Higher National Project-based Graded Unit Specification

General Information

This Graded Unit has been validated as part of the HNC/HND Aircraft Engineering. Centres are required to develop a project-based assessment in accordance with this validated specification.

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Graded Unit code: H9AW 35

Type of Project: Practical Assignment

Publication date: June 2015

Source: Scottish Qualifications Authority

Version: 01

Graded Unit purpose

This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND award in Aircraft Engineering:

- Enhance learners' employment prospects
- Support learners' career development and Continued Professional Development
- Enable progression within the SCQF (Scottish Credit and Qualifications Framework)
- Provide learners' with a flexible curriculum comprising mandatory and optional Units
- Develop Core and transferable skills
- Provide learners with an articulation route to degree level studies in aircraft/aeronautical engineering
- Develop learners knowledge, understanding and practical skills consistent with progression to, and within, careers in aircraft/aeronautical engineering
- Develop learners ability to interpret and apply analysis skills to the solution of aircraft/aeronautical engineering related problems
- Develop learners skills to investigate and research topics in aircraft/aeronautical engineering
- Develop learners ability to effectively use a range of communication skills relevant to the needs of aircraft/aeronautical engineers

Higher National Project-based Graded Unit Specification: General Information (cont)

- Develop learners ability to apply principles of engineering project planning and implementation
- Provide learners with a qualification that meets the educational requirements that contributes to the attainment of professional registration with the UK Engineering Council as an Engineering Technician

Credit points and level

2 Higher National Unit credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

Recommended entry to the Graded Unit

It is recommended that the learner should have completed all HNC Aircraft Engineering Units prior to undertaking this Graded Unit.

The nature of the project activity detailed in this Unit specification is such that it is likely that centres will wish their learners to embark on it from the start of the second year of the HND Aircraft Engineering programme. As it is anticipated that centres will deliver the HNC Aircraft Engineering as part of the first year of the HND, it is recommended that learners have completed all HNC Aircraft Engineering Units before commencing this project.

In principle, the project can draw on any Units in the HND Aircraft Engineering Framework although the majority of the Units should be at SCQF level 8. The project can be taken from one Aircraft Engineering area (eg Avionics) or it can span more than one technical area. However, its principal purpose is not to integrate technical content (this is covered in *Aircraft Engineering: Graded Unit 1*) but rather to combine such knowledge and skills as planning, scheduling, construction, testing, evaluating and reporting.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Graded Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Graded Unit.

Equality and inclusion

This Graded Unit has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on SQA's website:
www.sqa.org.uk/assessmentarrangements

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Assessment

This Graded Unit will be assessed by the use of a practical assignment (Aircraft Engineering Project) developed by centres. The project should provide the learner with the opportunity to produce evidence that demonstrates she/he has met the aims of this Graded Unit.

In developing this Graded Unit, it was decided that learners must do a clearly identifiable individual project. However, this does not preclude individual projects being part of a larger group project. Learners' contribution to a larger group project has the advantage of creating opportunities for the development of the Core Skills *Communication, Problem Solving* and *Working with Others*.

The project undertaken by the learner must be a complex task which involves:

- variables which are complex or unfamiliar
- relationships which need to be clarified
- a context which may be unfamiliar to the learner

The project will support the broad manufacturing or maintenance aims of the course and may consist of one of the following:

- aircraft hardware only
- aircraft hardware and software
- an aircraft component or system design (which may include the use of software)
- feasibility investigation of an aeronautical technical issue leading to a report with a clear set of recommendations

The project must require the learner to:

- analyse the task and decide on a course of action for undertaking the project
- plan and organise work and carry it through to completion
- reflect on what has been done and draw conclusions for the future
- produce evidence of meeting the aims which this Graded Unit has been designed to cover.
- produce a project brief and specification
- produce project objectives which define the long term project objectives
- draw up an initial project schedule which should be used to inform on-going project planning and development
- justify chosen project solution in relation to one or more alternative solutions
- develop a verification strategy for the project
- feed back to project supervisor on a regular basis
- access components, software, materials or materials for an investigation
- implement project solution
- test product or check investigation data to confirm validity of this data

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

- analyse test results or investigation data
- maintain a log book throughout the duration of the project
- complete a project report which conforms to appropriate report standards, includes an evaluation of the project strategy and what the learner has learnt from undertaking the project
- present details of the project including a reflective account of the project Outcomes

Examples of such projects including the following:

- installation of aircraft equipment (eg avionics upgrade, engine)
- design of some form of structure (eg significant repair to a flight surface)
- investigation into the requirements for an aircraft 'C' or 'D' check

Conditions of assessment

The learner should be given a date for completion of the practical assignment (Aircraft Engineering project). However, the instructions for the project should be distributed to allow the learner sufficient time to assimilate the details and carry out the project. During the time between the distribution of the project instructions and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance. The project should be marked as soon as possible after the completion date. The final grading given should reflect the quality of the learner's evidence at the time of the completion date.

At this level, learners should work independently. It is up to centres to take reasonable steps to ensure that the project is the work of the learner. For example, centres may wish to informally question learners at various stages on their knowledge and understanding of the project on which they have embarked. Centres should ensure that where research etc. is carried out in other establishments or under the supervision of others that the learner does not receive undue assistance.

The evidence for the project is generated over time and involves three distinct stages, where each stage has to be achieved before the next is undertaken. Thus any reassessment of stages must be undertaken before proceeding to the next stage.

If a learner fails the project overall or wishes to upgrade, then this must be done using a *substantially different* project, ie all stages are undertaken using a new project, assignment, case study, etc. In this case, a learner's grade will be based on the achievement in the ***re-assessment*.**

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Evidence Requirements for this Graded Unit

The project undertaken by learners will consist of three stages: planning; developing; and evaluating. The following table specifies the minimum evidence required to pass each stage.

Project stage	Minimum Evidence Requirements	% Mark Allocation
Stage 1 — Planning	♦ A project brief identifying customer requirements ♦ A project specification that the customer has agreed ♦ A set of project objectives ♦ A project schedule ♦ Information about the different solutions ♦ Justification of the chosen solution ♦ Verification strategy ♦ Maintenance of a log book ♦ Complies with Health and Safety procedures	25
	*The learner **must** achieve all of the minimum evidence specified above in order to pass the Planning stage.*	
Stage 2 — Developing	♦ Practical output from the project (design, analysis, installation, investigation etc) ♦ Records of progress underpinning the project such as: — Log book — Progress reports ♦ Test results or investigation findings as part of the verification strategy ♦ Complies with Health and Safety procedures	25
	*The learner **must** achieve all of the minimum evidence specified above in order to pass the Developing stage.*	

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Project stage	Minimum Evidence Requirements	% Mark Allocation
Stage 3 — Evaluating	♦ Review of project specification as the project progresses ♦ Review of project schedule as the project progresses ♦ Analysis used to decide project option ♦ Progress reporting and goal setting as part of project implementation ♦ Actions taken to overcome unforeseen circumstances ♦ Interpretation of test results or investigation findings ♦ Action taken as a result of test results or investigation findings interpretation ♦ An assessment of the strengths and weaknesses of the practical output of the project ♦ An evaluation of the extent to which the project brief and objectives have been overtaken ♦ Reflective part of the presentation ♦ Indication of any knowledge and skills which have been gained by the learner ♦ Complies with Health and Safety procedures	50
	*The learner **must** achieve all of the minimum evidence specified above in order to pass the Evaluating stage.*	

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Assessing and grading learners

The overall project will be marked out of **100**. Only whole marks should be used.

The percentage of marks allocated to each stage of the project is outlined in the **Evidence Requirements**.

It is a requirement that learners must meet the minimum *Evidence Requirements* for the *Planning* stage *before progressing to the Developing stage before progressing to the Evaluating* stage. Learners may produce evidence over and above that specified in the minimum *Evidence Requirements* and deserve more than half the available marks for that stage. Assessors should use the Grade Related Criteria outlined below to judge learner performance.

Learners are required to work independently to meet the *Evidence Requirements* of the Graded Unit. At the same time, learners need appropriate support. SQA uses the term reasonable assistance to describe the balance between supporting learners in their project and not providing too much assistance.

At the end of *each* stage there should be opportunities for remediation and re-assessment of learners for that particular stage. This includes the final *Evaluation* stage. Any re-assessment should be carried out in line with the centre's own assessment policy.

It should be noted that in the following table the term 'product' could mean one of the following:

- aircraft hardware only
- aircraft hardware and software
- aircraft component or system design (which may include the use of software)
- feasibility study of an aeronautical technical issue leading to a report with a clear set of recommendations

Whichever category is chosen, the project must relate to a practical situation demonstrating how aircraft engineering is utilised in the service of society.

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Grade Related Criteria	
Grade A	**Grade C**
Is a seamless, coherent piece of work which: ♦ The project brief includes complex, multi-variable information about the main technical requirements of the project and provides a cost indication and expected timescales. ♦ The project specification provides very clear comprehensive detail of all aspects, is well structured, contains all relevant, accurate information and any revisions made have been agreed with the customer. ♦ The project objectives and multi-variables are very clearly communicated and accurately and fully reflect the long term project targets. ♦ The initial project schedule (probably in the form of a Gantt chart) contains a comprehensive list of all project activities and timings. The information in the initial schedule is used to assess if the project can be completed within timescales. The schedule is monitored on a regular basis to inform on-going project planning and development and proactive revisions made as appropriate. ♦ The learner develops a comprehensive knowledge base to support the demands of the project. ♦ The selected solution is justified in terms of a thorough evaluation of a range of options.	Is a co-ordinated piece of work which: ♦ The project brief includes all relevant information, is clear and concise and has been agreed fully with the customer. ♦ The project specification provides clear details of the major aspects to include the following: the title of the project; the objectives of the specification; the project's main technical requirements including multi-variables and an acknowledgement of any references or standards relevant to the specification. ♦ The project objectives identify the key long term project targets and multi-variables. ♦ The initial project schedule (probably in the form of a Gantt chart) shows all essential project activities and timings. Evidence that the schedule has been monitored on at least three separate occasions during the life of the project to inform on-going project planning and development should be available. ♦ The learner develops a reasonable knowledge base to support the demands of the project. ♦ The selected solution is justified in terms of an evaluation involving the solution and at least one viable alternative option.

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Grade Related Criteria (cont)	
Grade A	**Grade C**
♦ A comprehensive verification strategy is developed to ensure the product is completely tested or the investigation findings are fully validated.	♦ A verification strategy is developed to test the essential parts of the product or to validate the principal investigation findings.
♦ The learner feeds back to her/his supervisor on a frequent basis, updating the supervisor on progress made and actions for the next stage of the project.	♦ The learner feeds back to her/his supervisor on at least three occasions providing an indication of progress made.
♦ The learner accesses components and/or software and/or materials to support an investigation of the correct specification from a range of sources at the most economic price.	♦ The learner accesses components and/or software and/or materials to support an investigation of the correct specification from a range of sources.
♦ The product is constructed to a high standard and functions correctly or the investigation is carried out in a comprehensive manner.	♦ The product is constructed to an acceptable standard of quality or the investigation is carried out in a sufficiently detailed manner.
♦ All tests on the product are conducted in a technically correct way with due account being taken of inaccuracies introduced by the measurement processes or comprehensive checks are made on investigation data to ensure full confidence in the reliability and accuracy data.	♦ Most tests are carried out in a technically proficient way or sufficient checks are made on the investigation data to ensure reasonable confidence in the reliability and accuracy of the data.
♦ The interpretation of test results or investigation data is accurate and the analysis of the results or data is used to identify improvements in product performance or the Outcomes of the investigation.	♦ The interpretation of test results or investigation data is correct.

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Grade Related Criteria (cont)	
Grade A	**Grade C**
♦ The log book is regularly maintained and provides a detailed, informal record of the learner's thinking, progress, on-going Outcomes and contacts as the project develops including reflective comments.	♦ The log book contains a reasonable level of detail about project ideas and progress and there is evidence that entries have been made on at least six occasions during the life of the project.
♦ The project report is well structured, contains only relevant information, has clear and accurate conclusions and recommendations and uses clear and correct English.	♦ The project report meets acceptable standards in terms of structure, use of English and clarity, and has accurate conclusions and recommendations.
♦ The project report includes a complex and comprehensive evaluation of the project strategy and activities and includes clear evaluation of what the learner has learnt from undertaking the project and the factors involved.	♦ The project includes an evaluation of the project strategy and activities and includes an evaluation of what the learner has learnt from undertaking the project.
♦ The presentation is well structured, contains only relevant information, is to time and includes the use of appropriate aids.	♦ The presentation is acceptably structured, contains largely relevant information and is to time.
♦ The learner gives clear, concise and technically accurate answers to all questions raised during the presentation.	♦ The learner gives technically correct answers to most questions raised as part of the presentation.
♦ The learner includes a complex, reflective account of the success, or otherwise, of project activities against project objectives in the presentation.	♦ The learner includes a reflective account of the success, or otherwise, of the project in the presentation.
♦ The learner undertakes the project with the minimum of supervision.	♦ The learner undertakes the project with few interventions from the project supervisor to ensure the project remains on track.

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Grade Related Criteria (cont)	
Grade A	**Grade C**
♦ The learner identifies clear and full details of the new knowledge and skills she/he has developed as a result of doing the project such as project management skills, investigation/research skills, keeping to deadlines, recognising limitations of knowledge — approaching expert sources.	♦ The learner provides at least three examples of new knowledge and skills she/he has developed as a result of doing the project.
♦ The learner introduces a significant novel feature in the project.	♦ None
♦ The learner demonstrates a high level of self-motivation throughout the project.	♦ The learner demonstrates an acceptable level of motivation throughout the project.
♦ The learner undertakes additional research well beyond that demanded by the project.	♦ None

The marks allocated to each stage will then be aggregated to arrive at an overall mark for the project. Assessors will then assign an overall grade to the learner for this Graded Unit based on the following grade boundaries.

A = 70%–100%
B = 60%–69%
C = 50%–59%

These grade boundaries are fixed and should **not** be amended.

If a learner does not achieve a pass or wishes to upgrade, then this must be done using a substantially different project, ie all stages are undertaken using a new project (case study, investigation or practical assignment). In these circumstances, the highest grade achieved should be awarded.

More information on reasonable assistance, remediation and re-assessment may be found in the SQA publication *Guidance for the Implementation of Graded Units in Higher National Certificates and Diplomas* (SQA, 2008, Publication code: CA4405).

Higher National Project-based Graded Unit Specification: Designing the project and assessing learners (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

NOTE: Centres must complete the Grading Checklist provided in this Unit specification for each Aircraft Engineering Project.

Completed checklists will be used as part of the external verification process to ensure the accuracy and consistency of grading between learners in a centre and across centres.

Guidance on the completion of the Grading Checklist has also been provided.

Higher National Project-based Graded Unit Support Notes

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Guidance on approaches to delivery and assessment of this Graded Unit

It is intended that this Unit is delivered across one academic year rather than in a compressed timeframe which is timetabled more frequently. This is proposed to enable learner's sufficient time to plan, develop and evaluate a project commensurate with the SCQF level and credit points and in addition allow learners to accumulate further knowledge and skills from taught Units throughout the HND year.

Regular meetings should be arranged, either individually or in small groups, to ensure direction is provided to the learners and suitable progress is being made. Group sessions could consist of support in elements which are common to all projects such as, project planning, information gathering/recording techniques and oral and written presentation techniques. It may be more appropriate to schedule individual meetings where there is little commonality between the supervised projects and it is envisaged that the latter will dominate the former in terms of the number of occurrences of each meeting type.

Greater early stage support may be required, principally in terms of planning, organisation and researching as these areas may be less familiar to the learners than some technical aspects which may have been introduced throughout their HNC studies. This could be achieved by encouraging the learners to submit an initial issue of their project specification in the early weeks of the project on which they could receive feedback with a view to producing a second issue of their specification that embodies that feedback. This could be done to allay any initial concerns learners have and provide a solid foundation upon which their project is built. It may also be beneficial to request a short draft section of the written submission early in the academic year to provide the learners early feedback, promoting confidence in their work or allowing remedial action to be taken timeously. This element could form part of the project plan in addition to other appropriate project milestones culminating in a final submission and presentation.

It is likely that a number of lecturers will concurrently deliver on this Unit and it is advised that significant project milestones are agreed within the course team prior to delivery and are presented to the learners to ensure consistency. It may also be beneficial that other key items of information such as referencing style, final submission formatting and presentation requirements are also agreed and applied consistently. In addition to the planned internal and external verification process it may also be prudent to compare and if necessary standardise marking of the submissions as, in spite of marking rubrics, heightened subjectivity may be evident in this Unit due to its nature.

Higher National Project-based Graded Unit Support Notes (cont)

Graded Unit title: Aircraft Engineering: Graded Unit 2 (SCQF level 8)

Opportunities for developing Core and other essential skills

In addition to the assessment, this Graded Unit may also contribute towards the component 'Planning and Organising' of the Core Skill *Problem Solving* at SCQF level 6. Learners may have to develop a plan for their own research when completing this Graded Unit. The general Core Skill that learners may have to complete is 'Plan and Organise a complex task'.

In completing this Graded Unit learners have the opportunity to develop the Core Skill *Working with Others* at SCQF level 6. Learners may have the opportunity to work within a group, co-operate and contribute to group decisions regarding their chosen project. The general Core Skill that learners may have an opportunity to complete is *Working with Others* in a group to 'Analyse, plan and complete a complex activity'.

The Graded Unit also provides learners with opportunities to develop the Core Skill *Communication* at SCQF level 6. Written communications skills may be developed through the Project Brief and specification, Log book/Progress Reports and the Project report. Oral communication skills may be developed through delivering a presentation that details the project work and Outcomes.

Important Note:

Centres **must** complete the following Grading Checklist for each Aircraft Engineering Project.

Completed checklists will be used as part of the external verification process to ensure the accuracy and consistency of grading between learners in a centre and across centres.

Notes on completion of the Grading Checklist have been provided.

Scottish Qualifications Authority

Aircraft Engineering Project: Graded Unit 2

Grading Unit Checklist

Centre name: _____

Centre number: _____

Grading Checklist

No.	No Grade	Grade C Criteria	Grade C	Grade B	Grade A	Grade A Criteria
1	Yes	The project brief includes complex, multi-variable information about the main technical requirements of the project and provides a cost indication and expected timescale.	Yes	Yes	Yes	The project brief includes all relevant information, is clear and concise and has been agreed fully with the customer.
2	Yes	The project specification provides clear details of the following: the title of the project; the objectives of the specification; the project's main technical requirements including multi-variables and an acknowledgement of any references or standards relevant to the specification.	Yes	Yes	Yes	The project specification is well structured, contains relevant, accurate information and any revisions have been agreed with the customer.
3	Yes	The project objectives identify the key long term project targets and multi-variables.	Yes	Yes	Yes	The project objectives accurately and fully reflect the long-term project targets.
4	Yes	The initial project schedule (probably in the form of a Gantt chart) shows all essential project activities and timings. Evidence that the schedule has been monitored on at least three separate occasions during the life of the project to inform on-going project planning and development should be available.	Yes	Yes	Yes	The initial project schedule (probably in the form of a Gantt chart) contains a comprehensive list of project activities and timings. The information in the initial schedule in used to assess if the project can be completed within the timescales. The schedule is monitored on a regular basis to inform on-going project planning and development.

Grading Checklist (cont)

No.	No Grade	Grade C Criteria	Grade C	Grade B	Grade A	Grade A Criteria
5	Yes	The learner develops a sound knowledge base to support the demands of the project.	Yes	Yes	Yes	The learner develops a substantial knowledge base to support the demands of the project.
6	Yes	The selected solution is justified in terms of a sound evaluation involving the solution and at least one viable alternative option.	Yes	Yes	Yes	The selected solution is justified in terms of a thorough evaluation of a range of options.
7	Yes	A verification strategy is developed to test the essential parts of the product or to validate the principal investigation findings.	Yes	Yes	Yes	A comprehensive verification strategy is developed to ensure the product is completely tested or the investigation findings are fully validated.
8	Yes	The learner feeds back to her/his supervisor on at least three occasions providing an indication of progress made.	Yes	Yes	Yes	The learner feeds back to her/his supervisor on a regular basis, updating the supervisor on progress made and actions for the next stage of the project.
9	Yes	The learner accesses components and/or software and/or materials to support an investigation of the correct specification from a range of sources.	Yes	Yes	Yes	The learner accesses component and/or, software and/ or materials to support an investigation of the correct specification from a range of sources at the most economic price.

Grading Checklist (cont)

No.	No Grade	Grade C Criteria	Grade C	Grade B	Grade A	Grade A Criteria
10	Yes	The product is constructed to an acceptable standard of quality or the investigation is carried out in a sufficiently detailed manner.	Yes	Yes	Yes	The product is constructed to a high standard and functions correctly or the investigation is carried out in a comprehensive manner.
11	Yes	Tests are carried out in a technically proficient way or sufficient checks are made on the investigation data to ensure reasonable confidence in the reliability and accuracy of the data.	Yes	Yes	Yes	All tests on the product are conducted in a technically correct way with due account being taken of inaccuracies introduced by the measurement processes or comprehensive checks are made on investigation data to ensure full confidence in the reliability and accuracy data.
12	Yes	The interpretation of test results or investigation data is correct.	Yes	Yes	Yes	The interpretation of test results or investigation data is accurate and the analysis of the results or data is used to identify improvements in product performance or the Outcomes of the investigation.
13	Yes	The log book contains a complex level of detail about project ideas and progress and there is evidence that entries have been made on at least six occasions during the life of the project.	Yes	Yes	Yes	The log book is regularly maintained and provides a detailed, informal record of the learner's thinking as the project develops including reflective comments.

Grading Checklist (cont)

No.	No Grade	Grade C Criteria	Grade C	Grade B	Grade A	Grade A Criteria
14	Yes	The project report meets acceptable standards in terms of structure, use of English and clarity, and has accurate conclusions and recommendations. **Double Weight**	Yes	Yes	Yes	The project report is well structured, contains only relevant information, has clear and accurate conclusions and recommendations and uses clear and concise English. **Double Weight**
15	Yes	The project includes an evaluation of the project strategy and activities and includes an evaluation of what the learner has learned from undertaking the project.	Yes	Yes	Yes	The project report includes a complex and comprehensive evaluation of the project strategy and activities and includes a clear evaluation of what the learner has learnt from undertaking the project and the factors involved.
16	Yes	The presentation is acceptably structured, contains largely relevant information and is to time. **Double Weight**	Yes	Yes	Yes	The presentation is well structured, contains only relevant information, is to time and includes the use of appropriate aids. **Double Weight**
17	Yes	The learner gives technically correct answers to questions raised as part of the presentation.	Yes	Yes	Yes	The learner gives clear, concise and technically accurate answers to questions raised during the presentation.
18	Yes	The learner includes a reflective account of the success, or otherwise, of the project in the presentation.	Yes	Yes	Yes	The learner includes a complex, reflective account of the success, or otherwise, of project activities against project objectives in the presentation.

Grading Checklist (cont)

No.	No Grade	Grade C Criteria	Grade C	Grade B	Grade A	Grade A Criteria
19	Yes	The learner undertakes the project without unnecessary interventions from the project supervisor to ensure the project remains on track.	Yes	Yes	Yes	The learner undertakes the project with the minimum of supervision.
20	Yes	The learner provides at least three examples of new knowledge and skills she/he has developed as a result of completing the project.	Yes	Yes	Yes	The learner identifies clear and full details of the new knowledge and skills she/he has developed as a result of doing the project such as project management skills, investigation/research skills, keeping to deadlines, recognising limitations of knowledge — approaching expert sources.
21	Yes	None	Yes	Yes	Yes	The learner introduces a significant novel feature into the project.
22	Yes	The learner demonstrates an acceptable level of motivation throughout the project.	Yes	Yes	Yes	The learner demonstrates a high-level of self-motivation throughout the project.
23	Yes	None	Yes	Yes	Yes	The learner undertakes additional research well beyond that demanded by the project.

Guidance on the completion of the Grading Checklist

Centre staff are asked to read the following guidance notes before completing the Grading Checklist.

The checklist had been designed to help assessor(s) decide what Grade should be awarded to a learner completing the Aircraft Engineering Project. It will also be used by external verifiers as part of the external verification of project work.

A Grading Checklist form should be completed for each learner who has been entered for the Aircraft Engineering: Graded Unit 2 (Aircraft Engineering Project)

In completing the checklist, assessors should take note of the following points.

1 For each item shown in the checklist, the Yes should be circled which most closely reflects the learner's performance. It can be seen from the checklist that grade criteria for Grade C and Grade A passes have been included in the checklist and items 14 and 16 are double weighted.

2 A Grade B should be awarded where a learner's performance lies approximately mid-way between a Grade C and a Grade A (ie better than a Grade C (Competent) but not good enough to be a Grade A (Highly Competent).

3 No grade should be awarded where a learner's performance is not good enough to satisfy a Grade C Pass (ie a competent level of performance).

4 Once centre assessor(s) have completed the twenty three items, they should then apply their own professional judgement to decide what Grade to award the learner.

5 In arriving at the grade, due account should be taken of the distribution circles around 'Yes'. For example, if 19 out of the 24 items have been circled 'Yes' under the Grade B column and the other five have been circled under the Grade C column, then it is likely that the assessor(s) will award the learner a Grade B. Professional judgement is much more involved where, for example, if 'Yes' is circled 12 times under the Grade A column and 12 times under the Grade B column. The assessor's first-hand knowledge of the learner's performance will influence whether the learner is awarded Grade A or Grade B. External verifiers are unlikely to overturn the grading awarded by the centre assessor(s) unless they are not happy that grading judgements have been awarded in a fair, consistent and rigorous manner.

Centres may provide additional comments and/or evidence in support of their grading decisions.

History of changes to Graded Unit

Version	Description of change	Date

General information for learners

Graded Unit title: Aircraft Engineering: Graded Unit 2

Aircraft Engineering: Graded Unit 2 allows you to provide evidence to demonstrate that you have achieved the principal aims of the HND Aircraft Engineering:

- Develop the ability to apply analysis and synthesis skills to the solution of aircraft engineering problems.
- Develop learning and transferable skills (including Core Skills).
- Develop knowledge and skills in planning, scheduling and project management.
- Develop investigation skills.
- Develop a range of Communication knowledge and skills relevant to the needs of aircraft incorporated engineers.
- Develop knowledge, understanding and skills in a range of core aircraft principles.
- Expand on the range of knowledge, understanding and skills in the core of the HND
- Develop further knowledge and skills beyond those within the core of the HND to provide learners with a focus within one or more of the following aircraft engineering specialisations: Design and Manufacture or Operations and Maintenance.

This Graded Unit will be assessed by the use of a practical assignment (Aircraft Engineering Project) developed by your delivering centre.

The evidence for the project is generated over time and involves three distinct stages — Planning, Developing and Evaluating. Each stage has to be achieved before the next is undertaken.

The evidence for the project is generated over time and involves three distinct stages, where each stage has to be achieved before the next is undertaken. Thus any reassessment of stages must be undertaken before proceeding to the next stage.

The marks allocated to each stage will then be aggregated to arrive at an overall mark for the project. You will then be assigned an overall grade based on the following grade boundaries:

A = 70%–100%
B = 60%–69%
C = 50%–59%

In addition to the assessment, this Graded Unit may also contribute towards the component 'Planning and Organising' of the Core Skill *Problem Solving* at SCQF level 6. You may have to develop a plan for your own research when completing this Graded Unit.

You may also have the opportunity to develop the Core Skill *Working with Others* at SCQF level 6. The Graded Unit may provide the opportunity to work within a group and co-operate and contribute to group decisions regarding your chosen project.