



## **Employer Guidance**

# **Land-based Service Engineering Technician Level 3 Apprenticeship Standard**

## **ST0243/AP03**

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## Introduction

Employers have designed a new Apprenticeship Standard for technicians who service and repair machinery and equipment. This includes those in occupations involving land-based, agricultural, construction and plant, outdoor power equipment, and forestry or fixed plant machinery and equipment. The machinery and equipment within these occupations varies from:

Agricultural Equipment:

Tractors, machinery for cutting and mowing, harvesting and processing, soil preparation and plant establishment, and transport handling and storage.

Construction Plant Machinery:

Machinery for excavating and compacting, transporting and lifting, piling plant and equipment, drilling, blasting and pumps.

Technicians work in a large range of environments including dealerships that focus on specific brand(s) and independent companies that maintain and repair all makes of machinery.

It is anticipated around 750 apprentices will graduate from Level 3 Land-Based Engineering Apprenticeship Programmes every year. There are around 3,000 workshops managed by companies that range from multi-million pound trans-national dealer groups through to an owner-manager employing a handful of people.

In addition to the above complexities, there are several different training models, including residential block release programmes devised and operated by global land-based machinery manufacturers and day release courses provided by local colleges and training organisations.

Accountability for assessing the competence of the apprentice in the workplace will transfer from the training organisation to employers. Employers will have primary responsibility for monitoring and analysing the apprentice's progress and deciding when the apprentice is ready to take the End Point Assessment, with support from the training and assessment organisations.

All formal qualifications have been removed, however employers may ask their apprentice to complete a Level 3 Diploma in Land-based Technology during the course of the Apprenticeship Standard.

This document is to be used as a guide and will provide you with an overview of what is to be expected throughout the duration of the apprenticeship.

## Roles and Responsibilities

### Employer/ Mentor

- Will assist with workplace training and the collection of evidence for the eLogbook
- Will assess and pass judgement on progress throughout the Apprenticeship
- Will coordinate with the training organisation to confirm that all the requirements to proceed to End Point Assessment have been met

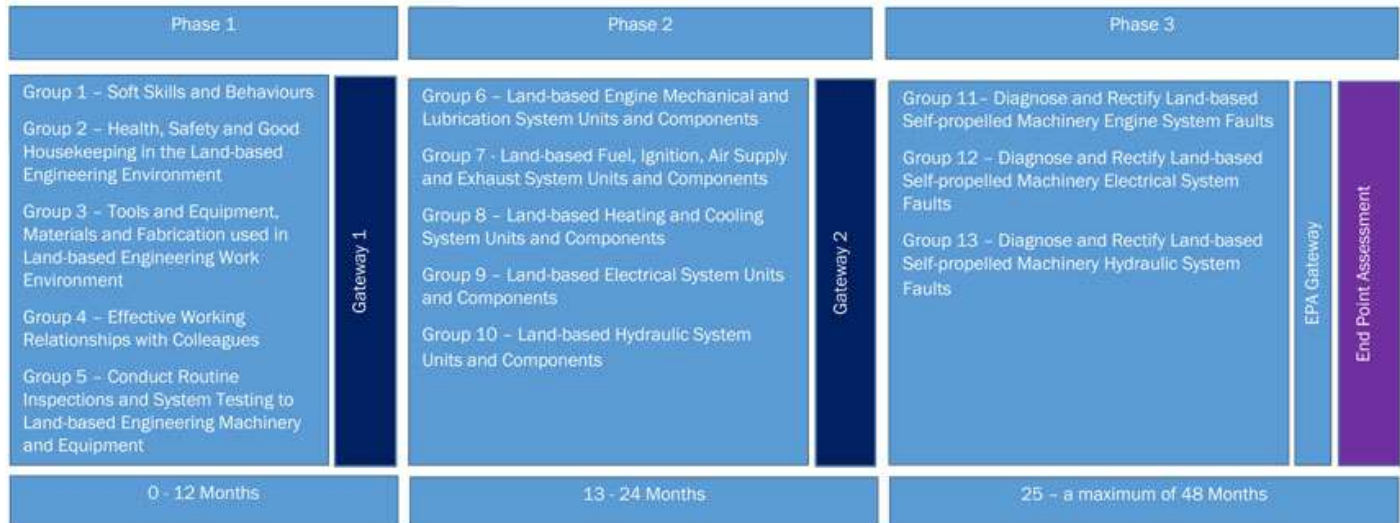
### Training Organisation

- Responsible for the coordination of the Apprenticeship with the employer, mentor and the IMI
- Will provide all of the required off-the-job training and assessment as outlined in the Apprenticeship Standard and allocate an assessor
- Will arrange for registration of the Apprenticeship and the End Point Assessment

### Assessment Organisation

- The IMI provides the training organisation with all the assessment documentation
- Will ensure that the assessment of the Apprenticeship meets the standard as set out by the governing body in charge of maintaining the Apprenticeship Standard
- Will oversee final End Point Assessment and have the final say on overall Apprenticeship result and grade

## Apprenticeship Structure



**Group 1** – This group sets out the soft skills and behaviours and provides the framework that will provide the basis for the approach to assessment.

**Group 2** – Mandatory Health and Safety, housekeeping and good practice within the land-based engineering environment.

**Group 3** – Working with tools and equipment safely and efficiently to achieve fabrication and basic maintenance tasks.

**Group 4** – Working with others and maintaining effective working relationships using appropriate communication and information sources.

**Group 5** – Complete a range of routine services and identify the difference between good and possibly faulty components.

**Group 6** – Identify the function and operation of land-based engine mechanical components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

**Group 7** – Identify the function and operation of land-based fuel, ignition, air and exhaust components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

**Group 8** – Identify the function and operation of land-based heating and cooling components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

**Group 9** – Identify the function and operation of land-based electrical components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.



**Group 10** – Identify the function and operation of land-based hydraulic components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

**Group 11** – Identify the function and operation of advanced land-based engine system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.

**Group 12** – Identify the function and operation of advanced land-based electrical system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.

**Group 13** – Identify the function and operation of advanced land-based hydraulic system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.

## eLogbook

The eLogbook is a tool that is provided by the IMI for the apprentice to record their workplace evidence as outlined in this document. It is their responsibility to upload this evidence and the responsibility of their workplace mentor and employer to confirm that this evidence is valid and authentic.

The types of evidence that can be uploaded include (but are not exclusive to):

- completed workplace job cards
- completed service schedules / inspection sheets
- written procedures
- technical drawings / images
- diagnostic readouts and reports
- machinery testing related data
- technical data specifications
- pictures
- video clips
- audio clips
- witness statements / testimonies

The IMI's eLogbook will ensure access to assessments and personal information is only available to be viewed by the appropriate parties.

Further tutorials and sample evidence can be found online within the eLogbook system in addition to the information provided within this document. The links for these tutorials will be provided on registration.





## Soft Skills and Behaviour Assessment

The soft skills and behaviour assessment is a tool that is provided by the IMI to score and assess the apprentice against the soft skills assessment criteria as outlined in Group 1.

This will enable the apprentice to collect key evidence to support their professional interview which will take place during the EPA.

Responsibilities for completion and review of this assessment are outlined in the “Roles and Responsibilities” section of this document.

## Phases and Gateways

**Phase** - A phase is the timeframe between the major assessment points or Gateways. The IMI have provided gateways to support and assess Apprentices to check their progress throughout the apprenticeship.

- Phase 1 – From Apprenticeship start to Gateway 1
- Phase 2 – From Gateway 1 to Gateway 2
- Phase 3 – From Gateway 2 to End Point Assessment

During these phases the apprentice will be required to keep a log of progression throughout to evidence their journey. This will be reviewed and assessed by the workplace mentor and training organisation before the EPA Gateway can be taken.

**Gateways** There are three gateways within this Apprenticeship Standard:

- Gateway 1 – Following completion of phase 1
- Gateway 2 – Following completion of phase 2
- EPA Gateway – Eligibility check to enable the apprentice to enter EPA

Assessments will be carried out on knowledge, skills and behaviour and soft skills as delivered by the training organisation during the prior phase.

## Gateway Skills and Knowledge Tests

At each of the gateways specified earlier in this document, the apprentice undertakes set assessments to ensure competence and readiness to progress onto the next phase.

The skills assessments will be carried out at either the training organisation or in the workplace (if previously agreed).

### Skills Assessment Specification:

Gateway 1 Skills Tests	Gateway 2 Skills Tests
Conduct a routine pre- or post-delivery inspection Engineering assessment task: <ol style="list-style-type: none"> <li>make a 'P' clip for a hydraulic pipe</li> <li>thread a blind hole in a metal bar</li> <li>remove a 'snapped' bolt from a metal bar</li> </ol>	Carry out one rectification task to each machine system: <ol style="list-style-type: none"> <li>engine system (either: cooling, fuel, lubrication or exhaust)</li> <li>electrical system (either: starting, charging, auxiliary)</li> <li>hydraulic system</li> </ol>

### Online test specification for Gateways:

Test reference	Test description	Number of questions	Duration	Pass mark	Merit	Distinction
ST0243-LBTGW1K	Gateway 1 Knowledge Assessment (covering groups 2-5)	40	60 minutes	65%	75%	90%
ST0243-LBTGW2K	Gateway 2 Knowledge Assessment (covering groups 6-10)	40	60 minutes	65%	75%	90%

\*NOTE: Group 1 Soft Skills and Behaviours will not form part of the Gateway knowledge assessments. It is recommended that reviews take place between the apprentice, training provider and mentor at Gateways, using a soft skills and behaviour assessment tool to ensure the requirements are met.



## EPA Gateway Requirements

Once an employer is satisfied that the apprentice has demonstrated full competence and that all criteria of the Standard have been met, the apprentice can progress to the End Point Assessment via the apprenticeship gateway, which is a decision point.

Before an apprentice can pass through the gateway (decision point) for End Point Assessment, they must have achieved:

- English and Maths at GCSE Grade C/Grade 4 or above, or Functional Skills Level 2
- A log of progression
- A formal Gateway meeting between the apprentice and the employer to determine the apprentice's readiness for End Point Assessment

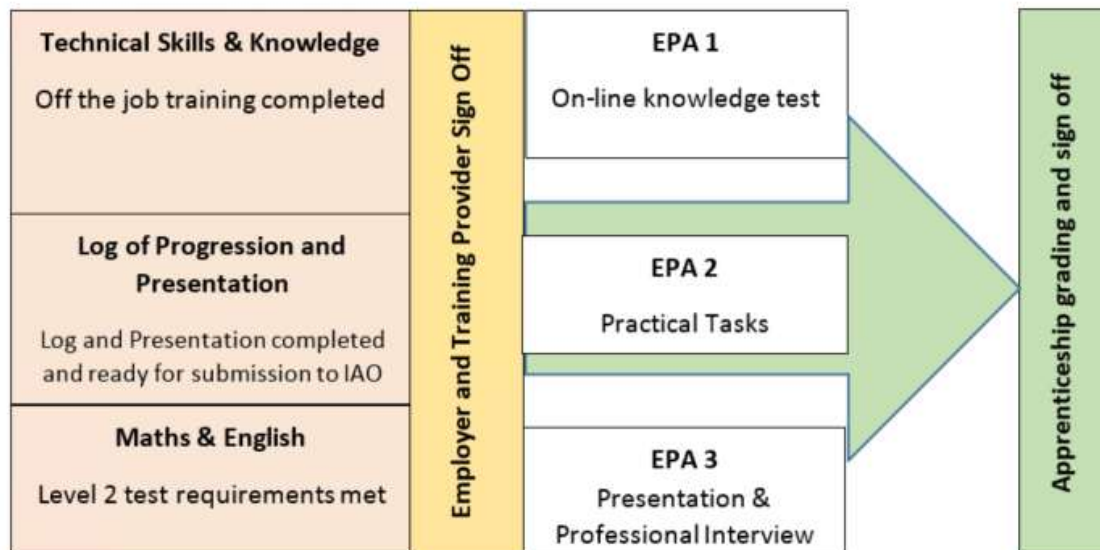
## End Point Assessment (EPA)

The EPA consists of the following three distinct elements which are equally weighted and to be completed in the sequence below.

1. Online Knowledge Test
2. Practical Tasks
3. Professional Interview

All three elements of the assessment are to be undertaken within six months of the achievement of the gateway within the apprenticeship. A minimum of a 'pass' is to be achieved before progressing to the next element of the EPA.

### The Gateway to Assessment



The End Point skills assessment and professional interview will be directly observed by an Independent Assessor provided by the IMI.

The overall grading will be overseen and assigned by the IMI.

## Online Knowledge Test

The online knowledge test takes the form of one invigilated online test. This test will include questions from each land-based machinery system group that has been taught during each phase. The test consists of:

- Six multiple choice questions – each question offers a choice of four responses with only one answer being correct
- Twelve short answer questions – each question requires a short written response at the same level of difficulty
- Twelve structured answer questions – each question requires a short written response that has two levels of difficulty

The online knowledge test is a test each apprentice has to undertake and comprises the following:

Test reference	Test description	Number of questions	Duration	Pass mark	Merit	Distinction
STO243/03EPA1K	Knowledge End Point Assessment	30	90 minutes	65%	75%	90%
Note: The online test covers content from Groups 2-13 under the topics of:						
Health, Safety and legislation						
Tools and Equipment						
Information, Reporting and Communication						
Inspection and Maintenance						
Fault Diagnosis and Repair						
Fabrication and Repair						
Preparation and Handover						

In the **Centres** section of the IMI's website [www.theimi.org.uk](http://www.theimi.org.uk) you will find an **online assessment section**. This section provides a demonstration test for an apprentice. They will require a password from an assessor to be able to try this demonstration test.



## Practical Tasks

The practical tasks (skills assessments) will be carried out at either the training organisation premises or in the workplace by an approved Independent Assessor allocated by the IMI.

There are three practical task observations that must be completed during the practical task section of the EPA.

**Mandatory Observation A:** requires the apprentice to demonstrate their competence in carrying out a technical condition inspection on a self-propelled machine and to report their findings; this activity will last 105 minutes.

**Selected Observation B:** the two remaining observations will be selected by the IMI from two of the following:

- a. Engine systems
- b. Electrical systems
- c. Hydraulic systems

Both observations will last up to 105 minutes each and will require the apprentice to demonstrate competence in either inspection, maintenance and repair or diagnosis of engine, electrical or hydraulic systems.

The apprentice will also be required to answer 'standardised' questions relating to both observations selected which will be asked and recorded by the EPA further demonstrating the apprentice's underpinning knowledge of the task completed.

## Presentation

The apprentice is required to deliver a presentation for up to a maximum of 15 minutes related to the industry sector they work within. The presentation is to be based on achieving the optimum performance from a machine of their choice and may encompass the machine's working principles, analysis of factors influencing performance and how to achieve verification of performance.

The apprentice will be required to deliver the presentation immediately before the professional interview takes place and they may choose to deliver the presentation with or without the aid of PowerPoint or a flip chart.



## Professional Interview

The structured professional interview is based around the contents of the apprentice's 'log of progression' and presentation which takes place between the apprentice and the Independent Assessor. It is essential therefore that arrangements are made to ensure that the log of progression is made available to the IMI at least two weeks prior to the professional interview EPA.

Wherever possible the Independent Assessor will be the same person who conducted the observations.

The Independent Assessor will ask the apprentice questions in relation to:

- presentation
- behaviours
- the period of learning, development and continuous assessment (log of progression)
- coverage of the standard
- personal development and reflection
- continuous professional development
- customer interaction

The apprentice will be informed of the requirements prior to the interview, and will refer to any relevant workplace evidence as requested by the Independent Assessor, which must be provided at least 10 days in advance. Detailed assessment documentation will be provided by the training organisation on registration of the apprentice.

## End Point Assessment Grading

This Apprenticeship Standard is graded: Fail / Pass / Merit / Distinction.

Independent Assessors will review the results of the following assessment types and issue a grade according to the scores highlighted in the table below.

Individual EPA element grade achieved	Points awarded
Pass	1
Merit	2
Distinction	3
Apprenticeship Grading	Final grading points
Pass	3-5
Merit	6-7
Distinction	8-9

### Final grading score boundaries:

Examples of final grading calculation:

Online Knowledge Test	Practical Tasks	Professional Interview	Total Points	Final Grading
Pass = 1	Pass = 1	Merit = 2	4	Pass
Distinction = 3	Merit = 2	Pass = 1	6	Merit
Distinction = 3	Distinction = 3	Merit = 2	8	Distinction