** may include:

- operational debrief
- avoiding contact with body fluids
- decontaminating equipment and personnel
- washing hands
- wearing appropriate protective clothing
- reporting form that documents any exposure that may result in a short- or long-term associated injury such as:
  - hazardous substances, such as dust, vapours, fumes, radiation and chemical substances
  - heavy repetitive work over long periods of time
  - lifting heavy loads
  - noise
  - psycho-social hazards (e.g. critical incident stress)

## **Unit Sector(s)**

Not applicable.