



Australian Government

Department of Education, Employment and Workplace Relations

PUADEFCA311B Operate an inland tug boat

Revision Number: 1

PUADEFCA311B Operate an inland tug boat

Modification History

Not applicable.

Unit Descriptor

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This unit covers the competency required to operate an inland **tug boat** of up to ten metres. This Unit of Competency covers the operation of the tug while towing/pushing unloaded pontoons of up to thirty ton.

The watercraft will normally be driven in an **environment of protected or inland waterways**, while conducting a range of tasks including transporting personnel and/or equipment. While the technical aspects of this competency are concerned with 'operating a boat', the specialisation of the skill, and safety issues associated with waterborne operations confer additional responsibilities upon the operator.

For all **watercraft operations** the individual may need to provide directions to personnel within the boat concerning specific safety matters such as seating, movement and actions on incidents such as 'man overboard' and 'capsize'. The individual must demonstrate sound judgement in the use of authority, and where possible, work within the existing lines of authority. The individual will usually operate the boat with minimum supervision and command a crew of up to five persons.

To operate an inland tug boat, relevant state/territory and commonwealth licensing requirements must be met.

Application of the Unit

Application of the Unit

The application of this unit in the workplace - the environments, complexities and situations involved - will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

This text will be useful for the purposes of job descriptions, recruitment advice or job analysis; where possible, it will not be too job specific to allow other industries to import it into other Training Packages, where feasible.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite Unit/s

PUADEFCA304B Prepare, operate and maintain small watercraft

Employability Skills Information

Employability Skills

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

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1. Prepare for tug boat operations

- 1.1 **Operating instructions** are interpreted to determine the task, the cargo, the destination and route, and navigation data is compiled in accordance with **standard procedures**
- 1.2 Cargo weight is within the safe operating limit of the craft and manifests are completed to ensure passengers and cargo are safe to move in accordance with standard procedures
- 1.3 **Equipment** is selected, checked for serviceability and unserviceable items are replaced or rejected, and reported to supervisor in accordance with standard procedures
- 1.4 **Shore preparation** is conducted in accordance with standard procedures and watercraft is prepared and readied for launch
- 1.5 Appropriate personal protective equipment is selected and worn by all personnel in accordance with standard procedures

2. Drive tug boat

- 2.1 Passengers and crew are briefed on safety issues prior to embarking in accordance with standard procedures
- 2.2 Tug is launched safely in accordance with standard procedures and local conditions
- 2.3 Tug is loaded and trimmed to ensure safety of crew and craft in accordance with standard procedures
- 2.4 Tug is driven consistent with **hazards and environmental conditions**, and in accordance with standard procedures
- 2.5 Directions are provided, as necessary, to passengers in order to maintain safety and efficient boat operation in accordance with standard procedures
- 2.6 **Contingency and emergency drills** are carried out, as necessary, to minimise threat to personnel and equipment in accordance with standard procedures

3. Manoeuvre pontoon using tug boat

- 3.1 Crew are directed to assist with securing and manoeuvring of pontoon
- 3.2 Uncontrolled **pontoons** are captured, secured and controlled safely in accordance with standard

4. Recover and restore tug boat

procedures

3.3 Pontoons are manoeuvred and assembled in accordance with standard procedures

3.4 Supervisor's directions/commands are complied with to control the movement and momentum of the pontoon in accordance with standard procedures

4.1 Personnel and/or equipment are disembarked and/or unloaded safely in accordance with standard procedures

4.2 Tug is recovered safely in accordance with standard procedures from a ramp or expedient landing site

4.3 Tug and associated equipment are checked for serviceability, cleaned and serviced, defects are reported and documentation is completed in accordance with standard procedures

4.4 Debriefings are completed in accordance with standard procedures

4.5 Post activity reports and documentation are completed in accordance with standard procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

- apply launch and recovery procedures
- apply pre-start, start and stop procedures
- calculate and record number and weight of passengers, stores and equipment
- capture and control free-launched pontoons without damage to equipment
- constantly monitor hazards and apply safety principles to operations
- encourage other team members
- follow instructions/directives and report information
- read and interpret navigation charts
- read and interpret operating instructions
- use a variety of verbal and non-verbal communication techniques including language style, active listening
- use clear interpersonal communication as operator of the vessel
- use communications equipment
- use knots and lashings to secure watercraft
- work in a team

Required Knowledge

- anchorage methods and systems
- applicable statutory waterways rules for watercraft operation
- boat orders
- boat specific safety requirements and fire suppressant system
- complete equipment schedule list and locations
- controls and indicators
- effects of water moving over objects and obstacles
- emergency procedures
- environmental hazards of refuelling over water
- first aid
- forces acting on boats
- hasty buoyancy/floatation calculations
- launch and recovery procedures
- legal responsibilities
- local water hazards and environmental conditions
- methods for towing/pushing pontoons
- methods of connection/securing to pontoons
- night operation constraints
- operating boundaries

REQUIRED SKILLS AND KNOWLEDGE

- pre-start, start, stop procedures
- relevant legislation and procedures in relation to environmental requirements
- relevant OH&S regulations/requirements, equipment, material and personal safety requirements
- team work including 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

EVIDENCE GUIDE

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EVIDENCE GUIDE

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

Assessment must confirm the ability to safely drive a tug boat on various waterways under a range of environmental conditions without damaging the equipment. The operator must demonstrate the ability to manage the full range of contingency and emergency drills as listed in the Range Statement.

Assessment must also confirm the ability to manoeuvre a pontoon, with a minimum weight of five ton, by:

- towing
- pushing
- effectively directing crew.

Operation of the tug must be completed in a safe manner by day and night over a range of environmental conditions which must include:

- wind gusts of about 10 knots
- small swell
- varying currents.

Consistency in performance

Competency should be demonstrated over a time frame that allows for the preparation, launch, recovery, driving and maintenance of watercraft under a range of water operating conditions carrying personnel and cargo.

Context of and specific resources for assessment

Context of assessment

Competency should be assessed in the workplace or in a simulated work environment under conditions that safely replicate a range of conditions that could be expected in the workplace.

Specific resources for assessment

Access to crew (up to five people); tug boat and its equipment and accessories, including cargo; suitable inland waterways with access to flowing/tidal water; pontoons; and fuel.

Guidance information for assessment

Information that will assist or guide assessment will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

Range Statement

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.

Tug boat would normally be	A purpose built motorised vessel up to ten metres in length capable of manoeuvring pontoons and raft, with a maximum of five crew
Protected or inland waterways environment may include	By day or night and under illumination In all weather conditions Under a range of water conditions including sea states, in enclosed waters including tidal rivers, protected harbours, non-tidal rivers, lakes and dams
Watercraft operations may include	Compliance with waterways rules and regulations Driving the watercraft Engine start-up procedures Moving at a safe speed consistent with the conditions Navigating to destination Over water refuelling
Operating instructions may include	Access and egress routes Details of ramps or launching points Details of resupply or evacuation requirements Number and nature of personnel Potential hazards Sea states Tidal information Types of general cargo and weights Weather forecast
Standard procedures may include	Australian Standards Job guides, pamphlets and other publications Manufacturers' handbooks, industry specifications and technical instructions Occupational health and safety (OH&S) regulations

RANGE STATEMENT

	Organisational policies and procedures
	Relevant local government by-laws
	Relevant state/territory or federal legislation or regulations
	Written and verbal orders and job instructions
Equipment may include	Appropriate rescue and recovery equipment
	Buoys, fenders, etc.
	Communications equipment
	Personal protective equipment such as life jackets, gloves, helmet
	Ropes, hawser, cables, tensioners
	Safety equipment that may be required under state/territory legislation or standard procedures
	Vehicles and equipment used to transport tug
Shore preparation may include	Crew briefings
	Engine start-up procedures
	Launch procedures
	Loading of stores and equipment
	Non-technical inspection and reporting
	Positioning vessel on ramp or launching site
	Pre-start checks of engine
Hazards and environmental conditions may include	Adverse weather
	Eddies
	Fast flowing streams and near still waters
	Floating and submerged debris and snags
	Fog or drizzle
	Heat and cold
	Reduced visibility due to after dark operations
	Sea states
	Spillage
	Time constraints
	Undertows

RANGE STATEMENT

	Underwater hazards
	Wildlife
Contingency and emergency drills must include	Abandon ship drills
	Action on capsize
	Diagnosing and rectifying minor engine faults
	Fire drills
	Man overboard drills
	Propeller replacement
	Towing vessels
	Use of improvised rudder
	Use of oars/improvised oars
Pontoon may include	Bridge modules
	Raft
	Un-powered (disabled) vessel

Unit Sector(s)

Not applicable.

Corequisite Unit/s

Co-requisite Unit/s	Nil
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