



## National Unit Specification: general information

**UNIT** Aircraft Maintenance (SCQF level 5)

**CODE** F5GP 11

### SUMMARY

This Unit may form part of a National Qualification Group Award but may also be offered on a free-standing basis.

This Unit is designed to provide candidates with basic knowledge, understanding and skills in aircraft maintenance. During the delivery of the Unit candidates will learn to describe and extract information from maintenance documentation relevant to the performance of maintenance operations. Candidates will also develop the knowledge, understanding and skills to carry out basic aircraft maintenance operations in accordance with aircraft maintenance schedules, using the correct tools and equipment and complying with appropriate safe working practices and procedures. Candidates will also learn to complete maintenance worksheets.

This Unit is suitable for candidates who:

- ◆ are undertaking the study of this subject for the first time
- ◆ wish to gain a basic knowledge and understanding of aircraft maintenance
- ◆ are considering a career in the aviation industry and wish to gain a basic knowledge and understanding of aircraft maintenance

### OUTCOMES

- 1 Describe and extract information from documentation relevant to the performance of aircraft maintenance operations.
- 2 Identify and use a range of aircraft maintenance tools and equipment while undertaking maintenance operations.
- 3 Carry out aircraft maintenance operations.

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#### Administrative Information

**Superclass:** XP

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## **National Unit Specification: general information (cont)**

### **RECOMMENDED ENTRY**

Entry is at the discretion of the centre. Candidates do not require any prior knowledge or experience of the subject.

### **CREDIT VALUE**

1 credit at SCQF level 5 (6 SCQF credit points at SCQF level 5\*).

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

### **CORE SKILLS:**

There is no automatic certification of Core Skills in this Unit.

This Unit provides opportunities for candidates to develop aspects of the following Core Skills:

Problem Solving (SCQF level 5)

Working with Others (SCQF level 5)

These opportunities are highlighted in the Support Notes of this Unit Specification.

## **National Unit Specification: statement of standards**

### **UNIT        Aircraft Maintenance (SCQF level 5)**

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### **OUTCOME 1**

Describe and extract information from documentation relevant to the performance of aircraft maintenance operations.

##### **Performance Criteria**

- (a) Identify correctly the basic terms and definitions used in maintenance schedules.
- (b) Describe correctly different types of aircraft checks.
- (c) Extract correctly relevant information from approved maintenance documentation.
- (d) Describe correctly the purpose of aircraft log books.
- (e) Describe correctly the use of certificates of release to service.

#### **OUTCOME 2**

Identify and use a range of aircraft maintenance tools and equipment while undertaking maintenance operations.

##### **Performance Criteria**

- (a) Identify and use hand tools correctly to undertake maintenance tasks.
- (b) Identify and use power tools correctly to undertake riveting operations.
- (c) Identify and use correctly aircraft locking devices.

#### **OUTCOME 3**

Carry out aircraft maintenance operations.

##### **Performance Criteria**

- (a) Undertake maintenance operations in accordance with an aircraft maintenance schedule.
- (b) Comply fully with safety procedures and practices while undertaking maintenance operations.
- (c) Complete correctly scheduled maintenance worksheets.

## **National Unit Specification: statement of standards**

**UNIT**      Aircraft Maintenance (SCQF level 5)

### **EVIDENCE REQUIREMENTS FOR THIS UNIT**

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Written and/or recorded oral and performance evidence supplemented with an assessor observation checklist should be produced to demonstrate that a candidate has achieved all Outcomes and Performance Criteria.

Outcomes 1 to 3 may be assessed by a single, holistic assessment or as a combination of assessments (eg Outcome 1 on its own and Outcomes 2 and 3 together) or on an individual basis. Assessment of the Outcomes and Performance Criteria must take place at suitable points in the delivery of the Unit.

Assessment of all three Outcomes must be conducted under supervised, open-book conditions. The total time set aside for assessment of Outcome 1 must not exceed 1 hour.

#### **With regard to Outcome 1**

- ◆ Candidates must define a minimum of five basic terms and definitions used in maintenance schedules
- ◆ Candidates must explain two different types of aircraft checks
- ◆ Candidates must extract a minimum of three items of information from an approved maintenance schedule

#### **With regard to Outcome 2**

- ◆ Candidates must identify and use a minimum of five hand tools as part of maintenance tasks
- ◆ Candidates must identify and use a minimum of two different locking devices

#### **With regard to Outcome 3**

- ◆ Performance evidence will be supplemented by written and / or recorded oral evidence
- ◆ An assessment checklist will be used to record evidence that the candidate is complying with safety procedures and practices

The Assessment Support Pack for this Unit provides sample assessment material. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

## National Unit Specification: support notes

### UNIT Aircraft Maintenance (SCQF level 5)

This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

#### GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

This Unit forms part of the National Qualification Group Award in Aeronautical Engineering at SCQF level 6, but may also be offered on a free-standing basis.

This Unit is designed to provide candidates with basic knowledge, understanding and skills in aircraft maintenance. On successful completion of the Unit candidates will be able to describe and extract relevant information from documentation to perform maintenance operations. Candidates will also be capable of carrying out basic aircraft maintenance operations in accordance with aircraft maintenance schedules, using the correct tools and equipment and complying with appropriate safe working practices and procedures. Candidates will also have learnt to complete maintenance worksheets.

The list below shows a suggested range of topics which may be delivered to candidates to support and underpin the requirements set out in the Outcomes, Performance Criteria and Evidence Requirements.

#### 1 Describe and extract information from documentation relevant to the performance of aircraft maintenance operations.

- ◆ Basic terms and definitions used in maintenance schedules
- ◆ Description of different types of aircraft checks
- ◆ Extraction of information from approved maintenance schedules (eg check cycle, variations etc.)
- ◆ Explanation of the purpose of aircraft log books (eg aircraft, engine, propeller log books)
- ◆ Explanation of the use of certificates of release to service

#### 2 Identify and use a range of aircraft maintenance tools and equipment while undertaking maintenance operations.

- ◆ Identification and use of handtools such as hammers, screwdrivers, saws, spanners, torque wrenches, sockets
- ◆ Identification of power tools such as drills, pneumatic rivet guns etc
- ◆ Identification and use of locking devices such as lock wire and split pins

#### 3 Carry out aircraft maintenance operations.

- ◆ Candidates should perform maintenance operations in accordance with aircraft maintenance schedule. An example of a schedule may be the Light Aircraft Maintenance Schedule (LAMS) 50 hour check.

The candidates could inspect, check and service a typical aircraft. On completion of the inspection and service the candidates could write-up and sign-off appropriate documentation (eg aircraft logbooks).

## **National Unit Specification: support notes (cont)**

### **UNIT          Aircraft Maintenance (SCQF level 5)**

#### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

It is recommended that the Unit is delivered in the same sequence the Outcomes are presented in the National Unit Specification: statement of standards section of the Unit. A range of approaches can be used in the delivery of the Unit. Outcome 1 involving documentation used in aircraft maintenance may be delivered in a classroom where delivery may involve a combination of lectures, group discussion and tutorial work. The remaining part of the Unit has been designed to be delivered in a workshop environment involving lecturer demonstration, individual and group task assignments and group discussions.

It is essential that candidates are inducted into current Health and Safety practices and procedures at the start of delivering of the Unit and that these are reinforced throughout Unit delivery.

Videos, DVDs etc. on aspects of Health and Safety, such as dangers in engineering workshops and aviation areas, may also support learning.

Wall charts and boards display different types of tools and materials may also assist candidate learning.

Candidates may be provided with appropriate notes, handouts and tutorials during Unit delivery to support their learning.

#### **OPPORTUNITIES FOR CORE SKILL DEVELOPMENT**

Elements of the Core Skill of *Problem Solving*, that is, planning and organising, critical thinking, reviewing and evaluating, will be developed and enhanced as candidates undertake a typical maintenance inspection. They have to consider the essential requirements of an aircraft maintenance schedule, select appropriate resources and equipment and complete work safely and efficiently. There could be additional opportunities to enhance co-operative working skills if tutorial exercises are structured specifically to require candidates to work in groups. They could be encouraged to negotiate the nature and scope of goals, roles and responsibilities, provide advice and support to each other and review and evaluate approaches taken to activities.

#### **GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT**

##### **Opportunities for the use of e-assessment**

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

## **National Unit Specification: support notes (cont)**

### **UNIT        Aircraft Maintenance (SCQF level 5)**

Centres are encouraged to use formative assessment extensively as it plays a particularly important role in allowing candidates to develop sound knowledge, understanding and skills in describing and extracting information from documentation relevant to aircraft maintenance and in performing aircraft maintenance operations.

Outcome 1 may be assessed by short answer and restricted responses questions or objective questions (eg multi-choice questions) or a mixture of both.

Outcomes 2 and 3 may be assessed together either by a series of practical maintenance exercises or by a single, holistic maintenance exercise which has been designed to allow candidates to generate sufficient evidence to satisfy the Performance Criteria in the two Outcomes. An observation checklist(s) should be used to record candidate evidence.

### **DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)