



Australian Government

DEFSO002C Operate a sonar system

Release 2

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Modification History

Release	TP version	Comments
2	DEF12 V2	Layout adjusted.
1	DEF12 V1	First release.

Unit Descriptor

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

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

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

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

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.

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.

<i>Standard operating procedures</i> 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
<i>Sonar system</i> 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
<i>Serviceability of sonar system</i> includes:	• Daily System Operability Tests (DSOTs)
<i>Optimising a sonar display</i> may include:	• Setting up for best performance • Setting up to operator requirements
<i>Outside environmental conditions</i> may include:	• Biographical • Man-made interference (deliberate and non deliberate) • Oceanographical • Topographical
<i>Environmental tools</i> may include:	• Expendable bathy thermograph • Tactical environment support system
<i>Other sensors/sources</i> may include:	• Combat data system • Electronic support • Underwater telephone, sono buoys • Visual
<i>Problems or issues</i> may include:	• Mechanical failure • Outside environmental conditions • Power failure

	• System failure • Tactical considerations
<i>Transferring sonar system operation</i> may include:	• Comprehensive hand over of current situation and system configuration

Unit Sector(s)

Not applicable.