



Australian Government

Department of Education, Employment and Workplace Relations

PUADEFSO002C Operate a sonar system

Revision Number: 1

PUADEFSSO002C Operate a sonar system

Modification History

Not applicable.

Unit Descriptor

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This unit covers the competency required to operate a sonar system as part of a team and under supervision.

It includes the requirement to configure the system, build and maintain the continuous collection, collation and analysis of information to track existing contacts or identify new contacts.

This activity could continue for a prolonged period requiring the operator to hand over effectively to another operator.

Application of the Unit

Application of the Unit

This unit was developed for Combat Systems Operators working within Defence but is applicable to any individual in this field of work.

Sonar systems are operated in a wide variety of environments and conditions. Typically operators work independently and as part of a team under direct and/or indirect supervision, 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

Employability Skills	This unit contains employability skills.
Pre-requisite Unit/s	Nil

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. Configure sonar system	1.1 Instructions are received from supervisor in accordance with <i>standard operating procedures</i> (SOPs) 1.2 <i>Serviceability</i> of <i>sonar system</i> is confirmed and any faults are reported to supervisor 1.3 Sonar display is <i>optimised</i> for operator use 1.4 <i>Outside environmental conditions</i> are determined and system is optimised accordingly 1.5 <i>Environmental tools</i> are used appropriately

ELEMENT**PERFORMANCE CRITERIA****2. Compile and maintain a sonar picture**

- 2.1 Information is collated and analysed to identify and discriminate sonar contacts
- 2.2 Information is continuously collected, collated and analysed to track contacts or to identify new contacts
- 2.3 Acoustic information is collected from *other sensors/sources* in accordance with organisational procedures
- 2.4 Sonar contact details are reported, displayed and disseminated to stakeholders in accordance with organisational procedures
- 2.5 Threats are responded to in accordance with organisational doctrine
- 2.6 *Problems or issues* beyond own operator capability are reported immediately to supervisor

3. Finalise operations

- 3.1 Sonar system operation is *transferred* to new operator as required or is ceased as directed by supervisor
- 3.2 System is secured and stowed in accordance with SOPS
- 3.3 Documentation is secured and stowed in accordance with standard organisational procedures
- 3.4 Report is made to supervisor on completion in accordance with SOPs

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 organisational doctrine
- calculate range predictions
- interpret environmental data
- optimise sonar equipment

Required Knowledge

- basic oceanography theory
- publications and logs
- relevant registered publications
- relevant SOPs
- sonar organisation
- sonar records
- sonar systems

Evidence Guide

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:

- maintain effective reporting procedures
- complete a minimum of ten hours of sonar systems operations, of which a minimum of three hours is contact time on a submerged contact (live or simulated)
- work within one's delegated authority.

Consistency in performance

Competency should be demonstrated over time that is sufficient to include dealings with a range and variety of situations.

Context of and specific resources for assessment

Context of assessment

Competency should be assessed in an actual workplace or in a simulated workplace environment.

Specific resources for assessment

Access is required to:

- documentation and resources normally used in the workplace.

EVIDENCE GUIDE

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

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.

Standard operating procedures may include

Australian Standards
 Job guides, pamphlets and other publications
 Manufacturers' handbooks, industry specifications and technical instructions
 Occupational health and safety regulations
 Organisational policies and procedures
 Relevant local government by laws
 Relevant state/territory or federal legislation or regulations
 Written and verbal orders and job instructions

Sonar system may include

Associated platform specific sonar systems:

- decoy equipment
- operating manuals and publications
- environmental tools
- sonar display

Fire control systems for underwater targets
 Underwater telephone

Serviceability of sonar system includes

Daily System Operability Tests (DSOTs)

Optimising a sonar display may include

Setting up for best performance
 Setting up to operator requirements

Outside environmental conditions may include

Biographical
 Man-made interference (deliberate and non deliberate)
 Oceanographical
 Topographical

Environmental tools may include

Expendable bathy thermograph
 Tactical environment support system

Other sensors/sources may

Combat data system

RANGE STATEMENT**include**

Electronic support
Underwater telephone, sono buoys
Visual

Problems or issues may include

Mechanical failure
Outside environmental conditions
Power failure
System failure
Tactical considerations

Transferring sonar system operation may include

Comprehensive hand over of current situation and system configuration

Unit Sector(s)

Not applicable.