

**Qualification title:****Level 3 Diploma in Aircraft Manufacture****Qualification number:****4597-31****Guidance relating to all centre devised units for this qualification**

The following guidance applies to all of the centre devised units listed. Where individual units require specific guidance, this is provided in the next section; Unit specific guidance.

**Generic guidance for units: 005, 007, 008 and 009****Task Setting:**

Each task will consist of:

- planning and preparation
- execution of the activity
- inspection of the finished work
- recording and reporting on the completed task.

Specific guidance for each unit is given below.

In order to ensure all the knowledge requirements are covered, additional questions may need to be completed by the candidate. These should be treated as a separate assessment task and the standard forms used (i.e. fronted by GF2/3 if written or GF1 or alternative if oral)

**Forms of Evidence:**

It is expected that the following forms of evidence will be produced for these units:

- candidate reports (fronted by GF2/3) and discussions with assessor (recorded on GF1)
- inspection report forms including marked up diagrams (centre devised form or GF1)
- written reports to include planning of the tasks, annotated illustrations of the process (e.g. drawings, photographs). (Any illustrations must clearly state what the candidate is doing/did) and completed job cards and/or inspection report (fronted by GF2/3)
- photographic evidence or actual work pieces (fronted by GF2/3).

All candidate produced material should be fronted by GF2/3 and any evidence recorded by the assessor should be on GF1 or where appropriate a centre devised alternative, or media recording. Audio or video recordings must be securely saved as evidence, clearly identified as relating to the candidate in question and accessible to the I&EV)

**Conditions:****Practical tasks**

The practical tasks must take place in an appropriately equipped area in the centre, this may be an on site aircraft hangar if available or other similar area.

**Underpinning knowledge questions**

If short answer underpinning knowledge questions are to be used, these must be taken under supervised conditions as closed-book tests and must not be completed as homework.

This means that all the activities will be completed with the assessor, or other designated supervisor, present. Strict exam regulations (e.g. JCQ ICE) do not apply; it is envisaged that most candidates will take the short answer questions in their normal learning environment with their own tutor present. Alternatively, assessors may ask the questions orally and record individual candidate's responses on the assignment evidence recording form.

**Marking and grading****Grading criteria to be applied to these units:**

Please refer to the Generic Grading Criteria (GM2) for the detailed descriptors for pass, merit and distinction. The following descriptors apply to these units.

**PT** (Performance of techniques, methods/skills) – these descriptors will apply to any tasks where candidates are carrying out practical activities

**AKU** (Practical application of knowledge and understanding) – these will apply where candidates may be demonstrating some of the knowledge and understanding outcomes through practical activities or planning to carry out practical activities.

**U** (Understanding): these will apply where candidates are being asked specific questions to show their understanding e.g. through oral or short answer questions.

**K** (Knowledge): these will apply where candidates are being asked specific questions to show their understanding e.g. through oral or short answer questions.

**The assessment grading criteria grid (AD2) must be completed in all cases. All tasks should be weighted equally.**



### Unit specific guidance

This guidance relates to the individual unit only and is in addition to any generic guidance specified for it above.

Unit	Unit details		
005	Title: Aircraft Manufacture	Graded: Pass/Merit/Distinction	Sample assessment: N/A
<p><b>Task Setting:</b></p> <p>The tasks to be set should allow the candidate to demonstrate a range of structural manufacturing techniques using standard aircraft metallic materials. The tasks should be integrated where possible to result in the manufacture of a structural component, or a section thereof. Work pieces should have a degree of complexity appropriate to Level 3; they could include one or more curved profiles, primary and secondary structure and/or an access panel in the skin (to increase the range of fasteners used). Work pieces need not be full size; they can be scaled to reasonable proportions to save on materials. Examples of manufactured items could include:</p> <ol style="list-style-type: none"> <li>a. a section of aerofoil (structure and skin)</li> <li>b. a profiled section of fuselage (structure and skin)</li> <li>c. a section of door, hatch or pressure bulkhead.</li> </ol> <p>These could be used to cover assembly, surface preparation and finishing in learning outcome 9.</p> <p>A separate, task may be required to cover the remainder of the practical assessment criteria, such as heat treatment, if they are not covered through other tasks.</p> <p>Learning outcomes 1-8 contain knowledge and understanding assessment criteria. It must be clear in the assignment composition grid and the evidence, that the candidate has covered all of the knowledge requirements. Some of these assessment criteria will be covered naturally through candidate reports etc, however it may be necessary to ask the candidate additional questions.</p>			



Unit	Unit details		
007	<b>Title: Mechanical Systems in Aircraft</b>	<b>Graded:</b> Pass/Merit/Distinction	<b>Sample assessment:</b> N/A
<p><b>Task Setting:</b></p> <p>Equipment to be worked on during the assignment will include one item from each equipment group (a and b):</p> <ol style="list-style-type: none"> <li>a. Mechanical systems for example:                             <ol style="list-style-type: none"> <li>i. Main/nose wheel assembly</li> <li>ii. Brake pack</li> <li>iii. Nose wheel steering components</li> <li>iv. Retraction jack</li> <li>v. Locking mechanism</li> <li>vi. Torque link</li> </ol> </li>   <li>b. Equipment and furnishings for example:                             <ol style="list-style-type: none"> <li>i. Seats</li> <li>ii. Harness assemblies</li> <li>iii. Galley unit</li> <li>iv. Toilet unit</li> <li>v. Cabin partitions</li> <li>vi. Cabin trim</li> <li>vii. Entertainment modules</li> <li>viii. Aircraft role equipment</li> </ol> </li> </ol> <p>Appropriate tasks will include:</p> <ul style="list-style-type: none"> <li>• removing and fitting typical undercarriage components</li> <li>• inspecting, measuring and adjusting landing gear components (e.g. micro-switches, locks etc.)</li> <li>• inspecting and fitting typical equipment and furnishings.</li> </ul> <p>Learning outcomes 1-9 contain knowledge and understanding assessment criteria. It must be clear in the assignment composition grid and the evidence, that the candidate has covered all of the knowledge requirements. Some of these assessment criteria will be covered naturally through candidate reports etc, however it may be necessary to ask the candidate additional questions.</p>			



Unit	Unit details		
008	<b>Title: Structural Materials and Components in Aircraft</b>	<b>Graded:</b> Pass/Merit/Distinction	<b>Sample assessment:</b> N/A
<p><b>Task Setting:</b></p> <p>Learning Outcome 4</p> <ul style="list-style-type: none"> <li>• Aircraft structure tasks should be set using real or simulated sections of airframe structure.</li> <li>• Samples of typical defects in ferrous and non-ferrous metals should include a range of typical defects identifiable with the naked eye or with the aid of a magnifying glass</li> <li>• Candidates should be asked to identify a range of different corrosion types, however, in the absence of a suitably corroded component; the actual item to be repaired may be marked up with the type and extent of corrosion, using a marker pen.</li> <li>• Corrosion repair should be carried out to an approved airframe repair schedule.</li> </ul> <p>Learning Outcome 7</p> <ul style="list-style-type: none"> <li>• Tasks for assessment criteria 7.1 and 7.2 can be demonstrated using a test piece.</li> <li>• The task for assessment criteria 7.3 could be combined within the task for assessment criteria 4.4.</li> </ul> <p>Learning outcomes 1-6 and 8 contain knowledge and understanding assessment criteria. It must be clear in the assignment composition grid and the evidence, that the candidate has covered all of the knowledge requirements. Some of these assessment criteria will be covered naturally through candidate reports etc, however it may be necessary to ask the candidate additional questions.</p>			



Unit	Unit details		
009	<b>Title: Manufacturing Aircraft Structures</b>	<b>Graded:</b> Pass/Merit/Distinction	<b>Sample assessment:</b>
<p><b>Task Setting:</b></p> <p>Appropriate tasks will include:</p> <ul style="list-style-type: none"> <li>• Planning a sequence of operations to be carried out for the installation, inspection and classification of airframe structures</li> <li>• Planning a sequence of operations for the removal and replacement of typical airframe components</li> <li>• Planning a sequence of operations to undertake a simulated emergency procedure.</li> <li>• Preparing a checking and inspection procedure for aircraft components using various measuring devices.</li> </ul> <p>The area to be inspected should be on a real or simulated aircraft structure and should include an area of restricted access.</p> <p>The airframe component(s) to be removed and fitted can be any substantial item. If this is carried out as a team task then the individual contribution of each must be substantial and clearly indicated in the report. Ideally the removal and fitting should be of two different items.</p> <p>It may be possible to combine the task for assessment criterion 7.5 in this unit with assessment criterion 9.6 in Unit 005. It must be possible however for a grade to be established for each individual unit. Please refer to the 'centre guidance for developing centre devised assignments' for further information.</p> <p>Learning outcomes 1-6 and 8 contain knowledge and understanding assessment criteria. It must be clear in the assignment composition grid and the evidence, that the candidate has covered all of the knowledge requirements. Some of these assessment criteria will be covered naturally through candidate reports etc, however it may be necessary to ask the candidate additional questions.</p>			
<p><b>Forms of Evidence:</b></p> <p>Specific evidence for this unit must include the candidate producing a detailed report on the section of airframe concerned, using a diagram and/or report form using established station identification notation.</p>			