Propulsion Technician Apprenticeship Standard, Level 4

End-Point Assessment Plan

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1. Introduction.

This document sets out the requirements and process for the end-point assessment (EPA) of the Propulsion Technician apprenticeship standard, level 4. It is for end-point assessment organisations (EPAOs) who need to know how EPA for this apprenticeship must operate. It will also be of interest to propulsion technician employers, apprentices and training providers.

All apprenticeship standards must include an independent EPA to assess the apprentice's occupational competence specified in the occupational standard. The Propulsion Technician apprenticeship is a core and options occupational standard. Apprentices must be assessed against the occupational core and one option: propulsion test or engine build.

Propulsion Technician apprentices will typically spend 42-months on-programme working towards the occupational standard, with a minimum of 20% off-the-job training. The actual duration will depend on prior qualifications and relevant experience.

The EPA should only start once the apprentice has met the EPA gateway requirements and can be evidenced to the EPAO. The employer must be satisfied that the apprentice is consistently working at, or above, the level set out in the occupational standard, they must have compiled supporting evidence and have had a case study project title and scope agreed by their EPAO and employer. In addition, apprentices without English and mathematics at level 2 must achieve this level prior to taking their EPA[1].

The EPA must be conducted by an organisation approved to offer assessment services against this apprenticeship standard, as selected by the employer, from the Education and Skills Funding Agency's (ESFA) Register of End-Point Assessment Organisations (RoEPAO).

The EPA consists of two distinct assessment methods:

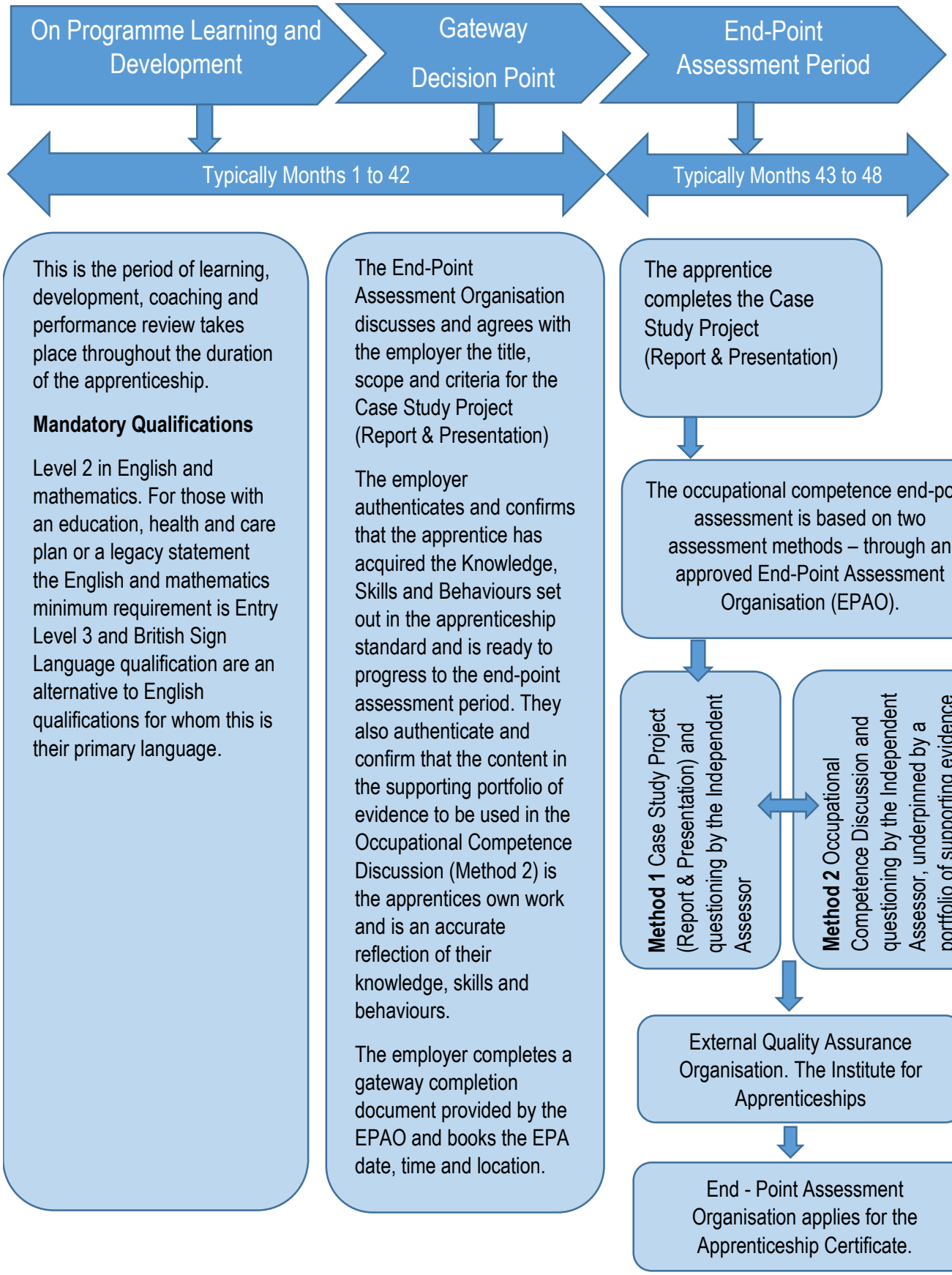
- Case study project: report, presentation and questioning
- Occupational competence discussion, underpinned by supporting evidence

Performance in the EPA will determine the apprenticeship grade awarded i.e. fail, pass or distinction.

On successful completion of the apprenticeship standard and supported by the required experience and evidence, the apprentice may apply to a relevant Professional Engineering Institution licenced by the Engineering Council for professional recognition at the appropriate level such as Engineering Technician (EngTech) subject to meeting any requirements set by the Professional Engineering Institution.

[1] For those with an education, health and care plan or a legacy statement the apprenticeships English and maths minimum requirement is Entry Level 3. British Sign Language qualification is an alternative to English qualifications for those whom this is their primary language.

2. Summary of a Typical Apprenticeship Journey - Level 4 Propulsion Technician.



3. End-Point Assessment Gateway.

The independent end-point assessment is synoptic, as it takes an overview of an apprentice's occupational competence. It is important, therefore, that this should only take place when the employer is confident that the apprentice has met all the knowledge, skills and behaviours (KSBs) as set out in the standard and is performing competently in their job role.

Gateway requirements:

- Employer confirms apprentice is working at, or above the level set out in the occupational standard

- The apprentice must have achieved Level 2 in English and mathematics. For those with an education, health and care plan or a legacy statement the English and mathematics minimum requirement is Entry Level 3 and British Sign Language qualifications are an alternative to the English qualifications for whom this is their primary language.

- Agreement by the apprentice's employer and independent assessor on the title and content of the case study project to be completed by the apprentice during the end-point assessment period. The case study project will be the basis of the report, presentation and questioning for assessment method 1. The project should allow the opportunity to cover the KSBs assigned to this method of assessment and the following should be discussed and agreed at the gateway as a minimum:
    1. Background
    2. Outline of the project to be undertaken
    3. Justification for the project (business need/impact and alignment to the relevant KSBs
    4. Potential risks
    5. Consideration of legislation, regulation, industry and organisational policies, procedures and requirements
    6. Proposed plan for implementation
    7. Stakeholder engagement (internal and/or external)
    8. Measures of success

- The case study project will be assessed against the KSBs as set out in Annex A (core and pathway specific). The case study project must cover duties undertaken by a Propulsion Technician including:
    1. Supporting the development of propulsion technologies
    2. Working to company processes and procedures
    3. Managing risk and the application of Health and Safety within their area of responsibility
    4. Managing any required pre-checks on test or build systems
    5. Leading the setting up of equipment and ancillary systems used for build or test
    6. Ensuring any instrumentation captures high quality data in a systematic and repeatable way
    7. Carrying out checks, measurement and calibration activities
    8. Leading the build or testing of propulsion units
    9. Monitoring and validating test or build data quality
    10. Identifying and contributing to finding solutions where problems arise
    11. Contributing to the development of proposals for continuous improvement

Examples of a typical project could be:

1) To build development engines to incorporate a number of thermocouples at strategic points in the engine in order to obtain data on engine performance to a specification set by the engineer
2) To prepare and set up emission tests on static engines in order to produce high quality test data for an engineer to use to support the engine development programme.to meet recognised international and UK standards

Supporting portfolio of evidence for Method 2 (Occupational Competence Discussion) requirements:

Apprentices must collate naturally occurring evidence during the on-programme period from their workplace, backed up by relevant company processes and procedures. This evidence will a) enable the apprentice to showcase specific work related projects/tasks that they have completed on their own during the apprenticeship, to standards required by their employer and b) demonstrate how they have met the relevant KSB statements assessed by this method as set out in the Level 4 Propulsion Technician standard, from projects/tasks completed in the workplace. The supporting evidence is used to inform the occupational competence discussion and must include relevant and sufficient evidence to cover all the KSBs as detailed in Annex A.

The supporting evidence must be generated from:

- A minimum of three specific records of the work undertaken by the apprentice including any quality/compliance records, reports or documents produced as part of the work activity such as job cards, test scripts, data reports, build specifications, quality records or fault reports.

together with:

- Evidence of the way the apprentice carried out the activities to meet the requirements of the standard, such as technical expert observations.
- Information covering, as applicable, any preparation activities undertaken, information obtained, safety measures applied, personal protective equipment (PPE) requirements, tools and equipment used, reference to applicable work instructions or procedures and any compliance and/or problems/issues identified and how they were addressed.
- Related write ups/reports/assignments to support the attainment and achievement of underpinning knowledge requirements (where applicable).

Each project/task outcome must be authenticated by the apprentice's line manager or other competent person designated by the employer confirming the project/tasks completed by the apprentice met the employer requirements in terms of **Safety**, **Quality, Performance and Time.**

The supporting evidence can include other relevant documentation such as technical training courses, company policies and procedures that supports the attainment of the KSBs assessed by the occupational competence discussion. The supporting evidence **must** be available during the occupational competence discussion.

Additional notes for the requirements for the supporting portfolio of evidence for Assessment Method 2. (Occupational Competence Discussion).

It is important that the apprentice carefully selects the projects/tasks and evidence to be used to support the achievement of the KSBs set out in Annex A for Assessment Method 2. It is not about the volume of evidence but the quality of evidence that aligns to and covers the relevant KSBs at least once but no more than three times. It is expected that each piece of evidence in the supporting portfolio will cover multiple KSBs. The supporting evidence must consist of a maximum of twenty pieces of evidence. The evidence must be mapped to the KSBs assessed by the occupational competence discussion.

The independent assessor must review the supporting evidence prior to the occupational competence discussion, the assessor should have access to the supporting evidence typically ten working days prior to the EPA. This will enable the independent assessor to choose/adapt specific and targeted questions to be used during the occupational competence discussion from a bank of pre-prepared questions developed by the EPAO.

In certain circumstances, depending on the nature of the business/department where the apprentice is employed, the evidence/documentation may not be allowed to leave the premises and/or certain cases information in the evidence may be required to be redacted for confidentially reasons. The EPAO and their independent assessors may also be required to sign a confidentially/non-disclosure agreement with the apprentice's employer.

4. Assessment Methods.

The EPA consists of two distinct assessment methods:

- Case study project: report, presentation and questioning
- Occupational competence discussion

The EPA must be completed over a maximum period of 6-months, after the apprentice has met the EPA gateway requirements. It is anticipated that the case study presentation and questioning components will take place on the same day as the occupational competence discussion to aid efficiency, although this is not a requirement. The two assessment methods can be undertaken in any order. When completed on the same day, it is recommended that there is a break of 45-minutes between the two assessment methods to allow the independent assessor to record notes and make the assessment decision. It will also allow the apprentice and independent assessor to prepare for the second assessment method.

The apprentice will be informed of the overall assessment decision as soon as possible after both end-point assessment methods have been completed. This may be after the End-Point Assessment Organisation has moderated the decisions made by independent assessors.

Requirements for each assessment method are detailed below.

4.1 Assessment Method 1. Case Study Project: Report, Presentation and Questioning.

The Case Study Project: Report, Presentation and Questioning must be based on a work-based project/task that the apprentice has completed during the EPA period.

Evidence from the different components – report, presentation and questioning will be assessed holistically against the KSBs as shown in Annex A. It will be graded - fail, pass or distinction, using the grading criteria and descriptors in Annex B.

Typically the project with be undertaken over a 6/8 week period. The apprentice must complete the report by or before the end of month three of their EPA period. The EPAOs must ensure the presentation and questioning is scheduled during the apprentice's maximum EPA period, after the report has been reviewed.

Report

- The report should contain 2500 words +/- 10%, detailing the scope, objectives and outcomes of the case study project. The project report must include as a minimum:
    1. Department overview
    2. Project brief detailing objectives/scope
    3. Project plan
    4. Company documentation (such as build or test specifications and procedures)
    5. Tools and equipment requirements
    6. Safety requirements including any risk assessments
    7. How project objectives/scope were undertaken
    8. Project analysis and conclusions
    9. Make recommendations
    10. Mapping to relevant Knowledge, Skills and Behaviours
    11. Annex – Supporting evidence
- The apprentice must provide supporting evidence relating to the project in an annex, which does not contribute to the word count. There must be a maximum of fifteen discrete pieces of evidence. Evidence could include job cards, test scripts, data reports, build specifications, quality/compliance records or fault reports, pictures or links to video clips. This list is not definitive and other relevant sources are permissible. The annex must include a mapping of the evidence to the relevant KSBs for this assessment method. It is expected that each piece of evidence will cover multiple KSBs. The annex must also include a statement from the employer authenticating the apprentice's evidence. It is important that the apprentice carefully selects the evidence to be used to support the project report and only includes relevant evidence. It is not about the volume of evidence but the quality of evidence that aligns to and covers the relevant KSBs.
- The independent assessor must review the case study report and supporting evidence prior to the end-point assessment at a date, time and location agreed with the employer. This must be a minimum of 10 working days prior to the case study project presentation. However, for efficiency reasons this time can be reduced on agreement with the EPAO, who is responsible for ensuring that the assessor has sufficient time to prepare for the presentation and questioning.

- In certain circumstances, depending on the nature of the business/department where the apprentice is employed, the evidence/documentation may not be allowed to leave the premises and/or certain cases information in the evidence may be required to be redacted for confidentially reasons. The EPAO and independent assessors may also be required to sign a confidentially/non-disclosure agreement with the apprentice's employer.

Presentation and Questioning

- Apprentices must prepare and deliver a presentation, based on their case study project to their independent assessor.
- A technical expert from the employer can be in attendance at the request of the EPAO. Their role would be to provide the independent assessor with any relevant technical support, advice and guidance such as confirming company policies, procedures, processes, providing context on technical information or on emerging technologies. Any information provided by the employer technical expert must only be at the request of the independent assessor who assesses and determines the grade awarded. The employer technical expert must not provide evidence on behalf of the apprentice or seek to influence the apprentice or independent assessor in any way.
- The independent assessor must review the case study presentation prior to the end-point assessment at a date, time and location agreed with the employer. This must be a minimum of 10 working days prior to the end-point assessment. However, for efficiency reasons this time can be reduced depending on the number of apprentices requiring the EPA and the availability of the assessor.
- The project report and supporting evidence must be available throughout the duration of the presentation and questioning components so that it can be referenced by the independent assessor and/or apprentice.
- The apprentice should have a minimum of two weeks' notice of the date and time of the presentation and questioning component.
- The presentation must be 30-minutes +/- 10% in duration.
- The presentation must cover: the project scope, outcomes/achievements, and where applicable any difficulties faced/lessons learnt and recommendations.
- The apprentices can use a range of aids to support the presentation, such as flip charts, video clips, work products/outputs and Power Points.
- The presentation must be followed by a question and answer session, which must be 35-minutes +/- 10% in duration. The independent assessor must ask a minimum of 8 open questions. Follow up questions are allowed to seek clarification. The question and answer session will provide the opportunity for the independent assessor to seek clarification and probe for further detail/evidence as required.
- EPAOs must develop a bank of sample questions which can be used and contextualised by independent assessors during the questioning. The independent assessor can develop/adapt questions based on their review of the report, presentation and supporting evidence.

- The sample question bank must be of sufficient size to prevent predictability and must be reviewed regularly, at least one per year to ensure they, and the questions they contain are fit for purpose.
- EPAOs must provide a structured template for independent assessors to record the presentation and questioning evidence, with a clear and auditable mechanism for providing feedback to the apprentice.
- The presentation and questioning components can be recorded (audio or video) if all parties are in agreement. Where permission is not given it is permissible for another independent assessor to be present to scribe/document evidence presented and record the response to questions. Where a second independent assessor is used to act as a scribe they must not be involved in any assessment decision and must be independent i.e has had nothing to gain from the outcome of the assessment and has had no direct involvement in the day to day training and development of the apprentice during the on-programme phase of apprenticeship.
- The presentation and questioning components can be conducted face-to-face or via live video link (where a live video link is used the EPAO must guarantee the integrity of the assessment process).
- The presentation and questioning components must be conducted in a 'controlled environment', i.e. a quiet room, free from distraction and influence, away from the apprentice's normal work area. It is anticipated a room will be sourced at the apprentice's employer's premises to minimise cost however, other venues may be sourced as necessary.

4.2. Assessment Method 2. Occupational Competence Discussion.

The Occupational Competence Discussion is a structured and formal discussion between the apprentice and the independent assessor on a one-to-one basis, informed by the apprentice's supporting evidence. The supporting evidence is not directly assessed but must be used by the apprentice to illustrate their answers.

Evidence from the occupational competence discussion will be assessed against the KSBs as shown in Annex A. It will be graded - fail, pass or distinction, using the grading criteria and descriptors in Annex B. EPAOs must develop a bank of core questions which can be used and contextualised by the independent assessor during the Occupational Competence Discussion. The question bank must be of sufficient size to prevent predictability and must be reviewed regularly, at least one per year to ensure they, and the questions they contain are fit for purpose. The independent assessor must ask a minimum of 10 open questions. Follow up questions are allowed to seek clarification and/or to further explore competence against the KSBs assessed by the occupational competence discussion.
EPAOs must develop a structured template for the independent assessor to use during the Occupational Competence Discussion, to provide robustness, consistency and fairness with a clear and auditable mechanism for providing feedback to the apprentice.

The requirements for the Occupational Competence Discussion are:

- The apprentice should have a minimum of two weeks' notice of the date and location of the Occupational Competence Discussion.

- The Occupational Competence Discussion will be 60 +/- 5 minutes in duration.
- The apprentice must make their supporting evidence available throughout the duration of the Occupational Competence Discussion so that it can be referenced during the discussion and subsequent questioning by the independent assessor.
- The Occupational Competence Discussion will be conducted face to face or via live video link (where the End-Point Assessment Organisation have the facilities available and can guarantee the integrity of the end-point assessment).
- The Occupational Competence Discussion will be conducted in a 'controlled environment', i.e. a quiet room free from distraction and influence, away from the apprentice's normal work area.
- The Occupational Competence Discussion can be recorded (audio or video) if all parties are in agreement. Where permission is not given it is permissible for another independent assessor to be present to document evidence presented and record the response to questions. Where a second independent assessor is used to act as a scribe they must not be involved in any assessment decision and must be independent i.e has had nothing to gain from the outcome of the assessment and has had no direct involvement in the day to day training and development of the apprentice during the on-programme phase of apprenticeship.
- A technical expert from the employer can be in attendance at the request of the EPAO in order to provide the independent assessor with any relevant technical support, advice and guidance such as confirming company policies, procedures, processes, providing context on technical information or on emerging technologies. Any information provided by the employer technical expert must only be at the request of the independent assessor who has the final say over the end-point assessment and grade awarded. The employer technical expert must not provide evidence on behalf of the apprentice or seek to influence the apprentice or independent assessor in any way.

5. Roles and Responsibilities.

Ensuring independence is key to the validity and robustness of the end-point assessment. Although employers and training providers are involved in the on-programme training and assessment, providing opportunities for the apprentice to generate the required evidence against the knowledge, skills and behaviours and supporting the apprentice to prepare for the end-point assessment, the actual end-point assessment process including the development and use of assessment documentation and grading decision is managed and administered by the End-Point Assessment Organisation. The independent assessor cannot have previously been involved in the 'on-programme' training of the apprentice.

5.1 End-Point Assessment Organisations.

End-Point Assessment Organisations are responsible for appointing and managing their independent assessors and for ensuring that assessments are;

- Fair
- Valid
- Reliable
- Consistent

End-Point Assessment Organisations wishing to offer end-point assessment services for this apprenticeship standard must be registered on the Education and Skills Funding Agency (ESFA) Register of End-Point Assessment Organisations (RoEPAO). They must also:

- Ensure independent assessors meet the criteria outlined in this end-point assessment plan including occupational and assessment expertise.
- Deliver the end-point assessment outlined in this plan.
- Be able to demonstrate a detailed understanding of the occupational role profile.
- Provide adequate information, advice and guidance documentation to enable apprentices, employers and providers to prepare for the end-point assessment.
- Use appropriate assessment recording documentation to ensure all apprentices are assessed fairly and consistently based on the grading criteria detailed in Section 10 and Annex B. The assessment documentation should also provide a clear and auditable mechanism for providing assessment decision feedback to the apprentice.
- Develop appropriate processes and procedures to justify the outcome of an end-point assessment, including appeals, re-takes/re-sits and complaints procedures.
- Ensure there are no unnecessary barriers, cognitive or physical, to an apprentice attending and completing the end-point assessments. Assessments and assessment environments must be designed to be accessible to all apprentices and be in line with the EPAOs Reasonable Adjustments Policy.
- Provide, as required, appropriate assessor training to ensure assessment and grading decisions are based on best practice models.
- Have the capacity and capability to offer, where requested, information, advice and guidance for apprentices, employers and/or training providers to support the preparation for the end-point assessment.
- Develop banks of core questions for use in the Case Study Project (Report, Presentation and Questioning) and Occupational Competence Discussion. They must be of sufficient size to prevent predictability and be reviewed regularly (at least once a year) to ensure the core questions are fit for purpose.

End-Point Assessment Organisations must maintain high quality systems and processes, which validate and continuously review independent assessor's experience, skills and competence. They must also maintain a system that allows individual end-point assessments and the independent assessor's decision, to be externally quality assured and verified by an External Quality Assurance provider.

End-Point Assessment Organisations must have processes and procedures in place with their independent assessors, which set out clearly what is expected of them in this role. These processes and procedures must be understood by all parties involved in the assessment of the apprenticeship. The final decision on end-point assessment grade of Fail, Pass or Distinction grade lies solely with the independent assessor and the End-Point Assessment Organisation.

5.2 The Independent Assessor

Independent assessors are responsible for conducting the end-point assessment of the apprenticeship standard and are appointed and managed by an End-Point Assessment Organisation. The independent assessor must be someone who has nothing to gain from the outcome of the end-point assessment

and has had no direct involvement with apprentice, their employer or training provider. When conducting an end-point assessment, the independent assessor is acting on behalf of the relevant End-Point Assessment Organisation, and is subject to the auditing procedures set by them. Independent assessors will be subject to rigorous quality assurance, and must take part in regular training and standardisation/moderation activities specified by the End-Point Assessment Organisation.

The following key principles are mandatory for independent assessors:

5.2.1 Independent Assessor Occupational requirements.

Independent Assessors must:

- Have in depth knowledge and understanding of the Level 4 Propulsion Technician standard, relevant end-point assessment plan and the end-point assessment process including the grading criteria specified in Section 10 and Annex B.
- Have recent and relevant experience of the occupation/sector (i.e. the different types of propulsion systems, the tests that have to be undertaken, the types of instrumentation used and data sets collected for evaluation) which should be at or above the level they are assessing, and either gained in the last two years or have significant experience of the occupation/sector. See section on CPD.
- Be suitably qualified and experienced in undertaking assessment of occupational competence in line with best practice models. It is recommended that Independent assessors have achieved or be working towards relevant qualifications in assessment practice such as the Level 3 Award in Assessing Competence in the Work Environment. End-Point Assessment Organisations may use new independent assessors who are in training/development. However, all assessment decisions must be countersigned by a fully qualified and experienced independent assessor who also has the required technical knowledge and skills of the occupational area being assessed.

5.2.2 Assessment Practice.

Independent Assessors from the End-Point Assessment Organisation must:

- Comply with the standardised assessment procedures and processes as set out by the End-Point Assessment Organisation including assessment practice, appeals, declaring any conflicts of interest and adhering to any client confidentially requirements and data/information protection regulations.
- Attend regular standardisation/moderation meetings, depending on demand, but typically there should be opportunities for meetings to take place twice a year. As a minimum independent assessors must attend one standardisation/moderation meeting per year.
- Share best practice in assessment through a range of appropriate methods, such as email, meetings, events, presentations, workshops and/or social media.
- Have sufficient resource to carry out the role of the independent assessor including time for planning and preparation activities.

5.2.3 Continuous Professional Development. (CPD)

Independent assessors must regularly update their occupational expertise, sector knowledge in the areas being assessed to ensure currency of skills, knowledge and behaviours. This should be achieved through planned CPD, appropriate to their individual development needs. A record of this should be maintained through an up-to-date CPD log. Examples of CPD could be (but not limited to):

- External employer visits.
- Achievement of new or updated training or qualifications, including both technical and assessor qualifications.
- Attendance at seminars and/or conferences.
- Attendance at development days.

5.3 Employer.

The employer will support the apprentice throughout the apprenticeship helping them to reflect on their performance throughout the period of on-programme training and development. They will ensure the apprentice prepares and collates the necessary evidence to demonstrate occupational competence against the requirements of the apprenticeship standard and will authenticate and confirm that the content in the Case Study Project (Report, Presentation and Questioning) and supporting evidence (Method 1) and supporting evidence to be used in the Occupational Competence Discussion (Method 2) is the apprentices own work and is an accurate reflection of the apprentices knowledge, skills and behaviours.
They will also ensure that the apprentice is prepared for the end-point assessment, Case Study Project (Report, Presentation and Questioning) and Occupational Competence Discussion) and will formally confirm to the End-Point Assessment Organisation that the apprentice is ready for end-point assessment. The employer will also liaise with their selected End-Point Assessment Organisation with regards to the scheduling, timing and location of the end-point assessments, ensuring that any facilities and resource requirements such as PowerPoint projectors/screen, flip charts and interview rooms are fit for purpose and take into account any security and confidentiality (personal and/or business) requirements.

5.4 Training Provider.

The training provider may be consulted by the employer when determining readiness for end-point assessment but is not involved in the actual end-point assessment of apprentices.

6. Quality Assurance.

6.1 Consistency.

Independent end-point assessment is a culmination of a planned training and development journey resulting in external independent assessment that confirms or not that the apprentice has met the apprenticeship standard. As such the process and procedure for carrying out an end-point assessment must be quality assured to ensure consistent, reliable and valid judgements.

6.2 Internal Quality Assurance.

Internal quality assurance is the responsibility and carried out by the approved End-Point Assessment Organisation and involves ensuring that individual end-point assessments are undertaken correctly and consistently including the standardisation and reporting of the outcomes of the end-point assessment. It must:

- Ensure there are robust processes in place to deliver end-point assessments to the required standard and that they are appropriate for the occupation.
- Train all independent assessors to ensure they assess consistently against the requirements of the standard, including the opportunity to attend standardisation workshops annually.
- Apply robust internal quality assurance and verification processes to the end-point assessments.

Internal quality assurance must be completed by an appropriately qualified person, and that person must not have been involved in any aspect of the delivery or end-point assessment of the apprenticeships they are quality assuring. A minimum of 10% of assessment decisions must be moderated, the actual level depending on the experience and performance of the independent assessor.

6.3 External Quality Assurance.

The Institute for Apprenticeships will conduct the external quality assurance for the Propulsion Technician apprenticeship standard, level 4.

7. Implementation.

7.1 Affordability.

The cost and practicalities of the assessment process have been a key consideration in the development of the end-point assessment plan due to the range and type of businesses likely to deliver this apprenticeship. Both large and small employers alike must manage the cost of apprenticeship training and development and prepare the apprentice for the end-point assessment. Whilst the end-point assessment needs to be robust, valid and reliable the assessment needs to be affordable and not take away vital funding to support the training and development of apprentices for all, irrespective of the size of the employer and the number of apprentices they recruit.
As part of the negotiation process between the employer and End-Point Assessment Organisation, to ensure transparency and value for money, the employer can ask the End-Point Assessment Organisation for a detailed cost breakdown of the costs to deliver the end-point assessment.

7.2 Accessibility and Manageability.

The practicalities and accessibility of the end-point assessments have been considered during the development of this assessment plan to ensure that the assessments are equally accessible to large and small employers across a range of employers and for all apprentices. End-Point Assessment Organisations must ensure there are no unnecessary barriers to an apprentice completing the end-

point assessments. End-point assessments and assessment environments must be designed to be accessible for all apprentices and be in line with the EPAOs Reasonable Adjustments Policy.
Whilst the EPA project will have value for the employer, End-Point Assessment Organisations must work with employers to manage end-point assessments in a way that minimises the impact on the employers' business activity.
On demand end-point assessment should be offered by the End-Point Assessment Organisation or on a quarterly basis as a minimum, this will give employers and apprentices access to end-point assessments on a regular basis and allow adequate time for preparation. This will also give End-Point Assessment Organisations adequate time to plan assessments to ensure they are manageable, feasible and cost efficient.
End-point assessment should ideally be undertaken within a six month period following the employer gateway decision point.
It is anticipated that there will be 50 starts per year.

8. Grading.

Independent assessors must individually grade each assessment method – fail, pass or distinction, according to the requirements set out in this plan. Restrictions on grading apply where apprentices re-sit/re-take an assessment method – see re-sit/re-take section below.

The EPAO must combine the grades of both assessment methods to determine the EPA grade. The assessment methods are equally weighted. To achieve an EPA pass, apprentices must achieve at least a pass in both assessment methods. To achieve an EPA distinction, apprentices must achieve a distinction in both assessment methods (See Annex B). The apprentice has failed if they do not achieve a pass in all the relevant KSBs for both assessment methods (See Annex A). The apprentice is awarded a pass if they have demonstrated the requirements for a pass in all the relevant KSBs for both assessment methods (See Annex A). See grading combinations table below.

Independent assessors' decisions must be subject to moderation by the EPAO – see internal quality assurance section below. Decisions must not be confirmed until after moderation.

Project report, presentation and questioning grade	Occupational competence discussion grade	Overall EPA grade
Fail	Fail	Fail
Pass	Fail	Fail
Fail	Pass	Fail
Distinction	Fail	Fail
Fail	Distinction	Fail
Pass	Pass	Pass
Distinction	Pass	Pass
Pass	Distinction	Pass
Distinction	Distinction	Distinction

9. Re-sits and Re-takes.

Apprentices awarded a Fail in one or both assessment methods will be offered the opportunity to re-sit or re-take. A re-sit does not require further learning, whereas a re-take does. Re-sits/re-takes must not

be offered to apprentices wishing to move from pass to distinction. Apprentices should have an agreed action plan to prepare for the re-sit/re-take. If requested the employer can invite their Training Provider to be part of the development of any action plans for a re-take.

The timescales for a resit/retake is agreed between the employer and EPAO. A resit is typically taken within three months of the EPA outcome notification. The timescale for a retake is dependent on how much re-training is required and is typically taken within six months of the EPA outcome notification.

The maximum grade awarded to a re-sit/re-take will be Pass, unless the End-Point Assessment Organisation identifies exceptional circumstances accounting for the original grade of Fail.

10. Professional Engineering Institution Recognition.

On completion of the apprenticeship and supported by the required experience and evidence, the apprentice may apply to a relevant Professional Engineering Institution licenced by the Engineering Council for professional recognition at the appropriate level such as Engineering Technician (EngTech), subject to meeting any requirements set by the Professional Engineering Institution. For more details on the requirements and application process go to the Engineering Council website at www.engc.org.uk

Annex A - End-Point Assessment Methods Mapping.

The following table provides an overview of the requirements detailed within the **Level 4 Propulsion Technician** standard and where they are covered by each end-point assessment component.

	Core Knowledge – The apprentice must be able to demonstrate an understanding of:	**Assessment Method**
CK1	The statutory and organisation health and safety policies, procedures and regulations that must be adhered to in a propulsion environment.	Case Study Project (Report, Presentation & Questioning) Occupational Competence Discussion
CK2	The risk assessment process, procedures and documentation used within their own area of responsibility.	Case Study Project (Report, Presentation & Questioning)
CK3	How to communicate effectively, listen, question, support and mentor others.	Occupational Competence Discussion
CK4	The relevant internal and external quality standards and procedures that apply to the design, development and manufacture of propulsion systems.	Case Study Project (Report, Presentation & Questioning)
CK5	The principles and purpose of quality auditing.	Occupational Competence Discussion
CK6	The core engineering principles such as mathematics, science, mechanical and electrical/electronic applications relevant to their specialism.	Occupational Competence Discussion
CK7	The importance of developing and maintaining Standard Operating Procedures (SOP's) in order to meet all the relevant requirements, i.e. legal & code of practice.	Case Study Project (Report, Presentation & Questioning)
CK8	How to prioritise their own and their team's workload to ensure that targets are met and to ensure effective use of resource/equipment.	Occupational Competence Discussion
CK9	The various data collection systems used and their formats.	Case Study Project (Report, Presentation & Questioning)
CK10	The principles and application of Measurement Systems Analysis methods and techniques.	Occupational Competence Discussion
CK11	How to analyse and interpret first line data accurately in order to, validate quality, draw conclusions, provide recommendations and communicate with others in a recognised format.	Occupational Competence Discussion
CK12	The use, benefits and applications of continuous improvement techniques and methods for engineering (such as Kaizen and Six Sigma).	Occupational Competence Discussion
CK13	The importance for organisations to manage and monitor supplier performance ensuring that cost, service, quality and sustainability objectives are being achieved and their responsibilities in that process.	Occupational Competence Discussion
CK14	How to produce accurate, effective and concise plans, presentations and analysis of graphs/charts, process and lessons learnt documents.	Occupational Competence Discussion
CK15	The Internal and external audit compliance requirements (such as TS16949 and ISO 14001)	Case Study Project (Report, Presentation & Questioning)

	Core Skills – The apprentice must be able to:	**Assessment Method**
CS1	Manage risk and the application of Health and Safety within their area of responsibility.	Case Study Project (Report, Presentation & Questioning) Occupational Competence Discussion
CS2	Communicate effectively, listen, question, support and mentor others, whilst promoting an attention to detail throughout the propulsion development process.	Occupational Competence Discussion
CS3	Manage checks on test or build systems and problem solve where issues arise.	Case Study Project (Report, Presentation & Questioning)
CS4	Demonstrate critical and analytical reasoning, robust planning and task co-ordination.	Occupational Competence Discussion
CS5	Lead the setting up of equipment and ancillary systems used for build or test and where applicable carry out any required modifications.	Case Study Project (Report, Presentation & Questioning)
CS6	Ensure instrumentation captures high quality data in a systematic and repeatable way.	Case Study Project (Report, Presentation & Questioning)
CS7	Carry out checks, measurement and calibration activities following approved procedures and processes.	Case Study Project (Report, Presentation & Questioning)
CS8	Comply with internal processes and procedures to ensure equipment is fit for purpose, maintained correctly and in calibration.	Case Study Project (Report, Presentation & Questioning)
CS9	Monitor and validate test or build data quality.	Case Study Project (Report, Presentation & Questioning)
CS10	Implement proposals for test or build plan modifications based on quality and quantitative data.	Occupational Competence Discussion
CS11	Prioritise test or build output to maximise efficient use of specialist equipment.	Occupational Competence Discussion
CS12	Manage all internal and external customer needs throughout test or build execution.	Occupational Competence Discussion
CS13	Develop procedures and processes necessary to meet all relevant standards and requirements, i.e. legal & code of practice.	Occupational Competence Discussion
CS14	Guide and develop other team members.	Occupational Competence Discussion
CS15	Create internal test or build instructions and process documents.	Occupational Competence Discussion
CS16	Support the development of proposals to develop new/alternative technologies.	Occupational Competence Discussion

	Behaviours – The apprentice must be able to demonstrate the following:	**Assessment Method**
CB1	**Personal Responsibility & Compliance:** Complies with statutory and organisational health & safety regulations and policies at all times. Accepts responsibility for their work load with a responsible approach to risk. Continually demonstrates a high level of motivation and resilience when facing challenges.	Case Study Project (Report, Presentation & Questioning) Occupational Competence Discussion

CB2	**Working Effectively in Teams:** Create and maintain positive, professional and trusting working relationships with the team and a wide range of internal, external and connected stakeholders. Maintains the highest standards of integrity and ethics in all business relationships.	Occupational Competence Discussion
CB3	**Effective Communication & Interpersonal Skills:** Maintain effective partnerships with suppliers and customers through the company processes to achieve sound objectives. Open and honest clear communication using appropriate methods. Always demonstrating a positive and respectful attitude.	Occupational Competence Discussion
CB4	**Quality & Problem Solving:** Strong desire to ensure that the root cause of a problem is identified and addressed, continually seeks opportunities to improve quality, speed and efficiency whilst also demonstrating technical leadership.	Occupational Competence Discussion
CB5	**Continuous Personal Development.** Reflect on skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.	Occupational Competence Discussion

Apprentices must complete the specific knowledge and skills requirements for **one** of the following Propulsion Test or Engine Build pathways:

	Propulsion Test - Specific Knowledge – The apprentice must be able to demonstrate an understanding of:	**Assessment Method**
PTK1	The criteria used to determine the testing method(s) and equipment to be used.	Case Study Project (Report, Presentation & Questioning)
PTK2	The principles of how to create and edit test scripts to ensure data obtained is valid and reliable.	Occupational Competence Discussion
PTK3	The preparation and set up requirements of testing and data collection equipment/ancillary systems.	Case Study Project (Report, Presentation & Questioning)
PTK4	The preparation and set up requirements of propulsion units to be tested.	Case Study Project (Report, Presentation & Questioning)
PTK5	How to run and operate propulsion testing equipment effectively to ensure quality and consistent outcomes including understanding limits of adjustment and parameters for safe running and standardisation.	Occupational Competence Discussion
PTK6	The different types and purpose of the tests that can be carried out on propulsion units/systems being developed such as performance, emissions, climatic, noise, vibration, durability, mechanical, electrical and calibration	Occupational Competence Discussion

	Propulsion Test Specific Skills – The apprentice must be able to:	**Assessment Method**
PTS1	Lead the preparation and installation activities for propulsion units under test	Case Study Project (Report, Presentation & Questioning)
PTS2	Lead the testing activity ensuring the test is carried out in line with manufacturer instructions and/or company standard operating procedures	Case Study Project (Report, Presentation & Questioning)
PTS3	Check and monitor the test to ensure that it is carried out under the specified conditions set out in the test script/specification	Case Study Project (Report, Presentation & Questioning)
PTS4	Ensure the servicing schedules and maintenance of propulsion testing equipment is carried out in line with manufacturer instructions and/or company standard operating procedures	Occupational Competence Discussion
PTS5	Lead the diagnosis and analysis of any faults found on propulsion units under test	Occupational Competence Discussion

	Engine Build - Specific Knowledge – The apprentice must be able to demonstrate an understanding of:	**Assessment Method**
EBK1	The importance of ensuring that engines are not contaminated during the build and the implications for the quality of the development programme data if this is not adhered to.	Case Study Project (Report, Presentation & Questioning)
EBK2	The importance of adhering to the quality criteria such as setting working clearances and torque settings.	Case Study Project (Report, Presentation & Questioning)
EBK3	The different fault diagnostic methods used, their application and selection.	Occupational Competence Discussion
EBK4	The methodologies used for part and product quality investigations.	Occupational Competence Discussion
EBK5	How to validate tooling and build deviations and associated equipment and instrumentation.	Occupational Competence Discussion

	Engine Build Specific Skills – The apprentice must be able to:	**Assessment Method**
EBS1	Check that all preparation activities to support the prototype engine build development programme have been carried out correctly.	Case Study Project (Report, Presentation & Questioning)
EBS2	Ensure that the specified components are available for the build and that they are in a usable condition.	Case Study Project (Report, Presentation & Questioning)
EBS3	Lead the build of the prototype/ development engine ensuring it has been built to the correct specification and is ready for testing.	Case Study Project (Report, Presentation & Questioning)
EBS4	Lead the diagnosis and analysis of any faults identified during the development engine build.	Occupational Competence Discussion
EBS5	Lead and support modification activities to improve engine build reliability and performance.	Occupational Competence Discussion
EBS6	Lead the validation process for tooling and build deviations and associated equipment/instrumentation.	Occupational Competence Discussion

Annex B - Grading Descriptors - Assessment Method 1 - Case Study Project (Report, Presentation & Questioning)

Criteria Ref.	Core Knowledge Criteria		
CK1	The statutory and organisation health and safety policies, procedures and regulations that must be adhered to in a propulsion environment.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe their roles and responsibilities for health and safety and the implications if policies, procedures are not adhered to.	Describe their role and responsibilities for health and safety and the implications if policies, procedures are not adhered to.	Explain the organisation management system for health and safety. For example the evidence includes reference to Governance structure, roles, responsibilities and annual reporting requirements.
CK2	The risk assessment process, procedures and documentation used within their own area of responsibility.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the risk assessment process, procedures and documentation used within their own area of responsibility.	Show that they understand the risk assessment process, procedures and documentation used within their own area of responsibility.	Show that they understand the process how to develop a new risk assessment or modify an existing risk assessment.
CK4	The relevant internal and external quality standards and procedures that apply to the design, development and manufacture of propulsion systems.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the relevant internal and external quality standards and procedures that apply to the design, development and manufacture of propulsion systems.	Show that they understand the relevant internal and external quality standards and procedures that apply to the design, development and manufacture of propulsion systems.	Show that they understand how they know they are working to the most up to date quality build or test standards and procedures where to locate this information. For example the evidence includes reference to external accreditations such as ISO 9001 or TS 16949. Reference to the organisations Quality Managements System including roles and responsibilities.
CK7	The importance of developing and maintaining Standard Operating Procedures (SOP's) in order to meet all the relevant requirements, i.e. legal & code of practice.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the importance of developing and maintaining Standard Operating Procedures (SOP's) in order to meet all the relevant requirements, i.e. legal & code of practice.	Show that they understand the importance of developing and maintaining Standard Operating Procedures (SOP's) in order to meet all the relevant requirements, i.e. legal & code of practice.	Describe how to evaluate the effectiveness of the Standard Operating Procedures (SOP's) being used and the process to be followed to make amendments and the potential implications if SOPs are not adhered to or are not fit for purpose.

CK9	The various data collection systems used and their formats.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the various data collection systems used and their formats.	Show that they understand the various data collection systems used and their formats.	Show that they understand how to select the correct data collection system to be used and the required data format.
CK15	The internal and external audit compliance requirements (such as TS16949 and ISO 14001).		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the internal and external audit compliance requirements (such as TS16949 and ISO 14001).	Show that they understand the internal and external audit compliance requirements (such as TS16949 and ISO 14001).	Explain the purpose and structure of the organisations Quality Management System (QMS) and their responsibilities within it including who they should inform if they identify any non-compliance.
Criteria Ref.	**Core Skills Criteria**		
CS1	Manage risk and the application of Health and Safety within their area of responsibility		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate how they manage risk and the application of Health and Safety within their area of responsibility.	Demonstrate how they manage risk and the application of Health and Safety within their area of responsibility.	Demonstrate where they have identified and recommended improvements to Health and Safety in their work area or improvements in order to mitigate risk.
CS3	Manage checks on test or build systems and problem solve where issues arise.		
CS6	Ensure instrumentation captures high quality data in a systematic and repeatable way.		
CS7	Carry out checks, measurement and calibration activities following approved procedures and processes.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have managed checks on test or build systems and problem solve where issues arise, ensured that instrumentation captures high quality data in a systematic and repeatable way and carried out checks, measurement and calibration activities following approved procedures and processes.	Demonstrate where they have managed checks on test or build systems and problem solve where issues arise, ensured that instrumentation captures high quality data in a systematic and repeatable way and carried out checks, measurement and calibration activities following approved procedures and processes.	Demonstrate where they have provided engineers with new or additional information/data that has led to improvements e.g. setting up of instrumentation, the standard operation procedure/work instruction, in the equipment used in order to capture high quality data, the checking process or the measurement/calibration activities.

CS5	Lead the setting up of equipment and ancillary systems used for build or test and where applicable carry out any required modifications.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the setting up of equipment and ancillary systems used for build or test.	Demonstrate where they have led the setting up of equipment and ancillary systems used for build or test.	Demonstrate where they have made a recommendation to engineers setting out the type of modification required to the set up of equipment and ancillary systems, the standard operation procedure/work instruction or in the equipment used.
CS8	Comply with internal processes and procedures to ensure equipment is fit for purpose, maintained correctly and in calibration.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have complied with internal processes and procedures to ensure equipment is fit for purpose, maintained correctly and in calibration.	Demonstrate where they have complied with internal processes and procedures to ensure equipment is fit for purpose, maintained correctly and in calibration.	Demonstrate where they have developed proposals to make improvements to internal processes and procedures to ensure equipment is fit for purpose, maintained correctly and in calibration, e.g improvement to the maintenance schedule, equipment calibration identification system or training of maintenance personnel.
CS9	Monitor and validate test or build data quality.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have monitored and validated test or build data quality.	Demonstrate where they have monitored and validated test or build data quality.	Demonstrate where they have developed proposals to make improvements to internal processes, procedures or in the equipment used in order to improve the monitoring or validation of test or build data quality.
Criteria Ref.	**Core Behaviours Criteria**		
CB1	Personal Responsibility & Compliance.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have complied with statutory and organisational health & safety regulations and policies. Accepted responsibility for their work load with a responsible approach to risk. Continually shown a high level of motivation and resilience when facing challenges.	Demonstrate where they have complied with statutory and organisational health & safety regulations and policies. Accepted responsibility for their work load with a responsible approach to risk. Continually shown a high level of motivation and resilience when facing challenges.	Demonstrate where they have met one the following: 1) challenged other people on Health and Safety compliance. 2) advocated best practice behaviours to others.

Criteria Ref.	Propulsion Test – Specific Knowledge Criteria		
PTK1	The criteria used to determine the testing method(s) and equipment to be used.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the criteria used to determine the testing method(s) and equipment to be used.	Show that they understand the criteria used to determine the testing method(s) and equipment to be used.	Show that they understand how to evaluate and check that the criteria used to determine the testing method(s) and equipment to be used is fit for purpose.
PTK3	The preparation and set up requirements of testing and data collection equipment/ancillary systems.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the preparation and set up requirements of testing and data collection equipment/ancillary systems.	Show that they understand the preparation and set up requirements of testing and data collection equipment/ancillary systems.	Explain the implications for the test and future development of the propulsion system if the data collection equipment/ancillary systems are not prepared or set up correctly.
PTK4	The preparation and set up requirements of propulsion units to be tested.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the preparation and set up requirements of propulsion units to be tested.	Show that they understand the preparation and set up requirements of propulsion units to be tested.	Explain the implications for the test and future development of the propulsion system if the set up requirements for the propulsion unit under test is not carried out correctly are not prepared or set up correctly.
Criteria Ref.	**Propulsion Test – Specific Skills Criteria**		
PTS1	Lead the preparation and installation activities for propulsion units under test.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the preparation and installation activities for propulsion units under test.	Demonstrate where they have led the preparation and installation activities for propulsion units under test.	Demonstrate where they have led and supported multiple concurrent projects to prepare and install propulsion units under test.

PTS2	Lead the testing activity ensuring the test is carried out in line with manufacturer instructions and/or company standard operating procedures.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the testing activity ensuring the test is carried out in line with manufacturer instructions and/or company standard operating procedures.	Demonstrate where they have led the testing activity ensuring the test is carried out in line with manufacturer instructions and/or company standard operating procedures.	Demonstrate where they have led multiple concurrent testing projects to ensure the tests are carried out in line with manufacturer instructions and/or company standard operating procedures.
PTS3	Check and monitor the test to ensure that it is carried out under the specified conditions set out in the test script/specification.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have checked and monitored the test to ensure that it is carried out under the specified conditions set out in the test script/specification.	Demonstrate where they have checked and monitored the test to ensure that it is carried out under the specified conditions set out in the test script/specification.	Demonstrate where they have led multiple concurrent testing projects in order to check and monitor the test to ensure that it is carried out under the specified conditions set out in the test script/specification.
Criteria Ref.	**Engine Build – Specific Knowledge Criteria**		
EBK1	The importance of ensuring that engines are not contaminated during the build and the implications for the quality of the development programme data if this is not adhered to.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the importance of ensuring that engines are not contaminated during the build and the implications for the quality of the development programme data if this is not adhered to.	Show that they understand the importance of ensuring that engines are not contaminated during the build and the implications for the quality of the development programme data if this is not adhered to.	Show that they understand how to evaluate processes, procedures and test data to either make improvements to contamination procedures or to reinforce the need to comply with processes and procedures.
EBK2	The importance of adhering to the quality criteria such as setting working clearances and torque settings.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the importance of adhering to the quality criteria. For example the evidence includes reference to criteria such as setting working clearances, applying correct torque settings and using the specified securing devices.	Show that they understand the importance of adhering to the quality criteria. For example the evidence includes reference to criteria such as setting working clearances and applying correct torque settings and using the specified securing devices.	Show that they have the depth of knowledge to understand the implications if the engine build does not meet the quality criteria such as not having the correct working clearances or torque settings.

Criteria Ref.	Engine Build – Specific Skill Criteria		
EBS1	Check that all preparation activities to support the prototype engine build development programme have been carried out correctly.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have checked that all preparation activities to support the prototype engine build development programme have been carried out correctly.	Demonstrate where they have checked that all preparation activities to support the prototype engine build development programme have been carried out correctly.	Demonstrate where they have developed proposals to make improvements to internal processes and procedures to ensure preparation actives have been carried out correctly e.g. improvement to the visual management system, manual or computerised check sheets or sign off process.
EBS2	Ensure that the specified components are available for the build and that they are in a usable condition.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have ensured that the specified components are available for the build and that they are in a usable condition.	Demonstrate where they have ensured that the specified components are available for the build and that they are in a usable condition.	Demonstrate where they have developed proposals to improve either the internal processes used to ensure all components are available at the right time or supplier performance.
EBS3	Lead the build of the prototype/ development engine ensuring it has been built to the correct specification and is ready for testing.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the build of the prototype/ development engine ensuring it has been built to the correct specification and is ready for testing.	Demonstrate where they have led the build of the prototype/ development engine ensuring it has been built to the correct specification and is ready for testing.	Demonstrate where they have led multiple concurrent build projects to ensure the engine has been built to the correct specification.

Annex B - Grading Descriptors - Assessment Method 2 - Occupational Competence Discussion

Criteria Ref.	Core Knowledge Criteria		
CK1	The statutory and organisation health and safety policies, procedures and regulations that must be adhered to in a propulsion environment.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the applicable statutory and organisation health and safety policies, procedures and regulations that must be adhered to in their immediate work area.	Describe the applicable statutory and organisation health and safety policies, procedures and regulations that must be adhered to in their immediate work area.	Explain the purpose and content of three relevant health and safety policies, procedures and regulations and the process to be followed for updating and amending. For example the evidence could include reference to why the policy/procedure is required, what is it for/scope, who is it aimed at/recipient, individual roles and responsibilities for monitoring, review and amending.
CK3	How to communicate effectively, listen, question, support and mentor others.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the key principles of effective communication and listening skills. Describe the different types of questions that can be used and their application. Describe the key principles of effective mentoring.	Describe the key principles of effective communication and listening skills. Describe the different types of questions that can be used and their application. Describe the key principles of effective mentoring.	Explain the importance that body language plays when communicating, listening and mentoring and the implications if poor practice is demonstrated. Explain the key differences between mentoring and coaching.
CK5	The principles and purpose of quality auditing.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the principles and purpose of quality auditing and their role in the process and their role in the process.	Describe the principles and purpose of effective quality auditing and their role in the process.	Explain the benefits of gaining ISO accreditation and which accreditations are applicable to their work area. Explain the purpose and structure the organisations Quality Management System (QMS).

CK6	The core engineering principles such as mathematics, science, mechanical and electrical/electronic applications relevant to their specialism.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to use mathematical, scientific, mechanical, electrical/electronic principles relevant to their role in order to make logical informed decisions.	Show that they understand how to use mathematical, scientific, mechanical, electrical/electronic principles relevant to their role in order to make logical informed decisions.	Show that they understand how to use mathematical, scientific, mechanical, electrical/electronic principles relevant to their role, in order to solve challenging or complex issues/problems. For example the evidence could include reference to emission flow measurements, C02 tracer calculations, power or torque outputs, limits and fits for components, stress in components leading to failure, electrical vehicle battery principles and energy consumption calculations.
CK8	How to prioritise their own and their/team's workload to ensure that targets are met and to ensure effective use of resource/equipment.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe how they prioritise their own and their team's workload to ensure effective use of resource/equipment to meet targets.	Describe how they prioritise their own and their team's workload to ensure effective use of resource/equipment to meet targets.	Explain, the criteria/metrics and planning/scheduling tools that are used to ensure that targets are met to ensure effective use of resource/equipment.
CK10	The principles and application of Measurement Systems Analysis methods and techniques.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to use basic operating principles and application of Measurement Systems Analysis methods and techniques and the documentation used.	Show that they understand how to use basic operating principles and application of Measurement Systems Analysis methods and techniques and the documentation used.	Show that they understand how to apply the principles of Measurement Systems Analysis with reference to: **Location** (Average Measurement Value vs. Actual Value) with reference to stability, bias and linearity and **Variation** (Spread of Measurement Values - Precision) with reference to repeatability and reproducibility.
CK11	How to analyse and interpret first line data accurately in order to, validate quality, draw conclusions, provide recommendations and communicate with others in a recognised format.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to analyse and interpret first line data accurately in order to, validate quality, draw conclusions, provide recommendations and communicate with others in a recognised format.	Show that they understand how to analyse and interpret first line data accurately in order to, validate quality, draw conclusions, provide recommendations and communicate with others in a recognised format.	Show that they understand how to analyse and interpret first line data sets for different specifications of propulsion units using computational or qualitative methods with appropriate graphical representations.

CK12	The use, benefits and applications of continuous improvement techniques and methods for engineering (such as Kaizen and Six Sigma).		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the use, benefits and applications of continuous improvement techniques and methods (such as Kaizen and Six Sigma).	Describe the use, benefits and applications of continuous improvement techniques and methods (such as Kaizen and Six Sigma).	Explain the specific continuous improvement techniques and methods that are used in the work area and the improvements that have been achieved and their impact.
CK13	The importance for organisations to manage and monitor supplier performance ensuring that cost, service, quality and sustainability objectives are being achieved and their responsibilities in that process.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the importance for organisations to manage and monitor supplier performance ensuring that cost, service, quality and sustainability objectives are being achieved and their responsibilities in that process.	Describe the importance for organisations to manage and monitor supplier performance ensuring that cost, service, quality and sustainability objectives are being achieved and their responsibilities in that process.	Explain the benefits of undertaking benchmarking activities to establish baselines, define best practices, identify improvement opportunities and create a competitive environment.
CK14	How to produce accurate, effective and concise plans, presentations and analysis of graphs/charts, process and lessons learnt documents.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to produce accurate, effective and concise plans, presentations and analysis of graphs/charts, process and lessons learnt documents.	Show that they understand how to produce accurate, effective and concise plans, presentations and analysis of graphs/charts, process and lessons learnt documents.	Explain the importance of providing quality and accurate information to support the development process and the implications on the development programme if this is not achieved.
Criteria Ref.	**Core Skills Criteria**		
CS1	Manage risk and the application of Health and Safety within their area of responsibility.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate how they manage risk and the application of Health and Safety within their area of responsibility.	Demonstrate how they manage risk and the application of Health and Safety within their area of responsibility.	Demonstrate where they have developed proposals to make improvements to health and safety within their area of responsibility.

CS2	Communicate effectively, listen, question, support and mentor others, whilst promoting an attention to detail throughout the propulsion development process.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have communicated effectively, listened, questioned, supported and mentored a team member, whilst promoting an attention to detail throughout the propulsion development process.	Demonstrate where they have communicated effectively, listened, questioned, supported and mentored a team member, whilst promoting an attention to detail throughout the propulsion development process.	Show how mentoring has improved individual performance and how this was defined and measured.
CS4	Demonstrate critical and analytical reasoning, robust planning and task co-ordination		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have applied critical and analytical reasoning, robust planning and task co-ordination.	Demonstrate where they have applied critical and analytical reasoning, robust planning and task co-ordination.	Demonstrate where they have used critical and analytical reasoning or robust planning to make proposals to improve task co-ordination in their work area.
CS10	Implement proposals for test or build plan modifications based on quality and quantitative data.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have implemented proposals for test or build plan modifications based on quality and quantitative data.	Demonstrate where they have implemented proposals for test or build plan modifications based on quality and quantitative data.	Demonstrate where they have led the implementation of test or build plan proposals.
CS11	Prioritise test or build output to maximise efficient use of specialist equipment.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have prioritised test or build output to maximise efficient use of specialist equipment.	Demonstrate where they have prioritised test or build output to maximise efficient use of specialist equipment.	Demonstrate where they have had to have interface with the management team to resolve issues around work prioritisation and use of equipment.

CS12	Manage all internal and external customer needs throughout test or build execution.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have managed internal and external customer needs throughout test or build execution.	Demonstrate where they have managed internal and external customer needs throughout test or build execution.	Provide an example of where they have exceeded customer expectations. For example the evidence could make reference to delivering ahead of schedule or finding solution to a problem.
CS13	Develop procedures and processes necessary to meet all relevant standards and requirements, i.e. legal & code of practice.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have developed procedures and processes necessary to meet all relevant standards and requirements, i.e. legal & code of practice.	Demonstrate where they have developed procedures and processes necessary to meet all relevant standards and requirements, i.e. legal & code of practice.	Demonstrate where they have developed proposals to make improvements to procedures and processes necessary to meet all relevant standards and requirements, i.e. legal & code of practice and the impact this has had.
CS14	Guide and develop other team members.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have guided and developed other team members.	Demonstrate where they have guided and developed other team members.	Demonstrate with auditable evidence that they know how the development has impacted on team members and improved performance. For example the evidence could include reference to update skills matrices, improved delivery schedules or improvements in quality.
CS15	Create internal test or build instructions and process documents.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have created internal test or build instructions and process documents.	Demonstrate where they have created internal test or build instructions and process documents.	Demonstrate where they have developed proposals to make improvements to internal test or build instructions and process documents and the impact this has had.

CS16	Support the development of proposals to develop new/alternative technologies.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have supported the development of proposals to develop new/alternative technologies.	Demonstrate where they have supported the development of proposals to develop new/alternative technologies.	Demonstrate where they have led or made a significate contribution to the development of proposals to develop new/alternative technologies.
Criteria Ref.	**Core Behaviours Criteria**		
CB1	Personal Responsibility & Compliance.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have complied with statutory and organisational health & safety regulations and policies. Accepted responsibility for their work load with a responsible approach to risk. Continually shown a high level of motivation and resilience when facing challenges.	Demonstrate where they have complied with statutory and organisational health & safety regulations and policies. Accepted responsibility for their work load with a responsible approach to risk. Continually shown a high level of motivation and resilience when facing challenges.	Demonstrate where they have met **one** of the following: 1) challenged others on poor behaviour; 2) provided encouragement in order to keep others motivated when facing challenges.
CB2	Working Effectively in Teams.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have created and maintained positive, professional and trusting working relationships with the team and a wide range of internal, external and connected stakeholders. Maintained the highest standards of integrity and ethics in all business relationships.	Demonstrate where they have created and maintained positive, professional and trusting working relationships with the team and a wide range of internal, external and connected stakeholders. Maintained the highest standards of integrity and ethics in all business relationships.	Demonstrate where they have developed proposals to make improvements that have had a positive impact on the team and/or customer relationships.
CB3	Effective Communication & Interpersonal Skills.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have maintained effective partnerships with suppliers and customers through the company processes to achieve sound objectives, open, honest and clear communication using appropriate methods, always with a positive and respectful attitude.	Demonstrate where they have maintained effective partnerships with suppliers and customers through the company processes to achieve sound objectives, open, honest and clear communication using appropriate methods, always with a positive and respectful attitude.	Demonstrate that they have proactively shared information, openly & honestly at all times, is able to tailor their approach to different audiences and in different formats and frequently goes out of way to represent the business positively and professionally.

CB4	**Quality & Problem Solving.**		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have shown a strong desire to ensure that the root cause of a problem is identified and addressed, they continually seek opportunities to improve quality, speed and efficiency whilst also demonstrating technical leadership.	Demonstrate where they have shown a strong desire to ensure that the root cause of a problem is identified and addressed, they continually seek opportunities to improve quality, speed and efficiency whilst also demonstrating technical leadership.	Demonstrate that having found the root cause of a problem they have recommended a solution that has made an improvement to the testing or build process or data obtained.
CB5	**Continuous Personal Development.**		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have rreflected on their skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and had a positive attitude to feedback and advice.	Demonstrate where they have reflected on their skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and had a positive attitude to feedback and advice.	Demonstrate that they have proactively researched how to engage with a relevant Professional Engineering Institution in order to gain professional recognition at the appropriate level, such as Engineering Technician (EngTech) and understand the requirements and benefits of gaining professional recognition.
Criteria Ref.	**Propulsion Test – Specific Knowledge Criteria**		
PTK2	The principles of how to create and edit test scripts to ensure data obtained is valid and reliable.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to create and edit test scripts to ensure data obtained is valid and reliable.	Show that they understand how to create and edit test scripts to ensure data obtained is valid and reliable.	Show that they understand the principles that need to be embedded to ensure the quality and validity of data captured including knowing how to locate and identify the organisations governance, policies and procedures relating to test script data.

PTK5	How to run and operate propulsion testing equipment effectively to ensure quality and consistent outcomes including understanding limits of adjustment and parameters for safe running and standardisation.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to run and operate propulsion testing equipment effectively to ensure quality and consistent outcomes including understanding limits of adjustment and parameters for safe running and standardisation.	Show that they understand how to run and operate propulsion testing equipment effectively to ensure quality and consistent outcomes including understanding limits of adjustment and parameters for safe running and standardisation.	Show that they have the depth of knowledge to develop others to run and operate propulsion testing equipment effectively to ensure quality and consistent outcomes including understanding limits of adjustment and parameters for safe running and standardisation.
PTK6	The different types and purpose of the tests that can be carried out on propulsion units/systems being developed such as performance, emissions, climatic, noise, vibration, durability, mechanical, electrical and calibration.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Describe the different types and purpose of the tests that can be carried out on propulsion units/systems being developed such as performance, emissions, climatic, noise, vibration, durability, mechanical, electrical and calibration.	Describe the different types and purpose of the tests that can be carried out on propulsion units/systems being developed such as performance, emissions, climatic, noise, vibration, durability, mechanical, electrical and calibration.	Provide an overview of the different regulations that must be met (national and international where applicable) in order to meet compliance standards.
Criteria Ref.	**Propulsion Test – Specific Skills Criteria**		
PTS4	Ensure the servicing schedules and maintenance of propulsion testing equipment is carried out in line with manufacturer instructions and/or company standard operating procedures.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have ensured that the servicing schedules and maintenance of propulsion testing equipment is carried out in line with manufacturer instructions and/or company standard operating procedures.	Demonstrate where they have ensured that the servicing schedules and maintenance of propulsion testing equipment is carried out in line with manufacturer instructions and/or company standard operating procedures.	Demonstrate where they have put in place proposals to improve equipment maintenance and/or equipment downtime.

PTS5	Lead the diagnosis and analysis of any faults found on propulsion units under test.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the diagnosis and analysis of any faults found on propulsion units under test.	Demonstrate where they have led the diagnosis and analysis of any faults found on propulsion units under test.	Demonstrate how they have contributed to finding solutions to the faults found on propulsion units under test.
Criteria Ref.	**Engine Build – Specific Knowledge Criteria**		
EBK3	The different fault diagnostic methods used, their application and selection.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the different fault diagnostic methods used, their application and selection.	Show that they understand the different fault diagnostic methods used, their application and selection.	Explain the criteria and process used to select the correct fault diagnostic method and the implications on the development programme if the diagnostic method used is not the appropriate method to determine the fault identified.
EBK4	The methodologies used for part and product quality investigations.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand the methodologies used for part and product quality investigations.	Show that they understand the methodologies used for part and product quality investigations.	Explain the criteria and process used to determine the correct methodology to be used when undertaking a product/part quality investigation and the implications on the development programme if the appropriate methodology is not used.
EBK5	How to validate tooling and build deviations and associated equipment and instrumentation.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Show that they understand how to validate tooling and build deviations and associated equipment and instrumentation.	Show that they understand how to validate tooling and build deviations and associated equipment and instrumentation.	Explain the importance of undertaking the validation process correctly and the implications on the development programme if the validation process is not carried out to the requited specification.

Criteria Ref.	Engine Build – Specific Skill Criteria		
EBS4	Lead the diagnosis and analysis of any faults identified during the development engine build.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led the diagnosis and analysis of any faults identified during the development engine build.	Demonstrate where they have led the diagnosis and analysis of any faults identified during the development engine build.	Demonstrate how they have contributed to finding solutions to the faults found on development engine build that lead to modifications being implemented.
EBS5	Lead and support modification activities to improve engine build reliability and performance.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led and supported a modification activity to improve engine build reliability and performance.	Demonstrate where they have led and supported a modification activity to improve engine build reliability and performance.	Demonstrate where they have led and supported modification activities on multiple concurrent build projects.
EBS6	Lead the validation process for tooling and build deviations and associated equipment/instrumentation.		
Grade	**Fail - The apprentice is unable to**	**Pass - The apprentice can**	**Distinction - In addition to meeting the Pass criteria the apprentice can**
	Demonstrate where they have led a validation process for tooling and build deviations and associated equipment/instrumentation.	Demonstrate where they have led a validation process for tooling and build deviations and associated equipment/instrumentation.	Demonstrate where they have led the validation process for tooling and build deviation and associated equipment/instrumentation on multiple concurrent build projects.

Annex B – Assessment Methods 1 and 2 - Requirements for a Distinction Grade

Assessment Method.	**Distinction Grade Requirements**. The apprentice must be awarded, as a minimum, the following number of distinctions in **both** assessment methods to be awarded an overall distinction for the apprenticeship.
Assessment Method 1 – Case Study Project (Presentation and Report)	**Core Knowledge Skills and Behaviours** Knowledge – 4 out of 6 Skills – 3 out of 5 Behaviours – 1 out of 1 **Role Specific Knowledge Skills and Behaviours** **Pathway Options (one option to be completed)** **Propulsion Test** Knowledge – 2 out of 3 Skills – 2 out of 3 **Engine Build** Knowledge – 2 out of 2 Skills – 2 out of 3
Assessment Method 2 – Occupational Competence Discussion	**Core Knowledge Skills and Behaviours** Knowledge – 6 out of 10 Skills – 6 out of 10 Behaviours – 3 out of 5 **Role Specific Knowledge Skills and Behaviours** **Pathway Options (one option to be completed)** **Propulsion Test** Knowledge – 2 out of 3 Skills – 2 out of 2 **Engine Build** Knowledge – 2 out of 3 Skills – 2 out of 3