City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance (4808-30)

Version 1.1 (September 2024)

Qualification Handbook

Qualification at a glance

Subject area	Engineering
City & Guilds number	4808
Age group approved	Learners aged 16 or above
Entry requirements	City & Guilds does not set entry requirements for this qualification
Assessment	Aural Examination, Practical Demonstration/Assignment
Grading	Pass/Merit/Distinction
Approvals	This product is restricted to centres that work with the Ministry of Defence. Centres wishing to deliver this should contact their City & Guilds local office.
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	City & Guilds qualification number	Regulatory reference number	GLH	TQT
City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance	4808-30	603/2444/2	498	535

Version and date	Change detail	Section
1.0 September 2017	Initial version	All
1.1 September 2024	Handbook reviewed and updated to the new template	Throughout

Contents

1 Introduction

This document tells you what you need to do to deliver the qualification:

Area	Description
Who is the qualification for?	This certificate is aimed at learners who work in the Aerospace and Aviation sector as an survival equipment maintenance engineer within the Military.
What does the qualification cover?	The qualification allows candidates to learn, develop and practise the knowledge and skills required for employment and/or career progression in the Aerospace and Aviation sector within the Military.
What opportunities for progression are there?	On successful completion of the standard, candidates are able to progress to the Higher Technician Family of Apprenticeships, such as the Aircraft Maintenance Certifying Engineer Standard.
Who did we develop the qualification with?	These qualifications were developed by the Aerospace Engineering Trailblazer Employer Group led by BAE systems.
Is it part of an apprenticeship framework or initiative?	The qualification is included in the Apprenticeship standard Aircraft Maintenance Fitter/Technician (Fixed and Rotary Wing).

Structure

To achieve the City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance learners must achieve:

City & Guilds unit number	Unit title	GLH
Mandatory units:		
Learners must achieve all **one** mandatory unit.		
4808-301	Human Factors (HF) in a military aviation environment	35
Optional units:		
Learners must achieve **seven** units from the optional units.		
4808-302	Survival equipment engineering trade knowledge	120
4808-303	Survival equipment sewing tasks and maintenance of harnesses	60
4808-304	Survival equipment Aircrew Equipment Assemblies (AEA)	100
4808-305	Maintenance of rescue equipment and liferafts	90
4808-306	Maintenance of protective helmets and Night Vision Goggles (NVG)	50
4808-307	Introduction to survival equipment electrics and maintenance	80
4808-308	Maintaining aircrew oxygen systems	40
4808-309	Maintenance and packing of parachutes	40

Total Qualification Time

Total Qualification Time (TQT) is the number of notional hours which represents an estimate of the total amount of time that could reasonably be expected for a learner to demonstrate the achievement of the level of attainment necessary for the award of a qualification.

TQT comprises of the following two elements:

1) the number of hours that an awarding organisation has assigned to a qualification for guided learning

2) an estimate of the number of hours a learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by – but, unlike guided learning, not under the immediate guidance or supervision of – a lecturer, supervisor, tutor or other appropriate provider of education or training.

Title and level	GLH	TQT
City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance	498	535

2 Centre requirements

Approval

Full approval

This product is restricted to centres that work with the Royal Air Force. Centres wishing to deliver this should contact their City & Guilds local office.

To offer this qualification, new centres will need to gain both centre and qualification approval. Please refer to the document **Centre Approval Process: Quality Assurance Standards** for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualifications before designing a course programme.

Resource requirements

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area[s] for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal verifier, but cannot internally verify their own assessments.

Continuing professional development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and quality assurance, and that it takes account of any national or legislative developments.

Quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Quality assurance includes initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance. All external quality assurance processes reflect the minimum requirements for verified and moderated assessments, as detailed in the Centre Assessment Standards Scrutiny (CASS), section H2 of Ofqual's General Conditions. For more information on both CASS and City and Guilds Quality Assurance processes visit: the What is CASS? and Quality Assurance Standards documents on the City & Guilds website.

Standards and rigorous quality assurance are maintained by the use of:

- Internal quality assurance
- City & Guilds external quality assurance.

In order to carry out the quality assurance role, Internal Quality Assurers must

- have appropriate teaching and vocational knowledge and expertise
- have experience in quality management/internal quality assurance
- hold or be working towards an appropriate teaching/training/assessing qualification
- be familiar with the occupation and technical content covered within the qualification.

External quality assurance for the qualification will be provided by City & Guilds EQA process. EQAs are appointed by City & Guilds to approve centres, and to monitor the assessment and internal quality assurance carried out by centres. External quality assurance is carried out to ensure that assessment is valid and reliable, and that there is good assessment practice in centres.

The role of the EQA is to:

- provide advice and support to centre staff
- ensure the quality and consistency of assessments and marking/grading within and between centres by the use of systematic sampling
- provide feedback to centres and to City & Guilds.

Learner entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

Age restrictions

This qualification is approved for learners aged 16 or above.

Access arrangements and reasonable adjustments

City & Guilds has considered the design of this qualification and its assessments in order to best support accessibility and inclusion for all learners. We understand however that individuals have diverse learning needs and may require reasonable adjustments to fully participate. Reasonable adjustments, such as additional time or alternative formats, may be provided to accommodate learners with disabilities and support fair access to assessment.

Access arrangements are adjustments that allow candidates with disabilities, special educational needs, and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

Equality legislation requires City & Guilds to make reasonable adjustments where a disabled person would be at a substantial disadvantage in undertaking an assessment.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the Joint Council for Qualifications (JCQ) access arrangements and reasonable adjustments and access arrangements - when and how applications need to be made to City & Guilds. For more information documents are available on the City & Guilds website.

3 Delivering the qualification

Initial assessment and induction

An initial assessment of each candidate should be made before the start of their programme to identify:

- if the candidate has any specific training needs
- support and guidance they may need when working towards their qualifications
- any units they have already completed, or credit they have accumulated which is relevant to the qualifications
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the candidate fully understands the requirements of the qualification, their responsibilities as a candidate, and the responsibilities of the centre. This information can be recorded on a learning contract.

Inclusion and diversity

City & Guilds is committed to improving inclusion and diversity within the way we work and how we deliver our purpose which is to help people and organisations develop the skills they need for growth.

More information and guidance to support centres in supporting inclusion and diversity through the delivery of City & Guilds qualifications can be found here:

Inclusion and diversity | City & Guilds (cityandguilds.com)

Sustainability

City & Guilds are committed to net zero. Our ambition is to reduce our carbon emissions by at least 50% before 2030 and develop environmentally responsible operations to achieve net zero by 2040 or sooner if we can. City & Guilds is committed to supporting qualifications that support our customers to consider sustainability and their environmental footprint.

More information and guidance to support centres in developing sustainable practices through the delivery of City & Guilds qualifications can be found here:

Our Pathway to Net Zero | City & Guilds (cityandguilds.com)

Centres should consider their own carbon footprint when delivering this qualification and consider reasonable and practical ways of delivering this qualification with sustainability in mind. This could include:

- reviewing purchasing and procurement processes (such as buying in bulk to reduce the amount of travel time and energy, considering and investing in the use of

components that can be reused, instead of the use of disposable or single use consumables)
- reusing components wherever possible
- waste procedures (ensuring that waste is minimised, recycling of components is in place wherever possible)
- minimising water use and considering options for reuse/salvage as part of plumbing activities wherever possible.

4 Assessment

Assessment of the qualification

Candidates must:

- successfully complete centre devised assessment for each unit

Assessment strategy

City & Guilds has provided separate guidance for writers of centre-based assessments which should be read in conjunction with this document, entitled, **'GM1 - Developing centre devised assessments –** guidance for centre based assessment writers'.

A set of generic recording forms is also provided as follows:

- Assessment tasks (AD1)
- Assessment grading criteria (AD2)
- Assessment sign off form (AD3)
- Evidence recording form (GF1)
- Assessment unit front and mark sheet (GF2)
- Assessment task front sheet (GF3)
- Assessment unit mark sheet (GF4)
- Assessment feedback and action plan form (GF5)
- Qualification assessment tracking form (GF6)
- Group assessment tracking form (GF7)

A full explanation of the use of these forms can be found in the centre devised assessment writing guidance. All of this material is available to download from the City & Guilds website at http://www.cityandguilds.com/delivering-our-qualifications/centre-development/quality-assurance/quality-assurance-documents .

All centre-devised assessments need to be signed off by an EQA prior the candidate sitting the assessment.

Portfolio of evidence

Candidate and centres may decide to use a paper-based or electronic method of recording evidence.

City & Guilds endorses several ePortfolio systems, including our own, **Learning Assistant**, an easy-to-use and secure online tool to support and evidence candidates' progress towards achieving qualifications. Further details are available at **www.cityandguilds.com/eportfolios**.

City & Guilds has developed a set of **recording forms** including examples of completed forms for new and existing centres to use as appropriate. Recording forms are available on the City & Guilds website.

Although new centres are expected to use these forms, centres may devise or customise alternative forms, which must be approved for use by the external quality assurers, before they are used by candidates and assessors at the centre. Amendable (MS Word) versions of the forms are available on the City & Guilds website.

Evidence sources
A portfolio of evidence will typically include several pieces of evidence – it must contain sufficient evidence to demonstrate the knowledge and skills required for each appropriate unit.

Evidence sources may include:

- training logbooks
- centre-produced worksheets and activities
- annotated photographs
- video clips (maximum duration in total = 10 minutes)
- workplace documentation/records, for example job cards/job sheets, equipment check/maintenance/service records, parts order records.

This is not a definitive list; other evidence sources are permitted.

The evidence provided must be valid and attributable to the candidate; the portfolio of evidence must contain a statement from the centre confirming this.

Evidence **must not** include:

- any methods of self-assessment
- any employer contributions should focus on direct observation of evidence (for example witness statements) of competence rather than opinions.

Recognition of prior learning (RPL)

Recognition of prior learning means using a person's previous experience, or qualifications which have already been achieved, to contribute to a new qualification.

For this qualification, RPL is allowed and is not sector specific.

5 Units

Structure of the units

These units each have the following:

- City & Guilds reference number
- Title
- Level
- Guided learning hours (GLH)
- Unit aim
- Relationship to national occupational standards.
- Learning outcomes, which comprise a number of assessment criteria
- Supporting information

Guidance for delivery of the units

This qualification comprises a number of **units**. A unit describes what is expected of a competent person in particular aspects of their job.

Each **unit** is divided into **learning outcomes** which describe in further detail the skills and knowledge that a candidate should possess.

Each **learning outcome** has a set of **assessment criteria** (performance and knowledge and understanding) which specify the desired criteria that must be satisfied before an individual can be said to have performed to the agreed standard.

Range statements define the breadth or scope of a learning outcome and its assessment criteria by setting out the various circumstances in which they are to be applied.

Supporting information provides guidance of the evidence requirement for the unit and specific guidance on delivery and range statements. Centres are advised to review this information carefully before delivering the unit.

Unit 301 Human Factors (HF) in a military aviation environment

Unit level:	Level 3
GLH:	35
Unit aim:	This unit aims to give a working knowledge of the influence of HF in a military aerospace environment.
Relationship to NOS:	This unit is linked to the Aeronautical Engineering Level 2 NOS Units 001, 002 etc
Endorsed by:	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 know human factors and human performance limitations

Assessment criteria

The learner can:

1.1 state the meaning of the term Human Factors (HF)
1.2 describe the effects HF have on performance
1.3 describe the military requirements for HF
1.4 describe psychological limitations and their effects
1.5 describe physiological limitations and their effects
1.6 describe environmental limitations and their effects

Range

(AC1.1) **To include:**
Definition
Scope
Workable solutions

(AC1.2) **To include:**
Safety
Damage
Inefficiency

(AC1.3) **To include:**

Safety of Personnel
Safety of Assets
Long term health
Efficiency
Training

(AC1.4) **To include:**

Individual and group responsibility
Motivation
Peer pressure
Culture
Stress

(AC1.5) **To include:**

Illness
Injury
Tiredness

(AC1.6) **To include:**

Noise
Heat
Light
Fumes
Vibration

Learning outcome

The learner will:

2 understand managing factors in human factors

Assessment criteria

The learner can:

2.1 describe 'managing factors' and their effect on performance
2.2 describe the importance of checklists, procedures and documentation in HF management
2.3 describe techniques for effective management of emergencies and conflicts
2.4 describe techniques for effective management of workload
2.5 describe techniques to enhance the team's performance

Range

(AC2.1) **To include:**

Individual
Organisational
Techniques
Processes

(AC2.2) **To include:**

Rational
Context
Appropriate use

(AC2.3) **To include:**

Training
Priorities
Reporting

(AC2.4) **To include:**

Resource management
Planning
Monitoring
Managing distraction

(AC2.5) **To include:**

Team dynamics
Appropriate behaviour
Own effect
Leadership
Fellowship
Situational awareness
Decision making
Communication

Learning outcome

The learner will:

3 know potential factors

Assessment criteria

The learner can:

3.1 explain the effect potential factors have on performance
3.2 describe the interrelation between potential factors
3.3 describe why errors are made
3.4 describe the factors that contribute to errors being made

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Range

(AC3.1) **To include:**
Explain the effect potential factors have on performance
Describe the interrelation between potential factors
Describe why errors are made
Describe the factors that contribute to errors being made

(AC3.2) **To include:**
Case studies
Combinations
Impact
Risk Assessment

(AC3.3) **To include:**
Types of error
Error processes
Pressure
Reporting

(AC3.4) **To include:**
Individual
Organisational
Error management
Error reduction techniques

Learning outcome

The learner will:

4 know organisational regulation and guidance

Assessment criteria

The learner can:

4.1 describe the organisation's Safety Management System

4.2 describe the organisation’s health and safety policy

4.3 describe the organisation’s Just Culture and Disciplinary Policy

4.4 describe the components of effective safety reporting

Range

(AC4.1) **To include:**

- Location
- Contents
- Responsibilities
- Tools

(AC4.2) **To include:**

- Location
- Contents
- Responsibilities
- How to mitigate error
- Risk

(AC4.3) **To include:**

- Location
- Contents
- Responsibilities
- Error reporting

(AC4.4) **To include:**

- Necessity
- System
- Processes

Unit 301 Human Factors (HF) in a military aviation environment

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 302 Survival equipment engineering trade knowledge

Unit level:	Level 3
GLH:	120
Unit aim:	This unit aims to give a working knowledge of military Survival Equipment (SE) trade skills.

Learning outcome

The learner will:

1 understand the use of measuring equipment required for the Survival Equipment (SE) trade

Assessment criteria

The learner can:

1.1 identify and explain the purpose of basic measuring equipment
1.2 identify and describe the use of, and procedure for reading measuring equipment
1.3 explain the general purpose of non-adjustable gauges
1.4 identify and describe the use of non-adjustable gauges
1.5 explain the need for careful handling and storage of non-adjustable gauges

Learning outcome

The learner will:

2 know, select, use and control basic, torque and cutting tools required for the SE trade

Assessment criteria

The learner can:

2.1 describe the regulations for the management of hand tools in a Military Air Environment (MAE)
2.2 describe why hand tools are permanently marked, stored and how this is carried out
2.3 identify and explain the purpose of basic hand tools
2.4 explain the definition of torque and the purpose of the various types of torque loading tools
2.5 explain the need for the correct torque loading of threaded fasteners

2.6 describe the procedure for checking and setting the various types of torque wrenches / tools to specific torque loads

Learning outcome

The learner will:

3 understand the types and properties of engineering materials

Assessment criteria

The learner can:

3.1 describe the characteristics, properties and identification of engineering materials
3.2 describe how the composition and quality of metals used, are controlled by various authorities
3.3 identify the types and causes of corrosion

Learning outcome

The learner will:

4 understand the processes used to mark out, cut, shape, and drill materials required for the SE trade

Assessment criteria

The learner can:

4.1 explain the purpose of and use workshop drawings
4.2 set up and use suitable equipment to mark out supplied materials
4.3 select and use correct tools and equipment to measure, mark, cut and shape different materials
4.4 explain the main elements of the drilling process

Learning outcome

The learner will:

5 understand the different types of, and uses for, rivets, fasteners and screw threads

Assessment criteria

The learner can:

5.1 explain the differences in rivet materials and markings
5.2 explain the differences between commonly used rivet joints
5.3 describe the procedure for performing a simple riveting task at the bench using the correct tools and rivets

5.4 identify and explain the causes and effects of common riveting faults
5.5 describe the use of standard equipment locking devices
5.6 identify and describe selected nuts, bolts, screws, studs and washers
5.7 explain commonly used screw thread terminology

Unit 302 Survival equipment engineering trade knowledge

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 303 Survival equipment sewing tasks and maintenance of harnesses

Unit level:	Level 3
GLH:	60
Unit aim:	This unit aims to give a working knowledge of military Survival Equipment (SE) sewing tasks and maintenance of harnesses.

Learning outcome

The learner will:

1 understand the techniques required to carry out sewing machine repairs

Assessment criteria

The learner can:

1.1 explain the need for machine-sewn repairs and the procedures, legislation and precautions to be observed when carrying them out

1.2 identify and explain the purpose of the components and tools required to complete a sewing machine task

1.3 carry out sewing machine repairs to survival equipment

Range

(AC1.1) **To include:**

Repairs
Modifications
Manufacture or attachment
Current, relevant Digital Air Publications
Modifications, Routine Technical Instruction & Special Technical Instructions
Tool control procedures
Safety precautions:
- electric shock
- snagging hazard
- cuts and punctures
- CoSHH hazards

(AC1.2) **To include:**

Components of typical machine in current use:

- machine arm and bed
- table and electric motor
- pulley
- thread guides
- regulator
- reverse lever
- take up arm
- needle thread tension regulator
- presser bar, lever and foot
- needle
- needle bar

Authorised tools for machine and task

(AC1.3) **To include:**

Basic operation:

- posture
- eye line
- power application
- speed control
- basic lines on lined paper

Loading lower thread bobbin

Threading upper thread

Sew straight lines onto material

Overstitching

Corners

Common stitch patterns

Machine adjustments for correct sewing patterns

Adjustment of machine timing

Perform patch repair

Construction techniques

Learning outcome

The learner will:

2 understand the techniques required to carry out knot work on survival equipment

Assessment criteria

The learner can:

2.1 identify different cords and threads and understand their different uses

2.2 be able to construct a range of knots and ties

Range

(AC2.1) **To include:** Cords
Breaking strength
Threads
Thread count
Knots
Tie
Binding
Sealing

(AC2.2) **To include:**
Reef Knot
Double Reef knot
Thumb and stop knots
Bowline
Half hitch
Clove hitch
Larks head knot
Whipping

Learning outcome

The learner will:

3 understand the techniques required to carry out hand sewn and hardware repairs

Assessment criteria

The learner can:

3.1 understand the procedures, safety precautions and regulations to be adhered to when carrying out hand sewn and hardware repairs

3.2 describe the techniques required for relevant hand sewn repairs

3.3 carry out hardware repairs

Range

(AC3.1) **To include:**
Health and Safety Precautions:
- hand drill
- needles
- press fastener
- scissors

Tool control
Documentation

Current, relevant digital air publications
modifications, routine technical instruction & special technical instructions

(AC3.2) **To include:**
Stitching knots
Stitching pockets
Minor repairs
Darning
Herringbone stich

(AC3.3) **To include:**
Pack attachment devices
Press fasteners

Learning outcome

The learner will:

4 understand the techniques required to carry out maintenance on a restraint harness systems

Assessment criteria

The learner can:

4.1 understand the purpose and operation of the component parts of typical restraint harnesses
4.2 explain the principles of maintaining typical aircrew harness assemblies
4.3 explain the principles of maintaining typical passenger restraint harness assemblies

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Range

(AC4.1) **To include:**
Typical safety harness, for example:
- Type Z

Typical shoulder harness
Lap and diagonal straps
Passenger seat belts
Dispatcher safety harnesses
Stretcher harnesses
Ejection seat harness
Full body harness
Helicopter harnesses
Quick release buckles
Quick Release Fittings (QRFs)

(AC4.2) **To include:**

Current relevant DAPs
QRFs
Inertia reels
Safety precautions:
COSHH
Cadmium
Torsion springs
Dismantling and assembly

(AC4.3) **To include:**

Current relevant DAPs
Lap straps
Safety precautions:
COSHH
Cadmium
Lubrication
Dismantling and assembly

Unit 303 Survival equipment sewing tasks and maintenance of harnesses

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Speaking and listening
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 304 Survival equipment Aircrew Equipment Assemblies (AEA)

Unit level:	Level 3
GLH:	100
Unit aim:	This unit aims to give a working knowledge of military Survival Equipment (SE) Aircrew Equipment Assemblies (AEA).

Learning outcome

The learner will:

1 Understand the requirement for different types of life preserver and the precautions and techniques involved in their maintenance

Assessment criteria

The learner can:

1.1 Identify and explain the uses of the different life preservers currently in service

1.2 Explain the specific safety precautions and procedures to be observed whilst carrying out the maintenance of life preservers

1.3 Explain the requirements of different types of maintenance on a modular aircrew life preserver

1.4 Carry out maintenance on a life preserver

Range

(AC1.1) **To include:**

Fast jet flight jacket
Modular life preserver
Load carrying Jerkin
Current aircrew life preserver, for example:
- Mk 25, Mk 60, etc.
Passenger life preserver

(AC1.2) **To include:**

Pyrotechnics
COSHH
Maintenance data sheets
Current relevant DAPs

Avoidance of inadvertent activation of the emergency beacon

(AC1.3) **To include:** Scheduled maintenance
After last flight daily servicing
Out of phase maintenance

(AC1.4) **To include:**
Main component parts:
- waistcoat assembly
- waist adjustment
- lifting beckets
- crotch strap
- sleeves (if fitted)
- floatation assembly
- pouch
- water activated light/battery
- inflation equipment

Current relevant DAPs
Safety precautions
Tool control
Dismantle and reassembly
Aircrew cutter

Learning outcome

The learner will:

2 be able to undertake maintenance of Personal Locator Beacons (PLB)

Assessment criteria

The learner can:

2.1 explain the specific safety precautions and procedures to be observed whilst carrying out the maintenance of personal locator beacons

2.2 identify the component and describe the operation parts of typical locator beacons and associated test sets

2.3 carry out maintenance on typical locator beacons, including a pressure test

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Range

(AC2.1) **To include:**
Tool control procedures
COSHH
Lithium manganese dioxide battery packs

Current relevant DAPs
Informing ATC prior to transmission testing
Avoidance of inadvertent activation of the emergency beacon

(AC2.2) **To include:**
Covert emergency locator beacons
Electronics unit
Antenna
Battery pack
PLB Test Cabinet
Battery test unit
GPS facilities
Programming of codes and waypoints
Automatic operation
Manual operation

(AC2.3) **To include:**
Maintenance schedule
Signs of damage
Expiry date on battery pack
Self-test
Pressure test
Programming of codes and waypoints

Learning outcome

The learner will:

3 know the maintenance procedures for the maintenance of aircrew and Passenger Short Term Air Supply Systems (P/STASS)

Assessment criteria

The learner can:

3.1 explain the requirement of STASS and PSTASS and the differences between them
3.2 explain the purpose of component parts of a PSTASS assembly
3.3 explain the procedures and processes involved in the maintenance of a PSTASS

Range

(AC3.1) **To include:**
Current relevant DAPs
Short term Air supply (STASS)
Passenger Short Term Air Supply (PSTASS)

(AC3.2) **To include:**

Cylinder
Valve/ first stage reducer
Pressure gauge
Charging connection
Second stage regulator

(AC3.3) **To include:**

Current relevant DAP
Safety precautions
Tool control
Spares kit

Learning outcome

The learner will:

4 know the procedures for the maintenance of Immersion Protective Garments (IPG)

Assessment criteria

The learner can:

4.1 describe in-service Immersion protective garments and their uses
4.2 perform maintenance on an Immersion Protective Garment (IPG)

Range

(AC4.1) **To include:**

Quick-don coverall
Winch-man aircrew immersion garment
Aircrew immersion coverall
Immersion Protection Garment
Clothing layers
Materials
Hood
Relief valves
Boots
Fasteners
Straps
Valise
Folding and Packing

(AC4.2) **To include:**

Current, relevant DAPs
Tool control
Safety precautions
Immersion suit layers
Scheduled maintenance
After last flight daily servicing
Out of phase maintenance

Learning outcome

The learner will:

5 know the procedures for the maintenance of pressure garment and limb restraint systems

Assessment criteria

The learner can:

5.1 explain the operation of typical in-service limb restraint systems including active and passive systems

5.2 explain the specific procedures and safety precautions to be observed whilst carrying out the maintenance of pressure garments

5.3 describe the component parts of a typical in-service pressure garment and their uses

Range

(AC5.1) **To include:**
Single leg restraint
Single attachment ring
Double attachment ring
Arm restraint lines

(AC5.2) **To include:**
Current, relevant DAPs
COSHH
PPE
Pre-use checks
Risk assessments
Tool control
Documentation

(AC5.3) **To include:**
Full Coverage Anti-G trousers
Inflatable Foot Bladders

Anti-G trousers
Inflation systems
Sliding fasteners
Bladder cover
Bladder
Waistband

Unit 304 Survival equipment Aircrew Equipment Assemblies (AEA)

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 305 Maintenance of rescue equipment and liferafts

Unit level:	Level 3
GLH:	90
Unit aim:	This unit aims to provide learners with a detailed understanding of what is involved in the care and maintenance of liferafts and associated rescue equipment.
Relationship to NOS:	This unit is linked to the Aeronautical Engineering suite Level 3 NOS Unit 201.
Endorsed by	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 be able to undertake maintenance of in-service aircraft liferaft container assembly

Assessment criteria

The learner can:

1.1 identify in-service multi-seat liferafts and their components

1.2 perform maintenance and testing of a multi-seat liferaft

1.3 explain the operation of operating heads used to initiate inflation of multi-seat liferafts

Range

(AC1.1) **To include:**

Current Relevant DAPs
Current multi-seat liferaft types
Container types
Container Base
Cover flaps
Painter/operating line
Wing stowage
Bouyancy chamber
Floor
Canopy
Boarding ramp

Inflation equipment
Sea anchor
Integral bailers
Lamps
Rain water collection
Survival aids container

(AC1.2) **To include:**
Requirement
Safety precautions
Preparation
Dismantling
Disposal
Assembly
Temperature/Pressure tests
Buoyancy chamber pressure tests
Buoyancy chamber pressure relief valve test
Floor and seat ring pressure tests
Leak detection and repair procedures
Flashing beacon
Water activated lamp
Post testing requirements

(AC1.3) **To include:**
Operating head and valve assemblies
Release units
Discharge indicator
Operation

Learning outcome

The learner will:

2 know the maintenance procedures for an in-service Personal Survival Pack Assembly

Assessment criteria

The learner can:

2.1 describe in-service Personal Survival Packs (PSP) and their associated components
2.2 understand the procedures required to carry out maintenance of in-service PSP equipment
2.3 describe the maintenance and testing of in-service soft pack stowed single seat liferaft assembly

Range

(AC2.1) **To include:**

Current, relevant DAPs

Different types currently in service, their components and function:

1. Helicopter PSP
2. Ejection Seat PSP

Distress Signal

Water pouch

Automatic Liferaft Inflation Unit (ALIU)

Automatic Deployment Unit (ADU)

Single seat liferaft:

1. Buoyancy chamber
2. Floor
3. Canopy
4. Ancillary equipment

(AC2.2) **To include:**

Current, relevant DAPs

Types of maintenance:

1. Interim
2. Scheduled

Survival Aids maintenance:

1. Emergency rations and water
2. Medical kits
3. Matchless fire sets
4. Batteries
5. Reverse osmosis pump

Temperature/ Pressure tests

Procedures with test failures

(AC2.3) **To include:**

Current, relevant DAPs

Scheduled maintenance:

1. Liferaft
2. Survival aids
3. Inflation equipment
4. Temperature/ Pressure correction
5. Buoyancy chamber tests
6. PSP Packing
7. ADU

Learning outcome

The learner will:

3 understand in-service Aircraft Survival Pack and Emergency Escape Slide Assemblies

Assessment criteria

The learner can:

3.1 explain the uses, make up and maintenance of a survival pack

3.2 describe the use and maintenance of an in-service emergency escape slide assembly components

3.3 describe the use and maintenance of an in-service Survival Cot and its component parts

Range

(AC3.1) **To include:**

Types of survival pack currently in service
Different survival aids currently used
Materials
Design
Webbing and handles
Types of emergency pack
Current, relevant DAPs
Operation
Maintenance
Deficiencies
Component life

(AC3.2) **To include:**

Operational requirement
Slide assembly
Container assembly
Cylinder and valve assembly
Aspirator
Inspection
Testing
Current, relevant DAPs

(AC3.3) **To include:**

Buoyancy chamber
Arch assembly restrainer
Inflation system
Water activated battery and lamp assembly

Water pocket
Strop and tether
Current, relevant DAPs
Inspection

Learning outcome

The learner will:

4 be able to undertake maintenance of Search and Rescue (SAR) equipment

Assessment criteria

The learner can:

4.1 explain the requirement for Airborne Search and Rescue Apparatus (ASRA) and the function of the major components

4.2 explain the use and maintenance of in-service helicopter rescue equipment

Range

(AC4.1) **To include:** Used in Search and rescue aircraft
Dropped to survivors
Liferaft container
Supplies container
Inflation equipment
Operation
Triple sets
Double sets

(AC4.2) **To include:**
Helicopter Rescue Harnesses (HRH) currently in service
Current, relevant DAPs
Harness
Suspension strop
Extension strop
QRF Fasteners
Grabbit hook
Hi line transfer assembly
Stretcher assemblies
Safety precuations to be observed:
- COSHH
- PPE
- Risk assessments

Learning outcome

The learner will:

5 be able to undertake gas charging

Assessment criteria

The learner can:

5.1 explain in general terms the operation of a gas charging on an in-service cylinder

5.2 perform gas charging using an in-service charging rig

Range

(AC5.1) **To include:**

Hazards:

- Oxygen deficient environment
- heavy cylinders
- cold burn risk
- noise hazard
- skin penetration risk

Safety precautions:

- PPE
- local exhaust ventilation
- restraining cylinders
- COSSH Assessments
- current, relevant DAPs

(AC5.2) **To include:**

Purging
Blow down method
Charging rig eg Type PN 1959
Procedures
Testing for leaks
CO2/N2 charging
Sequence charging
Causes and consequences adiabatic compression

Unit 305 Maintenance of rescue equipment and liferafts

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military NVG equipment.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 306 Maintenance of protective helmets and Night Vision Goggles (NVG)

Unit level:	Level 3
GLH:	50
Unit aim:	This unit aims to provide learners with a detailed understanding of what is involved in the care and maintenance of NVG and associated equipment.
Relationship to NOS:	This unit is linked to the Aeronautical Engineering suite Level 3 NOS Unit 201.
Endorsed by	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 know the safety precautions applicable to NVG

Assessment criteria

The learner can:

1.1 state the hazards related to handling NVG Batteries

1.2 state the hazardous materials that can be found within the Image Intensifier Tube (IIT)

1.3 state the precaution to be taken when handling NVG IITs

Learning outcome

The learner will:

2 understand the different types of NVG equipment, their principle of operation and their uses

Assessment criteria

The learner can:

2.1 understand the uses of current in-service NVG equipment

2.2 explain the principles of operation of an Aircrew NVG

2.3 explain the control and usage of current in-service Image Intensifier Tubes (IIT)

Learning outcome

The learner will:

3 know the types of maintenance applicable to NVG

Assessment criteria

The learner can:

3.1 explain the types of maintenance applicable to NVGs and interpret the supporting documentation

3.2 carry out testing of NVG systems

3.3 remove and replace components of NVG systems

Learning outcome

The learner will:

4 be able to undertake the maintenance processes applicable to protective helmets

Assessment criteria

The learner can:

4.1 understand the requirement for protective helmets and their uses

4.2 explain the specific safety precautions and procedures to be observed whilst carrying out the maintenance of a protective helmet

4.3 describe the maintenance of a typical, in-service, protective helmet assembly

4.4 explain the uses, component parts and maintenance procedures applicable to headset assemblies

Unit 306 Maintenance of protective helmets and Night Vision Goggles (NVG)

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military NVG equipment.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 307 Introduction to survival equipment electrics and maintenance

Unit level:	Level 3
GLH:	80
Unit aim:	This unit aims to provide learners with a detailed understanding of basic electric theory and basic maintenance techniques.
Endorsed by	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 know the electrical principles that underpin survival equipment working practices

Assessment criteria

The learner can:

1.1 understand basic electrical theory
1.2 explain the sources of dc and ac power
1.3 measure current, voltage and resistance safely
1.4 carry out cable maintenance and termination tasks
1.5 carry out standard electrical serviceability tests required by the SE trade
1.6 comply with Test and Measuring Equipment (TME) procedures in an SE environment

Range

(AC1.1) **To include:**

The definitions, units, symbols and relationships between:
- current
- voltage
- resistance
- power

Common circuit symbols
Circuit protection
Cables
Hazards when working with electricity
Safety precautions

(AC1.2) **To include:**

Direct Current:

- batteries
- solar cells
- thermocouples

Alternating current

Battery types and uses

(AC1.3) **To include:**

Use of an ammeter

Use of a voltmeter

Use of an ohmmeter

Power on/off

Testing circuits containing explosive cartridges

Multimeter use

Safety ohmmeter use

Current, in-service DAPs

(AC1.4) **To include:**

Types of cable damage and their causes:

- scuffing
- abrasions
- cuts
- corrosion
- contamination
- overheating

Heat Shrink

Current in-service terminals and connectors

Crimping

Go-NoGo gauge

Wire stripping

Soldering:

- specific health and safety considerations
- techniques
- use of flux
- solder sleeve
- soldapullt tool

PTT policy and regulations

Correct documentation

Correct tool control procedures

(AC1.5) **To include:**

Use a headset tester:

- continuity
- insulation resistance
- microphone sensitivity
- earphones
- battery self-check

(AC1.6) **To include:**

TME policy and regulations
Tool control measures
Loose articles
Calibration policy and process
Hand torque tool policy
TME Maintenance:
- before use
- after use
- battery safety tests
- three monthly checks

Labelling
Documentation

Learning outcome

The learner will:

2 understand survival equipment policy and documentation procedures

Assessment criteria

The learner can:

2.1 describe current air safety and engineering policy applicable to the SE trade
2.2 describe current documentation and its uses
2.3 understand key information required to record maintenance

---

Range

(AC2.1) **To include:**

Current, relevant policy documentation e.g. MAP01, 02,
Define:
- air safety management systems
- airworthiness

Roles and responsibilities of:
- Continuing Airworthiness Management Organisation
- Duty holders
- SQEP
- Chief Air Engineer (CAE)

- Principal Engineer
- Subordinate Engineer

(AC2.2) **To include:**

Current, relevant policy documentation e.g. MAP01, 02

Define:

- flight safety
- airworthiness integrity
- individual responsibility
- full accountability

Maintenance document signature significance:

- individual responsibilities
- legally binding certificates
- signature implications
- electronic certification
- signature levels
- authorisations

Function of documentation:

- the serviceability state
- certify and record that work has been carried out
- historical record
- maintenance forecasts
- asset management and tracking

Role of continuous improvement and quality audit processes

(AC2.3) **To include:**

Servicing

Scheduled Maintenance

Condition-based Maintenance

Anticipation of scheduled maintenance

Deferment of scheduled maintenance

Information required for the family of maintenance documentation:

- Register of Controlled MOD Forms
- Non/Off Aircraft Maintenance Work Order Log
- Maintenance Work Order
- SE (Drill) Maintenance Record
- After Last Flight Daily Servicing (ALFDS) Register
- ALFDS Certificate
- Conditioning Labels
- Night Vision Goggle Record Card

Shift handovers

Task handovers

Role changes

Use of Logistics Information Systems (LIS)

Recording of Special Instructions (SI) and Aviation Local Technical Instructions (ALTI)

Learning outcome

The learner will:

3 know the health and safety policies and the hazards present in a survival equipment workplace

Assessment criteria

The learner can:

3.1 describe the role of station/unit health and safety organisation

3.2 identify radiation hazards in the workplace and describe the effects of radiation on the human body

3.3 explain health and safety activity guidance within an SE & AEA maintenance area

Range

(AC3.1) **To include:**

Unit Health, Safety and Environmental (HS&EP) Policy
Purpose of the H&S at Work Act
Responsibility of the employers
Responsibility of the employees
Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR):
- requirement
- policy
- process

(AC3.2) **To include:**

Ionising radiation:
- X-rays
- Gamma rays
- Alpha particles
- Beta particles

No-Ionising radiation:
- Optical radiation
- Electromagnetic fields

Effects of ionising radiation:
Impair function of tissues and/or organs
- skin redness
- hair loss
- radiation burns
- acute radiation syndrome

- long term risk of cancer

Effects of non-ionising radiation:

- skin burns
- damage tissue

Risk assessments

Current relevant publications

(AC3.3) **To include:**

Definition of Hazard

Relevant symbols and signage:

- prohibition
- warning:
  - aircraft armed
  - explosives
  - non-ionising radiation
- mandatory
- safety harness
- escape or first aid
- Foreign Object Damage/Debris (FOD)
- danger areas

Definition of Risk

ALARP

Manual Handling Operations Regulations (1992):

- employers must: avoid, assess, reduce
- manual handling technique

Relevant areas:

- parachute bays
- liferaft bay
- stretchers

Working at Height Regulations 2005 (WAHR)

Fire Safety:

- training
- prevention

Noise

Dangerous engineering substances:

- relevant maintenance data sheets
- current relevant hazardous substances information system e.g. JSP 515
- COSHH
- risks and associated first aid measures
- Personal Protective Equipment (PPE)
- ventilation

Airfield hazards:

- danger areas
- moving surfaces

- propellers and rotors
- arrestor hooks
- aerials
- engine intakes
- engine exhausts
- refuelling
- taxiing

Learning outcome

The learner will:

4 know the associated safety implications when working with gases

Assessment criteria

The learner can:

4.1 describe the health and safety implications of gas charging processes

4.2 explain the uses and handling processes required by the different gases encountered by an SE tradesman

Range

(AC4.1) **To include:**

Hazards:
- Oxygen deficient environment
- heavy cylinders
- cold burn risk
- noise hazard
- skin penetration risk

Safety precautions:
- PPE
- local exhaust ventilation
- restraining cylinders
- COSSH assessments
- manual handling
- current, relevant DAPs

(AC4.2) **To include:**

Different types of gas:
- Carbon Dioxide
- Nitrogen
- Oxygen
- breathing air

Cylinder identification

Direct inflation cylinders:
- disc bushing
- integral valve
- integral operating head
- life limitations

Cylinder markings
Charging bay requirements
Purging
Methods
Charging rigs
Liquid detection devices

Unit 307 Introduction to survival equipment electrics and maintenance

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the servicing of military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 308 Maintaining aircrew oxygen systems

Unit level:	Level 3
GLH:	40
Unit aim:	This unit aims to give a working knowledge of military Survival Equipment (SE) maintained aircrew oxygen systems.
Endorsed by	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 understand the requirement for the different types of oxygen mask assemblies

Assessment criteria

The learner can:

1.1 identify and explain the uses of the different oxygen mask assemblies currently in service

1.2 explain how oxygen mask assemblies work

Range

(AC1.1) **To include:**

Current in service oxygen masks

Platform specific oxygen masks, for example:

- Typhoon, (Advanced Dynamic Oxygen Mask (ADOM))

Life Support Oxygen Mask

Emergency Oxygen Masks, for example:

- Emergency Escape Breathing Device (EEBD)
- Walk Around Oxygen Mask
- Fire-fighters Oxygen Mask
- Quick Don Oxygen Mask

(AC1.2) **To include:**

Life support Oxygen Masks

Emergency Oxygen Masks

Learning outcome

The learner will:

2 know the maintenance process applicable to an oxygen mask assembly

Assessment criteria

The learner can:

2.1 identify the component parts and describe the operation of a typical in service oxygen mask

2.2 explain how oxygen mask assemblies work

2.3 explain the specific safety precautions and procedures to be observed whilst carrying out the maintenance of oxygen mask assemblies

2.4 carry out maintenance on a typical oxygen mask assembly

Range

(AC2.1) **To include:**

Face Piece
Inspiratory & Expiratory components
Anti-Suffocation Valve
Harness assembly
Exoskeleton
Tubing
Microphone
Bayonet connector

(AC2.2) **To include:**

Delivery of O_2/Air mix

(AC2.3) **To include:**

Oils, Grease and Dust
Adhesives
Solvents, for example Methyl-ethyl-ketone (MEK)
Cleaning solutions
Use of tools/ Tool segregation
Current, relevant Digital Air Publications (DAPs)
COSHH assessments

(AC2.4) **To include:**

Maintenance schedule eg After Last Flight Daily (ALFD)
Dismantle/reassemble
Examine component parts

Testing, for example:
- Leak Test
- Connection load tests
- Inspiratory/Expiratory valve tests

TME Pre-use checks
Tool control procedures
Maintenance documentation completion

Learning outcome

The learner will:

3 know the maintenance of Personal Equipment Connectors (PEC) and oxygen hose assemblies

Assessment criteria

The learner can:

3.1 identify in service Personal Equipment Connectors (PEC)
3.2 identify an Oxygen Hose Assembly and its component parts
3.3 explain how hose assemblies work
3.4 explain the procedures and processes involved in the maintenance of an Oxygen Hose assembly
3.5 carry out the maintenance of a Personal Equipment Connector (PEC)
3.6 carry out the maintenance of oxygen hose assembly

Range

(AC3.1) **To include:**
Aircrew Portion PEC
Aircraft Portion PEC
Seat Portion PEC

(AC3.2) **To include:**
Aircrew Portion
Aircraft Portion
Seat Portion
Hose Connector
Anti G/AVS connector
Mic/Tel Cable
Charging connection
Second stage regulator

(AC3.3) **To include:**

All services gathered together
Single action connection
Single action detachment during ejection sequence

(AC3.4) **To include:**
Current relevant DAP
Scheduled maintenance
Out of Phase maintenance
Safety precautions
Tool control

(AC3.5) **To include:**
Current relevant DAP
Cleaning & Degreasing
Examination
Tool control
Testing, for example:
- EDL test set
- AEA test cabinet

Maintenance Documentation completion

(AC3.6) **To include:**
Current relevant DAP
Cleaning
Examination
Tool control
Testing, for example:
- Robin insulation tester
- Fluke

Maintenance Documentation completion

Unit 308 Maintaining aircrew oxygen systems

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of how to maintain aircrew oxygen systems on military aircraft.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Unit 309 Maintenance and packing of parachutes

Unit level:	Level 3
GLH:	50
Unit aim:	This unit aims to provide learners with a detailed understanding of what is involved in the care and maintenance of parachutes and associated equipment.
Endorsed by	This unit is endorsed by SEMTA.

Learning outcome

The learner will:

1 understand the processes involved in maintaining in-service emergency escape parachute assemblies

Assessment criteria

The learner can:

1.1 identify the component parts of a head box parachute assembly

1.2 explain the processes required to inspect, fit and remove and test components from an ejection seat head box

1.3 explain how the gas bladder inflation assembly affects the opening sequence of the head box parachute

1.4 explain the processes involved to fold, stow and pack the parachute assembly

Range

(AC1.1) **To include:**

Specific parachute assembly information location
Canopy and rigging lines
Harness
Container
Drogue assembly
Deployment sleeve

(AC1.2) **To include:**

IAW current relevant publications
Removing twists and tangles
Stains and contamination:
- actinic degradation

- mildew
- salt water
- unidentified
- testing

Tool control procedures

(AC1.3) **To include:**

Container Bladder System

1. Bladder tray assembly
2. Bladder inflation assembly

Function of drogues

Operation of the time release mechanism

(AC1.4) **To include:**

Current relevant Digital Air Publications (DAPs)

Canopy folding

Installation into the deployment bag

Operation of the parachute packing press:

- load
- stroke
- stroke rate
- soak mode
- head assembly
- press table and base assembly
- parachute support box

Folding pressures, times and soak rate

Relevant safety precautions

Learning outcome

The learner will:

2 understand the processes involved in maintaining brake parachute assemblies

Assessment criteria

The learner can:

2.1 describe a typical, in-service brake parachute assembly

2.2 carry out basic maintenance on a typical, in-service brake parachute assembly

2.3 describe the recovery and packing process of a typical, in-service brake parachute assembly

Range

(AC2.1) **To include:**

Auxiliary parachute
Deployment bag
Main strop assembly
Connector gaiters
Main canopy
Rigging lines
Shackle

(AC2.2) **To include:**

Current relevant Digital Air Publications (DAPs)
Scheduled inspections
After stream maintenance
Cleaning
Drying
Lifed items
Deterioration
Contamination
Testing

(AC2.3) **To include:**

Deployment
Drying
Recovery safety precautions:
- PPE
- suitable gloves
- FOD
- contamination

Airfield regulations
Local orders
Current, relevant DAPs

Unit 309 Maintenance and packing of parachutes

Supporting Information

Unit guidance
This unit has been produced to meet military aviation training requirements.

On completion of this unit the learner will be able to show a comprehensive knowledge of the aviation policy and regulation relating to the care and maintenance of parachutes and associated equipment.

Functional Skills
This unit may help candidates to gain confidence in, and possibly generate portfolio evidence for, the following Functional Skills:

- Communication
- Information and Communication Technology
- Improving Own Learning and Performance
- Problem Solving
- Working with Others

Assessment is to be designed to demonstrate underpinning knowledge across the Unit.

Appendix 1 Relationships to other qualifications

Links to other qualifications

Centres are responsible for checking the different requirements of all qualifications they are delivering and ensuring that candidates meet requirements of all units/qualifications.

Literacy, language, numeracy and ICT skills development

This qualification can develop skills that can be used in the following qualifications:

- Functional Skills (England) – see www.cityandguilds.com/functionalskills
- Essential Skills (Northern Ireland) – see www.cityandguilds.com/essentialskillsni
- Essential Skills Wales – see www.cityandguilds.com/esw

Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centre document library** on **www.cityandguilds.com** or click on the links below:

Centre Handbook: Quality Assurance Standards

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on:

- centre quality assurance criteria and monitoring activities
- administration and assessment systems
- centre-facing support teams at City & Guilds/ILM
- centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the centre contract.

Centre Assessment: Quality Assurance Standards

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre-assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre assessments.

Access arrangements: When and how applications need to be made to City & Guilds provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **Centre document library** also contains useful information on such things as:

- conducting examinations
- registering learners
- appeals and malpractice.

Useful contacts

Please visit the Contact us section of the City & Guilds website

City & Guilds

For over 140 years, we have worked with people, organisations and economies to help them identify and develop the skills they need to thrive. We understand the life-changing link between skills development, social mobility, prosperity and success. Everything we do is focused on developing and delivering high-quality training, qualifications, assessments and credentials that lead to jobs and meet the changing needs of industry.

We partner with our customers to deliver work-based learning programmes that build competency to support better prospects for people, organisations and wider society. We create flexible learning pathways that support lifelong employability because we believe that people deserve the opportunity to (re)train and (re)learn again and again – gaining new skills at every stage of life, regardless of where they start.

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This Qualification Handbook however may contain references to historic information, such as former organisations, obsolete frameworks, codes or standards, or retired units and qualifications. This information is included for reference purposes only.

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