Rail Infrastructure Operator Apprenticeship Standard (Level 2)

End Point Assessment Plan

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1. Introduction

Rail Infrastructure Operators support and regulate the safe operation of the Rail network through the use of: signalling control systems, electrical control systems, and responding to incidents, where the operational integrity of the UK rail transport network is affected.

Rail Infrastructure Operators may work in a small control location, a major operations control room or be required to go on track.

This apprenticeship adopts a core and options approach to allow flexibility for employers and enable transferability between roles and employers for apprentices. The core content includes safety, quality and customer service, the apprentice will then follow one of the following specialist pathways: Signalling Operator, Electrical Controller or Incident Responder.

2. Rail Infrastructure Operator Apprenticeship Standard
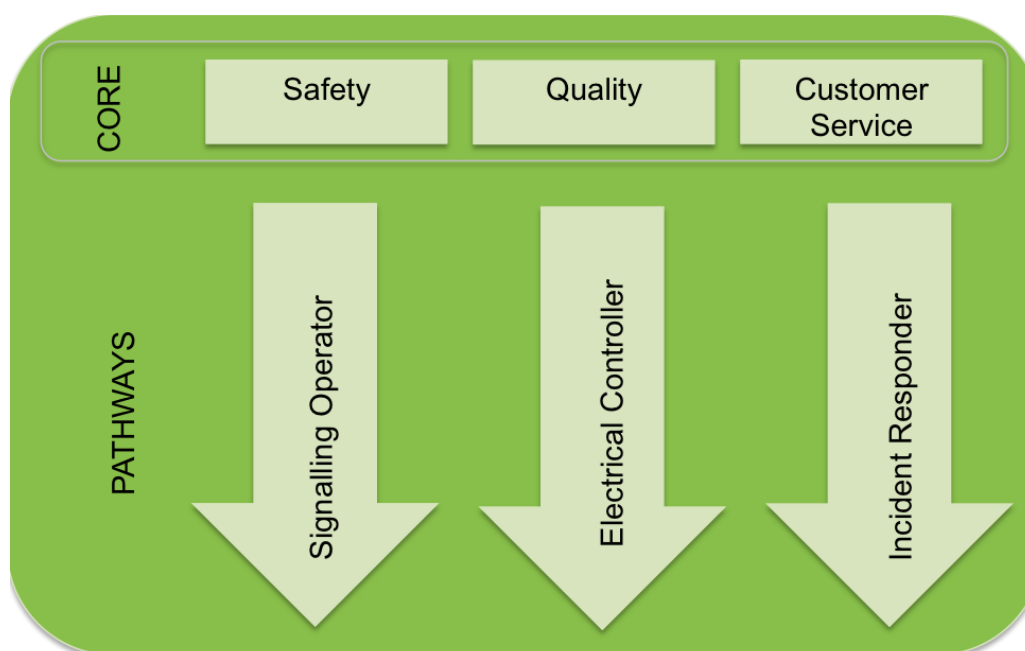
Signalling Operators are responsible for the movement of rail transport through the safe operation of signalling control systems. Signalling Operators regulate the safe movement and control of rail transport and communicate to rail transport drivers, those working on rail infrastructure as well as members of the public, to enable them to move or work safely across the network.

Electrical Controllers are responsible for maintaining and controlling the electrical supply to the rail network to ensure the smooth operation of passenger services, safe access to the rail network for maintenance and incident response. Electrical supply is required for signalling, traction and other assets, such as tunnel ventilation systems.

Incident Responders are responsible for making the rail infrastructure safe and minimising service disruptions following an incident or event, this can range from low level situations (e.g. level crossing failure and animals on the line) through to major events (e.g. derailment, fatalities and fire). An Incident Responder will either take direct action on site making the site safe and working with specialists to effect repairs for example, or work off site mobilising response staff and working with other industry stakeholders in order to return back to safe operations and minimise service disruptions. During non-response time Incident Responders will assist colleagues with monitoring the network to identify potential issues and/or incident avoidance activities e.g. weather preparedness, checking of fences and gates or inspecting operational locations.

As a safety critical sector all activities must comply with The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS), which came into force in 2006. ROGS provide the regulatory regime for rail safety, including the mainline railway, underground and metro railways, light rail, tramways, and heritage railways. ROGS set out the requirements for people undertaking safety critical work, which include Signal Operators, Electrical Controllers and Incident Responders. The requirements specifically reference the arrangements for managing competence. Therefore, the apprenticeship standard, to which this assessment plan refers, has been designed to comply with those competence requirements.

3. Assessment Overview

The assessment plan for Rail Infrastructure Operations has been developed to ensure the apprentice has the knowledge, skills and behaviours required to be competent in carrying out their role to a level that will be recognised by all employers. The assessment plan covers the following three occupational pathways: Signalling Operators, Electrical Controllers and Incident Responders.

This plan outlines the end-point assessment that apprentices must successfully complete to achieve their apprenticeship. The apprenticeship should be at least 12 months in duration, followed by the end-point assessment, which will take between 1-2 months. Apprentices will be awarded a pass or fail based on their competency.

4. End Point Assessment Gateway
A formal review between the employer, apprentice and the training provider will take place at the Employer Gateway stage. During the formal review employers must satisfy themselves that the apprentice is ready for the end point assessment. The portfolio of work will be reviewed to ensure there is sufficient evidence in the portfolio to allow the apprentice to consistently demonstrate relevant knowledge, skills and behaviours as described in the standard.
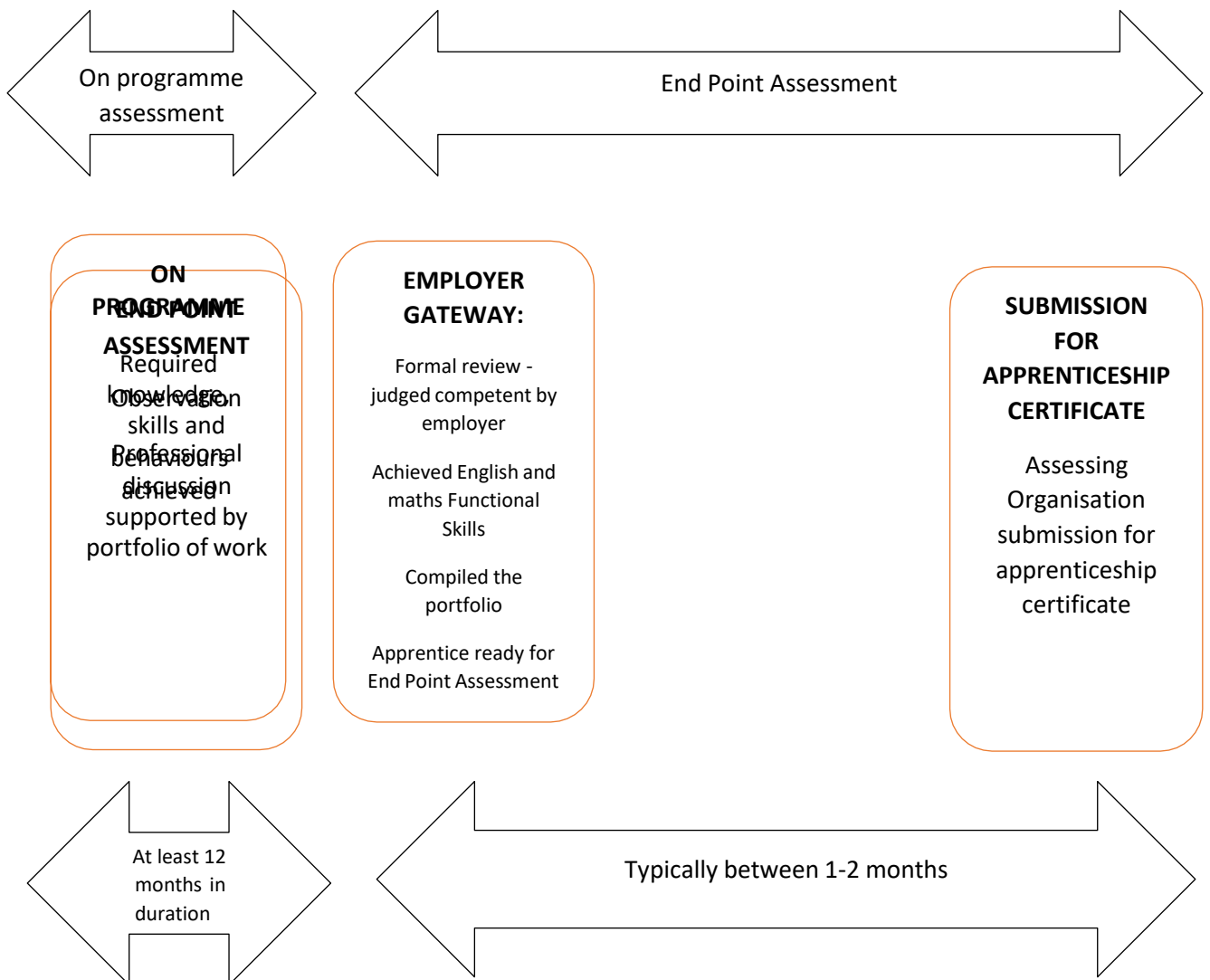
The apprentice will need to have achieved level 1 English and maths and taken the test for level 2 prior to taking their end point assessment.

5. End Point Assessment

An independent assessment organisation that is registered on the Education and Skills Funding Agency Register of Apprentice Assessment Organisations must undertake end point assessment. The selected organisation will be responsible for coordinating and carrying out the end point assessment. Assessment organisations must appoint appropriately qualified and experienced assessors – termed 'subject matter experts' to conduct the end-point assessment, as defined in this plan. Subject matter experts involved in the end point assessment must not have had direct involvement with the apprentice as their mentor, coach, direct trainer or direct supervisor/line manager.

Successful achievement of the end-point assessment will lead to final certification of the apprenticeship and will demonstrate that the apprentice is a fully competent Rail Infrastructure Operator in their occupational job role.

The following summarises the assessment process

On programme assessment ⇔

⇔ End Point Assessment ⇒

ON PROGRAMME
Required knowledge, skills and behaviours achieved supported by portfolio of work

END POINT ASSESSMENT
Observation and Professional discussion

EMPLOYER GATEWAY:

Formal review - judged competent by employer

Achieved English and maths Functional Skills

Compiled the portfolio

Apprentice ready for End Point Assessment

SUBMISSION FOR APPRENTICESHIP CERTIFICATE

Assessing Organisation submission for apprenticeship certificate

⇔ At least 12 months in duration

⇔ Typically between 1-2 months ⇒

Methods of Assessment

The end point assessment uses the following assessment tools and should be undertaken in the order shown.

Assessment Method	Area Assessed	Assessed By	Grading
Observation	Apprentices will be observed on planned, un-planned and emergency working. The subject matter expert will ask questions about the actions and choices the apprentice has made.	Independent Assessment Organisation	Pass or Fail
Professional Discussion supported by Portfolio of Work	The professional discussion is a structured discussion between the apprentice and the subject matter expert covering a range of knowledge, skills and behaviours	Independent Assessment Organisation	Pass or Fail

Observation Requirements

The observation will be managed and assessed by an independent subject matter expert appointed by the independent assessment organisation. The observation will be arranged no less than seven days before the observation-taking place.

➢ The observation will cover at least one activity from each category of planned, un-planned and emergency working, for the specific pathway the apprentice is working towards. See Annex A.

➢ Planned activities will be observed in real life in the apprentices normal place of work provided the activities scheduled satisfy the assessor the apprentice has the full opportunity to demonstrate competency in the role. (See Annex A). Where such opportunity does not naturally occur simulation is permitted.

➢ Simulation will always be used for un-planned and emergency activities; this is due to the nature of these activities being unpredictable.

➢ The total observation time must provide consistent opportunity for all apprentices. Whether simulated or not, we expect total observation will take two hours and it is for the subject matter expert responsible to ensure the apprentice has had opportunity to demonstrate all of the knowledge, skills and behaviours being tested.

The observation assessment will assess all of the following areas of the standard:

Core Knowledge

➢ The general operating principles required to support the operation of rail transport infrastructure and vehicles, including the network as a system, different roles and responsibilities and underpinning processes including normal and contingency planning processes.

Specific Knowledge Signalling Operator

➢ Knowledge of railway operating and signalling principles to underpin the safe operation of signalling systems.
➢ A good understanding of industry agreed rules and regulations for signalling operations.
➢ Understand how to monitor and operate signalling equipment in order to deliver a safe and efficient UK rail transport network, in normal, degraded and emergency situations.
➢ Knowledge of information systems used to support signalling activities including timetables and route contingencies.

Specific Skills – Signalling Operator

➢ Operate a safe working environment for normal operating activities taking place on the infrastructure, including the management of vehicle movements, network interfaces and supporting testing to restore operational activities to normal after interruption.
➢ Provide access to those working on the rail infrastructure as well as members of the public to enable them to move or work safely across the rail network e.g. authorising users at level crossings.
➢ Be able to operate and control signalling equipment in unplanned and emergency situations e.g. accident, reported fatality on the network, working with stakeholders to facilitate a return to normal working e.g. facilitating access for Incident Responders and other specialists.
➢ Report infrastructure and train-running incidents to the controller e.g. making the area safe, fault reporting and cautioning trains, to minimise the impact on the rail transport network.

Specific Knowledge – Electrical Controller

➢ Understand basic electrical principles and the electrical distribution arrangements including knowledge of faults to underpin the safe operation of electrical systems.
➢ Have a good understanding of rail and electrical industry agreed rules and regulations for the safe operation of electric control.
➢ In line with operating procedures, know how to operate electrical control systems and respond to a wide range of alarms associated with safe working and operation of the electrical infrastructure.
➢ Understand how to monitor and operate electrification equipment in order to deliver a safe and efficient UK rail transport network, in normal, degraded and emergency situations.

Specific Skills – Electrical Controller

➢ Be able to monitor the electrical supervisory systems, in order to manage electrical supplies to traction and non-traction equipment.
➢ Operate electrical control systems and respond to a wide range of alarms associated with safe working and operation of the electrical infrastructure.
➢ Recognise and respond to situations requiring an emergency switch off of the electricity supply or electrification infrastructure e.g. fires and persons in contact with the electrical system and manage subsequent re-energisation.
➢ Check and implement planned isolations of the electrical infrastructure in order to facilitate work on the network including third party isolations from the national supply system and completion of associated processes to ensure the isolation is safe.

Specific Knowledge – Incident Responder

➢ Understand the type of incidents and events, which can occur on a railway and the appropriate emergency procedures for making the network safe.
➢ Understand the roles and responsibilities of the rail industry and emergency services command structures and how they would operate in rail incidents and emergencies.
➢ Understand the role of internal and external specialists, such as British Transport Police, emergency services and maintenance staff and when and how they should be brought in to respond to an incident or event.
➢ Understand how to contact and communicate effectively with colleagues and specialists to coordinate activities in order to return to normal operations or implement safe but degraded operations where this cannot be achieved.
➢ Know how to document evidence and initiate an investigation into the cause of an incident e.g. fatality.

Specific Skills – Incident Responder

➢ Work with others to identify, respond to and manage incidents on the rail network, either on site or from a control room. E.g. Incident Responders will coordinate with electrical controllers and signalling operators to ensure safe access to the incident site.
➢ Be able to take control of an incident, identify the correct type of response and implement a prioritised plan e.g. applying and removing a temporary and emergency speed restriction, removal of objects from overhead line. This may be either as an initial responder to a major event or taking control of a local railway specific event such as animals on the line, level crossing failures and trespassers.
➢ Ensure the correct protection measures have been taken to make an incident safe for those directly impacted e.g. colleagues, passengers, emergency services.
➢ Facilitate investigation and recovery activities such as preserving evidence; initiating an investigation.
➢ Follow a defined set of procedures which outline the basic response to an incident, such as arrive on site, assess, make safe, report and liaise with others as necessary.

During the observation the subject matter expert will ask questions about the actions the apprentice has taken and the choices they made to complete the tasks to assess

knowledge and understanding; assessment organisations will provide a standard template upon which to record the assessment outcomes.

This observation will provide the opportunity for the apprentice to synoptically demonstrate core and specific knowledge, skills and behaviours in a realistic work situation.

Professional Discussion Requirements and Portfolio of Work
The professional discussion supported by the portfolio of work will be the final stage of the end point assessment process. The subject matter expert conducting the professional discussion should ideally be the same person who carried out the observation and review of the portfolio of work.

➢ The professional discussion will include as a minimum, **two** examples of unplanned activities and **one** example of an emergency activity, which were not covered during the observation. See Annex A.

➢ The portfolio will include **as a minimum**, evidence of **all** of the core knowledge, skills and behaviours plus examples of work-based activities. The examples of work-based activities should include:

  • Three planned activities - real life

  • Two unplanned activities - real life **or** simulated

  • One emergency activity - real life **or** simulated.

➢ The professional discussion will be carried out over a two-hour period.
➢ The portfolio of work will be submitted to the independent assessment organisation once the apprentice has successfully passed the Employer Gateway, and no less than seven days before the professional discussion takes place.
➢ The independent subject matter expert will review the portfolio prior to the professional discussion-taking place.

The professional discussion supported by the portfolio of work will assess all the following areas:

Core Knowledge

➢ Safe and professional working practices, including legislation, statutory operating regulations e.g. the Railways and Other Guided Transport Systems (Safety) regulations, industry procedures and safety requirements and instructions, as well as the need to understand and adhere to corporate policies on ethics, equality and diversity.
➢ The importance of maintaining a safe working environment and equipment, including how to secure the work environment, how to take and handover duties and the importance of equipment testing/checks.
➢ The importance of commercial principles applicable to the rail network and the implications of these regarding timetabling, scheduling and performance, as well as understanding the impact of events and decisions on customer service and

reputation.
➢ How to work safely and effectively in routine, non-routine and emergency situations, including awareness of the importance of managing non-routine events and emergency situations and the implications for the safe operation of the rail network.
➢ The limits of your own authority and the implications of operating outside of this.

Core Skills

- Keep themselves and others safe by adhering to safe working practices - Understand and comply with statutory regulations and organisational safety requirements, with or without supervision. These may include: receiving and relaying communications, protecting persons on or near the track, activities capable of controlling the movement of a vehicle, signalling and signalling operations, operation of level crossing equipment and controlling the supply of electricity to electric traction, signalling systems and other services.
- Prepare for a high standard of work - Gather information from drawings, plans, schedules, safe systems of work and permits, as appropriate, to support operating activities. Be mentally and physically prepared for duty and able to interpret information, including information about the state of the network in support of all other rail transport operating activities.
- Deliver a high standard of work - Undertake planned, unplanned and emergency rail transport operating activities diligently at all times. Communicate and provide accurate information to stakeholders in line with personal role. Continually monitor the situation, even during periods of relative inactivity, and maintain focus during peak workload times. Prioritise activities according to the situation and take responsibility for personal actions.
- Work with others - Work effectively and efficiently, individually and as part of a team, with colleagues, clients, suppliers and the public. Deliver excellent customer service with the aim of exceeding customer expectations and managing conflict when required.
- Communicate effectively - Use all appropriate methods and systems for accurate and effective communication. Use clear and engaging communication to establish a good rapport with customers and ask relevant questions to determine their needs. Report & accurately record all required information, using correct terms, standards, templates and protocols.

Behaviours

- **Act professionally,** demonstrating dependability, determination, honesty and integrity. Be approachable, respect others, act ethically and contribute to sustainable development.
- **Be risk aware,** in order to reduce risks by checking information, concentrating on the task, maintaining an awareness of changing circumstances and remaining calm under pressure.
- **Display a self-disciplined, self-motivated, proactive approach to work**, the ability to make independent decisions whilst understanding limits and knowing when to ask for help or to escalate.
- **Be receptive to feedback**, willing to learn new skills and to adjust to change. Undertaking professional development necessary in order to maintain and enhance competence.
- **Make a personal commitment** to an employer, the industry and its professional standards.

Follow-up questions may be used to probe further into the detail in order to satisfy the independent subject matter expert of the depth of knowledge, skills and

behaviours. The independent subject matter expert will document the questions asked as well as the apprentice's responses.

By the end of the professional discussion the subject matter expert will make a judgement as to whether the apprentice successfully met the requirements of the end point assessment.

The professional discussion will be conducted in a 'controlled environment' i.e. a quiet room, away from the normal place of work. If for any reason it is not possible for the apprentice and subject matter expert to meet in the same place, subject matter experts must ensure adequate controls are in place to maintain fair and accurate assessment. The professional discussion may be conducted using technology, as long as fair assessment conditions can be maintained. Acceptable means of remote assessment include video conferencing / video calling and must include a two-way visual and audio link.

A standard question template will be developed by the assessment organisation and will be used to ensure consistency and allow subject matter experts to focus on key areas for confirmation of performance and effective appraisal of the evidence base. This will ensure that consistent approaches are taken and that all key areas are appropriately explored.

The professional discussion will recognise areas that have already been covered in the observation so as not to re-assess an area in which the apprentice has already demonstrated competence.

6. On–Programme Assessment
The portfolio of work will be mandated on-programme and will feed into the professional discussion during end point assessment. Each apprentice will complete the portfolio of work in the three months leading up to end point assessment.

The portfolio will showcase what the apprentice has learnt and enable them to demonstrate the specific work-related tasks they have completed to show how they have achieved core and specific pathway competence including a reflection of any problems that they have encountered, how these were resolved and what has been learnt.

The training and assessment programme is required to meet the knowledge, skills and behaviours of the standard and will cover normal, degraded and emergency activities as detailed in the specific pathway. It is recommended employers will have assessment arrangements, which will be a combination of knowledge testing and practical assessments throughout the programme.

It is recommended regular progress reviews will take place between the apprentice, employer and training provider giving those involved the opportunity to give feedback. These will not contribute to the end point assessment.

7. Re-takes/Re-sits

If an apprentice fails one or more elements, the apprentice may re-take/re-sit one or more elements within six months of the end-point assessment taking place. Re-take/re-sits outside of the six-month end-point assessment period would require all elements to be re-assessed. Apprentices must have a supportive action plan to prepare for the re-take/re-sit. Further re-takes/re-sits would be at the discretion of the employer following a 1:1 review with the apprentice to determine the suitability of the apprentice for further assessment.

8. End-Point Summary of Roles and Responsibilities

The employer will agree which discipline the apprentice will undertake. It is recommended that the employer supports the apprentice and conduct regular reviews to monitor their progress throughout the apprenticeship. The employer will determine when the apprentice should be put forward for the end point assessment.

For final judgements to be made the following is required:

Role	Responsibilities
Employer:	• Employer Gateway decisions • Review of portfolio at gateway prior to independent end point assessment
Independent Assessment Organisation	1. Practical observation 2. Professional discussion and Portfolio of work Ensure the apprentice has been assessed in a fair and consistent way. Must be on the Register of Apprentice Assessment Organisations. The final decision on grading will be made by the assessment organisation; they will consider the performance of the apprentice in both of the assessment methods before deciding if the apprentice has met the requirements for full occupational competence.

9. Grading

Due to the safety critical nature of the Rail industry the apprenticeship will be graded pass or fail. The pass or fail will be determined by collective performance in the both of the assessment methods in the end-point assessment.

Grading Criteria

The following criteria will demonstrate a pass for the observation:

Apprentices will demonstrate ALL of the core and relevant pathway specific criteria during the observation	
Core Knowledge	
Rail Infrastructure Operating Principles	• Demonstrates a good knowledge of rail transport infrastructure and vehicles, including the network as a system
Specialist Knowledge and Skills	
Signalling Operator, Electrical Controller and Incident Responder	• Demonstrates effective communication, specifically in relation to observing the safety critical communication protocols • Responds to a situation/event in accordance with the relevant rules and regulations • Demonstrates the ability to maintain personal and other team member's safety • Demonstrates understanding of impact of own actions on others and the train service • Demonstrate positive and encouraging behaviours to maintain professionalism • Records/logs details of actions in accordance with laid down procedures • Act on information in an appropriate and timely manner • Reaches a clear understanding through appropriate use of questioning, summarising and read backs Demonstrates ability to maintain system safety throughout • Involves all relevant parties in the activity: communicating clearly and working together as required • Able to operate a safe working environment for planned, un-planned and emergency working • Able to operate control systems (Signalling Operator and Electrical Controller only). • Able to control an incident and identify the correct type of response (Incident Responder only).

The following criteria will demonstrate a pass for the professional discussion:

Apprentices will demonstrate ALL of the criteria during the professional discussion	
Core knowledge and Skills	
Safety	• Demonstrates a good understanding of statutory regulations and organisational safety requirements
Quality	• Evidence is genuinely attributable to the apprentice • Demonstrates development over a minimum of 12 months • Confidently communicates knowledge of their specific pathway and where that sits in the wider rail industry • Demonstrates specific underpinning knowledge of the activities presented/discussed • Can demonstrate breadth of experience within the context of their specific pathway • Can demonstrate an understanding of the roles and responsibilities of other key stakeholders
Customer Service	• Uses clear and engaging communication to establish a good rapport with customers. • Able to ask relevant questions to determine customer needs.
Behaviours	
Act Professionally	• Readily shares information, is dependable, open and honest • Attitude is usually respectful & positive • Is respectful of relevant rules or policies, and acts ethically
Be risk aware	• Routinely follows standardised procedures • Concentrates on immediate task at hand • Remains calm and professional when under pressure
Display a self-disciplined, self motivated, proactive approach to work	• Demonstrates reflective learning • Recognises and chooses best course of action appropriate to situation or task • Considers impact of own actions on other people or activities
Be receptive to feedback	• Listens to and acts upon feedback. • Carries out and records CPD necessary to maintain and enhance competence
Make a personal commitment	• Demonstrates accountability for own learning • Manages own time and workload to achieve required standards • Stays motivated and committed, when facing challenges

Overall

The apprentice needs to pass both of the end point assessment methods to pass. If an apprentice fails any part of the end point assessment they will be given the opportunity for additional support in areas as required and to re-take the assessment.

10. Quality Assurance

Independence and Internal Quality Assurance

The Assessment Organisation

The independent assessment organisation will be responsible for carrying out the end point assessment. Any subject matter experts involved in the end point assessment must not have had direct involvement with the apprentice as their mentor, coach, direct trainer or direct supervisor/line manager.

All assessment organisations must be on the Education and Skills Funding Agency's Register of Apprentice Assessment Organisations.

The assessment organisation's primary role will be to ensure that all decisions are consistent, credible and undertaken with integrity, it will:

- Provide documentation and guidance in relation to the requirements of the apprenticeship
- Monitor subject matter experts and provide remedial support to ensure consistency and reliability of judgements on a risk based basis, for example, those newly qualified
- Approve subject matter experts for the purposes of conducting assessments, based on a check of knowledge, experience, assessment qualifications and independence
- Provide training for subject matter experts in terms of the requirements of the apprenticeship such as: carrying out observation and professional discussion including reviewing the portfolio of work,
- Provide training for subject matter experts in undertaking fair and impartial assessment and making judgements about performance and the application of knowledge and behaviours within a workplace setting
- Hold standardisation meetings at least twice per year for subject matter experts, to ensure consistent application of the guidance
- Ensure assessment organisation staff are trained in assessment and moderation processes and undertake regular continuing professional development
- Develop and manage a complaints and appeals procedure.

Minimum requirements of Subject Matter Experts

Subject matter experts must:

- Be registered and recognised by the assessment organisation
- Be competent to make qualitative judgements about the occupations they are assessing. Illustrations of competence could include the subject matter experts:

  - Having substantial demonstrable experience in the job roles they are assessing
  - They must be currently working in the industry and be occupationally competent, with a minimum three years experience
  - Being in a day-to-day line management, training or quality assurance role in the area they are assessing

- Carry out their duties in accordance with the current national occupational standards for Assessment, and in line with current guidance on assessment practice issued by the assessment organisation
- Be in possession of or working towards the assessment qualifications or hold the A1/A2, D32/33 award
- Maintain appropriate evidence of development activities to ensure their assessment skills and occupational understanding are current (CPD)
- Have a working knowledge of the apprenticeship standard and a full understanding of that part of the apprenticeship standard for which they have responsibility. The assessment organisation will confirm this through examination of relevant CVs supported by relevant references
- Be approved by the assessment organisation that must maintain records demonstrating how they meet the requirements. The appointment of subject matter experts may require the prior approval of the assessment organisation
- Meet any additional requirements as specified by the assessment organisation

External Quality Assurance – The professional Institution of Railway Operators will deliver the External Quality Assurance of the standard and assessment plan on a not-for-profit basis.

External quality assurance visits will be completed regularly with each assessment organisation, and may include more than one visit where an assessment organisation operates in more than one geographical location, or uses multiple assessment centres. External quality assurance will comprise a range of activities, examples of which are detailed below.

External quality assurance activities

External quality assurance will focus on the following four defined areas to ensure compliance:

Ensuring consistency of assessment tools

- Development of the assessment materials
- Consistent application and internal quality assurance of assessment materials during end point assessments

Competence of staff – EQA activity will check

- Occupational competence of assessment and internal verification staff
- Assessment and internal quality assurance staff have been trained to provide end point assessment for the Rail Infrastructure Operations standard
- Continuous professional development of both occupational and assessment competence is occurring to the prescribed standard

Internal quality assurance – EQA activity will check

- Independent assessment organisations have implemented internal quality assurance procedures as set out in the assessment plan

Reporting and management of information – EQA activity will check

- Timely and accurate registration of the apprentice and notification of results
- Accuracy of internal data
- Full accurate and legible records

Frequency of quality assurance visits

The frequency of quality assurance visits will vary depending on the structure of the assessment organisation for example: if an assessment organisation operates multiple teams of assessors they will be sampled more regularly. The baseline sample for the first external quality assurance visit will be 10%. At the end of each quality assurance visit the assessment organisation's performance will be graded – outstanding, adequate or poor. Future quality assurance visits will be planned using the following guidelines:

- Outstanding EQA results can expect future samples to be less than 10%
- Poor EQA results can expect increased frequency of activity and size of EQA sample.

At each quality assurance visit the sample required will include:

- Apprentices who are currently in the assessment window and those who have completed their end point assessment since the previous full external quality assurance visit

It is expected that EQA activity will typically occur every six months, but this frequency may be adjusted in accordance with the volume of apprentices completing end point assessment and the past performance of the assessment organisation.

Prior to an external quality assurance visit, assessment organisations will be contacted to provide and confirm relevant information regarding apprentices. From this information a sample will be selected and names of apprentices for whom evidence and activity are to be quality assured will be notified to the assessment organisation prior to the visit.

Typically, an external quality assurance visit will involve:

- Meetings between the external quality assurance representatives and apprentices, assessors and internal quality assurance staff.
- A desk review of assessment documentation, covering each assessment activity and usually covering the range of results from pass and fail, validating the internal quality assurance activity.
- Review records relating to the planning of internal quality assurance and feedback from end point assessments.
- Review records relating to appeals and grievances.
- Review of competence and CPD for assessment and internal quality assurance staff.
- Review evidence of satisfaction measures for apprentices and employers.
- External quality assurance activity will normally include an opportunity to observe part of a practical assessment, professional discussion or conduct of an examination. All four forms of assessment will be observed over time during the course of external quality assurance visits.

Reporting and recommendations

- Within 10 working days after the quality assurance visit a draft report will be sent to the independent assessment organisation, including recommendations, actions and a provisional risk grading. The assessment organisation will be given a further 10 working days to provide any feedback, as necessary, after which the final edition of the report, including final grade, will be sent to them. The report will remain confidential and will not be made publically available.
- Subsequent external quality assurance activity will be appropriate to the findings, recommendations and actions and may include interim EQA activity prior to the next full visit.

11. Implementation

Affordability
The end point assessment process developed is both efficient and cost effective. It builds on the processes in place (above those required for delivery of the apprenticeship). It is affordable for employers of all sizes.

The cost for end point assessment is estimated to be in the region of 15% of the total apprenticeship costs.

12. Professional Body Recognition

The Institution of Railway Operators (IRO) and the Chartered Institute of Logistics and Transport (CILT) have been consulted with and support the development of this apprenticeship standard and End point Assessment Plan. Apprentices who register as Affiliate Members (IRO), Learner Affiliates (CILT) at the start of the apprenticeship will benefit from membership of the professional organisation throughout their programme. Successful completion of their apprenticeship programme allows them to progress to Associate level (IRO) and Affiliate grade (CILT) of membership.

13. Consistent

This assessment plan is designed to produce outcomes that are consistent and reliable across apprentices employed in different sizes of organisation with different specialisms.

There has been a collaborative approach across the rail sector in developing the standard and the end point assessment plan involving the following:

- Employer representatives
- National Skills Academy
- Institution of Railway Operators and Chartered Institute of Logistics and Transport

Assessment Organisations will produce guidance for apprentices, employers, training providers and subject matter experts to ensure consistency and accuracy. Any other guidance/information produced will be made freely available through the independent assessment organisations and the National Skills Academy for Rail website.

14. Volumes

The number of Rail Infrastructure Operator apprentices for this apprenticeship standard is estimated to be in the region of 200-230 for the first year raising to between 300-400 per annum by 2020.

15. Annex A – Planned, Un-planned and Emergency Working Criteria

Observation
The observation will cover at least one activity from each category of planned, un-planned and emergency working, for the specific pathway the apprentice is working towards

Professional Discussion supported by Portfolio of Work

➢ The professional discussion will include as a minimum, **two** examples ofunplanned activities and **one** example of an emergency activity, which were not covered during the observation.

➢ The portfolio will include **as a minimum**, evidence of **all** of the core knowledge, skills and behaviours plus examples of work-based activities. The examples of work-based activities should include:

- Three planned activities - real life

- Two unplanned activities - real life **or** simulated

- One emergency activity - real life **or** simulated.

Note: this is not an exhaustive list but is designed to provide a detailed example of the sorts of activities you would expect to cover in the planned, unplanned and emergency categories.

Category	Signaller	Electrical Controllers	Incident Responder

| Planned | Shift handover

OR

Opening and closing signal boxes/cabins

AND

Signalling trains in accordance with the timetable

Implementing permissive working

Operating level crossings (as infrastructure allows)

AND

Providing protection to staff on track (track works and train crew/stations staff)

Line blockage

Protection provided to people during engineering works

Authorising trains in and out of possessions | Shift handover

AND

Monitoring systems and supplies

AND

Implementing a planned isolation (i.e. isolations for T3 possessions, racking out circuit breakers, HV feeder cable isolations, sub-station outages and OHL isolation). | Undertake incident avoidance activities such as checking the infrastructure, seasonal preparedness and equipment checks

Undertaking lessons learned exercises

Monitoring information systems to identify potential issues

Input to development/review of contingency plans

Plans safe systems of work

Implement PLANNED degraded working (temporary block working/pilot working/single line working/modified working and emergency special working)

Collating and distributing safety critical and/or operational information (i.e. safety alerts, urgent safety advice, safety incident reports) |

Category	Signaller	Electrical Controllers	Incident Responder

| Unplanned | Infrastructure failure (e.g., signal failure, points failure, track circuit failure, rail defect, broken rail, level crossing failure) | Responding to an alerts and alarms (i.e., telephone equipment failure, loss of control at an outstation, loss of supply failure, intruder/entry alarm, feeder cable faults/damage, traction damage) | Shift handover

AND

Initial response to incidents including making the site safe where appropriate |
|---|---|---|---|
| | Train fault/failure (e.g., defective on train equipment, train failure) | Responding to circuit breaking tripping including re-setting procedures | Investigation into incidents |
| | Single line working/temporary block work | Remotely restoring signal supplies | Mobilisation of support staff to assist with site recovery |
| | Managing altered timetables, service disruption, special train services (including out of gauge loads) | Providing alternative supply arrangements | Prioritised planning and service recovery |
| | Wrong direction moves | Section proving / progressive re-charging | Coordinating and/or acting as a point operator and/or route setting agent in manual operation of points |
| | Authorising signals to be passed at danger | Implementing a short notice isolation | Coordinating and/or acting as a level crossing attendant during level crossing failure situation |
| | Cautioning of trains | Returning supplies to normal feeding arrangements | Implementing degraded working (temporary block working/pilot working/single line working/modified working and emergency special working) |
| | Managing a report of a trespasser or other route incursion (i.e., animals on the line) | | Coordinating and/or acting as a bridge strike nominee or a rail defect nominee in the event of an infrastructure failure |
| | Managing a report of a person struck by a train/fatality | | Responding to and managing a fatality incident |
| | Managing different weather related issues and implementing weather plans accordingly | | |

Category	**Signalling Operations**	**Electrical Control**	**Incident Response**

Emergency	Obstruction of the line Managing a train proceeding without authority Dangerous Goods incident Derailment Divided train Returning to running normal timetable	Emergency switch off in response to either: • Reports of trespassers • Line side/train fires • Animals on the line • Derailment • Fatalities • Persons who have come into contact with the electrification system Returning supplies to normal feeding arrangements	Making a site safe Site control and liaison with emergency services and other on-site personnel/agencies Act as a tactical commander during an incident requiring the attendance of the emergency services Holding/participating in incident management meetings Hand back of the line Arranging/coordinating passenger evacuation

Portfolio of Work
The following lists the sort of evidence that should be provided in the portfolio of work to demonstrate competence in the CORE knowledge, skills and behaviours. It is not exhaustive. It is in addition to the evidence that must be provided to demonstrate competence in the specialist pathways.

Core Knowledge	Evidence
Safe and professional working practices	Completed company induction including all appropriate safety policies and procedures
	Training sessions relating to legislation, the Rule Book and national operations instructions
	Briefings/training on core company policies (i.e. Diversity and Inclusion e-learning, Business ethics e-learning, social media and information security briefing)
The importance of maintaining **a safe working environment and equipment**	Local induction where it covers site security aspects
	Evidence of booking on and off duty
	Evidence of a conducting shift handovers
	Evidence of training covering shift handovers, equipment tests
The **importance of commercial principles**	Evidence from training sessions (for example on Railway Commercials or customer service)
	Evidence of how to use train running information systems and how to use them to inform decisions about regulating.
	Examples of where candidate has regulated and can demonstrate the impact this has had on train performance
	Examples of where candidates have dealt with service disruption and can explain how their actions have mitigated delays and/or contributed to improved customer service

Core Knowledge continued	Evidence
How **to work safely and effectively in routine, non-routine and emergency situations**	On the job training and observations or working on the job Completed on programme knowledge assessment
The **limits** of your **own authority**	Examples of when candidates have escalated decision making Examples of when candidates have asked for help in managing a situation Examples of when candidates have to seek permission from others before activities can proceed Candidate's own assessment of areas for development On programme reviews by line managers and/or trainers

Core Skills	Evidence
Safety: keep themselves and others safe by adhering to safe working practices	On programme observations/assessments Examples of safety critical communications exchanges Operational forms that have been completed as part of applying an operations process Plans of work (i.e., safe systems of work, permits to work)
Quality: Prepare for a high standard of work	Examples of shift handover Examples of what the candidate does to prepare for work and what steps can be taken in managing their lifestyle that will ensure they are prepared for duty appropriately Examples of where the candidate has prepared for a work activity (e.g. engineering works, planned degraded working/reduced service, implementing speed restrictions) Plans of work (i.e., safe systems of work, permits to work)

Core Skills continued	Evidence
Quality: Deliver a high standard of work	On programme observations/assessments
	Examples of safety critical communications exchanges
	Operational forms that have been completed as part of applying an operations process
	Non-technical skills assessment(s) demonstrating the candidate's capabilities in an operational context
Customer Service: Work with others	Examples of where the candidate has dealt with an incident requiring cooperation with Control and other railway stakeholders
	Examples of where the candidate has provided protection to others working on the railway
	Training sessions relating to working with others and customer service
	Reports outlining cross functional visits and lessons learned
Customer Service: Communicate effectively	On programme observations/assessments
	Examples of safety critical communications exchanges
	Operational forms that have been completed as part of applying an operations process

Core Behaviours	Evidence
Act professionally Be risk aware Disciplined, self-motivated, proactive approach to work Receptive to feedback Makes a personal commitment	All the behaviours can be demonstrated through a combination of: • On programme assessments • Non-technical skills observations/assessments • Feedback from others (i.e., work colleagues, line manager, briefers, trainers) • Progress reviews and/or actions plans • Individual learning plans and records • Self-reflection accounts • Safety critical communications exchanges • Completed training sessions that are focussed on behaviours as a demonstration that the candidate has acquired as a minimum, awareness of the skill and how it can be demonstrated