Railway Engineering Graduate Scheme

Handbook

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ATOC Railway Engineering Graduate Scheme Handbook

What's new in this edition?

Section	Title	Changes	Page
11	Initial Meeting Arrangements	Agenda updated	12
15	Ongoing Training Records	Submitted Evidence added	16
16	e-MPDS	Revised wording	17
17	Progress Management	Agenda updated	18
19	Professional Review	Revised to reflect current practice	21
Appx E1	Training Programme	Updated content	29
Appx E2	Optional Requirements	Updated content	30
Appx E3	Technical Visits	New appendix	31
Appx F (3)	Competence Level Definitions	Definitions expanded	34
Appx M	e-MPDS Screen Shots	Competence Check Sheet added	48
Appx S	Professional Review Advice	Revised to reflect current practice	58

ATOC Railway Engineering Graduate Scheme Handbook

Contents

Section 1 - Introduction 5
1. Introduction 5
Section 2 - Recruitment 6
2. Our offer to applicants 6
3. What we need from applicants 6
4. Salary Guidance 7
5. Recruitment Process 7
6. Joint recruitment actions with other companies 7
7. Attracting applicants 8
8. Training Routes 9
Section 3 - Graduate Engineer Training 10
9. Getting Started 10
10. Training Programme 10
11. Basic chart of scheme operation 12
12. Initial Meeting Arrangements 13
13. Induction training 13
14. Training Records 14
15. Start-Up Records 15
16. Ongoing Training Records 16
17. e-MPDS 17
18. Progress Management 18
19. Assessment of Competence 19
a. Introduction 19
b. Competence definitions 19
c. Methods of assessment 19
d. Portfolio of Evidence 20
e. Competence Development 21
f. Supporting Documentation 21
20. Professional Review 21
21. Support for all participants 21
22. Termination 22
23. Work permits and Visas 22

ATOC Railway Engineering Graduate Scheme Handbook

Appendix A: Organisation Application to participate in REG Scheme 23
Appendix B: Application for an individual trainee to join REG Scheme 24
Appendix C: Institution Contacts 25
Appendix D1: ATOC REGS Line Manager Report 26
Appendix D2: ATOC Railway Engineering Graduate Scheme Line Manager Report – to be used when in responsible post 27
Appendix E1: Training Programme Minimum Requirements – Mandatory 29
Appendix E2: Training Programme – Additional optional elements 30
Appendix F (1): Generic Competence Record Form - IEng 32
Appendix F (2): Generic Competence Record Form - CEng 33
Appendix F: Competence Level Definitions to be used in the ATOC Railway Engineering Graduate Scheme 34
Appendix G: IMechE e-MPDS Guidance 35
Appendix H: Universities Offering Accredited Degrees 37
Appendix I: EDT - Year In Industry Contacts 40
Appendix J: List of Mentors 41
Appendix K: ATOC staff profile 43
Appendix L: Buddy Description 44
Appendix M: e-MPDS Sample Screens 45
Appendix N: Monitoring Visit Record Form 49
Notes 49
Appendix O: Sample Training Objectives 50
Appendix P: Book List 55
Appendix Q: Trainee Feedback Form 57
Appendix R: Steps to Registration - Diagrammatic representation 58
Appendix S: Professional Review Advice 59
Preparing for Professional Review - Interview 59
Preparing for Professional Review – Competence assessment 60
Preparing for Professional Review – Check sheet 61
Appendix T: Mentor Check list 62

ATOC Railway Engineering Graduate Scheme Handbook

Section 1 - Introduction

1. Introduction

Welcome to the ATOC REGS Handbook. This document gives guidance to Candidates, Mentors, Line Managers, Training Managers and others involved with the delivery of training to Graduate Engineers under the REG Scheme. The handbook is essentially a reference document and is only 20 pages long but is supplemented by a range of appendices which give much useful advice. Electronic recording of candidates' progress using the e-MPDS system continues to be the norm and this applies to both electrical and mechanical engineers. Compliance with this Handbook is a requirement for those participating in the REG Scheme and monitoring by ATOC is built into the process.

Train Operating Companies and other member organisations using REGS benefit by being able to offer graduate engineer recruits the ability to obtain training on a professional development scheme carrying the approval of the Engineering Institutions. The training on offer is relevant to graduate engineers seeking a career in the industry and will enable them to become competent in the field of Traction and Rolling Stock engineering, maintenance, operation, specification, procurement and related project work. In addition, the competences developed will enable them to register with the Engineering Council UK, as either a Chartered or Incorporated Engineer. Training placements in various parts of the industry will be facilitated.

The ATOC Railway Engineering Graduate Scheme Committee oversees the operation of the Scheme. This handbook gives the information needed to operate the scheme and also offers practical guidance to those involved.

This handbook is divided into a number of sections, enabling it to be used as a reference document. The handbook is available electronically, enabling ease of use of the various sections, and will be subject to updating and re-issue as new information comes to hand.

Section 2 deals with recruitment advice. Whilst individual Train Operating Companies will be well accustomed to recruiting staff, not all will have been involved with the recruitment of Graduate Engineers. This section of the document is intended to offer advice relevant to engineering graduate recruitment and the section includes guidance for recruiters.

Section 3 offers information on the operation of the scheme, once the engineering graduates or undergraduates have joined a Train Operating Company or other participating organisation such as Network Rail. A section 'getting started' explains the basic steps in operation of the scheme.

The Appendices give copies of the forms needed when using the scheme, and also furnish a range of other useful information.

Additional information is given on the ATOC REGS web site

www.atoc.org/regs

http://www.atoc.org/about-atoc/ops-eng-major-projects/engineering/graduates/

Comments on the content of the Handbook are welcomed and should be addressed to the author via the ATOC address in London.

ATOC Railway Engineering Graduate Scheme Handbook

Section 2 - Recruitment

2. Our offer to applicants

Train Operating Companies are accustomed to recruiting staff. However they may be less familiar with the recruitment of Graduate Engineers and this section offers some relevant advice.

The Railway Industry has a lot to offer to Graduate Engineers. We are able to provide an interesting and challenging career to the right person. On joining, successful candidates are able to participate in the ATOC Railway Engineering Graduate Scheme. This is accredited by the appropriate Professional Engineering Institutions and thus offers a quality route to achieving Chartered Engineer or Incorporated Engineer registration with the Engineering Council UK.

Each trainee will be allocated a mentor, a senior engineer in the industry, who will monitor their progress and be able to offer them counselling and advice. The mentor will also carry our periodic assessments of the competence development of individual candidates. Under the REG Scheme, training is generally in the field of Traction and Rolling Stock engineering although in some circumstances it can be adapted to suit other fields, eg. Infrastructure engineering. Trainees will be involved in all the varied engineering aspects of the fleets, including design and construction as well as the comprehensive technical and maintenance aspects with which Train Operators are directly involved.

Some Train Operators may decide to take on Undergraduates, who can be offered a year of railway industry experience. Such students can also be offered a place on the ATOC Railway Engineering Graduate Scheme, giving them a head start towards their professional development once their degree is complete. As with Graduates, the candidates must be studying for an appropriate degree. The 'Year In Industry' scheme is one way of contacting such applicants although direct applications from students are not unknown.

3. What we need from applicants

The academic qualification requirements are most important. In order to get the best from applicants, their degree in Mechanical or Electrical Engineering must be accredited by either the IET (Institution of Engineering and Technology) or the IMechE (Institution of Mechanical Engineers). BEng and MEng degrees are both acceptable. Candidates with accredited BEng degrees are likely to be eligible for development to IEng (Incorporated Engineer) registration. Should such applicants be considered suitable to progress to Chartered Engineer registration, additional academic work in the form of recognised 'Further Learning' will be needed. ATOC has information on the availability of suitable academic programmes. These courses attract a fee which will need to be borne by the employing organisation. Candidates with accredited MEng degrees will generally be able to progress to Chartered Engineer registration without further academic study.

Engineering degrees sometimes include study of a foreign language and some TOCs may be interested in students with this ability. There is no problem with this, providing the degree is accredited. Most applicants will know whether their degree is accredited or not. However, it is as well to check and it is good practice to ensure degree certificates are obtained for verification. Information on accredited degrees can be obtained direct from the Engineering Institutions, contact details for which are given in Appendix C.

ATOC Railway Engineering Graduate Scheme Handbook

For undergraduates joining for a year of industrial experience under the REG scheme must also be undertaking degrees which carry accreditation by an Engineering Institution.

Prior knowledge of the railway industry is not a pre-requisite, as the training fully covers the appreciation needed. What is essential is a good understanding of Electrical or Mechanical engineering fundamentals. Without this, the candidate will not be able to assimilate the issues involved and will not readily achieve registration as a Chartered or Incorporated Engineer.

Other qualities sought are self-motivation, ability to innovate and, for our purposes, the ability to work well in teams. We do not require back-room academics, but do require candidates with the ability to apply their engineering knowledge in an intensely practical engineering environment.

4. Salary Guidance

Guidance on current graduate and trainee salaries may be obtained from ATOC by contacting the ATOC Engineering Support Manager (graduates@atoc.org, 020 7841 8134).

5. Recruitment Process

Normal good recruitment practices which incorporate checks on qualifications (including obtaining degree certificates), taking up references, using ability tests and profiling exercises are all relevant in the case of Graduate Engineers.

It is often the practice to use a two-stage selection process. The design of this will, of course, be the prerogative of individual Train Operators. In the case of Graduate Engineers, it can be helpful to cover detailed technical competence and the ability to apply their engineering knowledge in the first round. The second stage of selection can then concentrate on matters of motivation, team fit and presentation skills. It goes without saying that adequate resources must be made available if the recruitment and selection process is to be effective. This includes the involvement of both engineering and HR professionals.

In conducting the interviews and other selection methods, it is important to note that the industry requires engineers with the ability to apply their engineering knowledge in a practical environment. The challenge for interviewers is to tease out this aptitude. Pure academics may not be ideal for the TOC engineering role.

6. Joint recruitment actions with other companies

It is recognised that Train Operating Companies with a small requirement for Graduate Engineer recruitment may have difficulty in resourcing a comprehensive recruitment process. To help with this situation, there is considered to be merit in companies combining resources in their recruitment effort.

The potential benefits of this approach are:-

(a) Reduced staff resource when conducting the selection process,
(b) Greater range of openings presented to candidates thus attracting greater interest in the scheme,
(c) Presents a professional image to the Graduate candidates,
(d) Acts as a precursor to subsequent exchanges of engineers during the training period.

ATOC Railway Engineering Graduate Scheme Handbook

ATOC will provide a clearing role for companies seeking partners and can provide further information of the operation of such an arrangement.

7. Attracting applicants

To make potential trainees aware of the challenges and opportunities in the industry, Train Operators should make direct contact with Universities. This may be done through the career offices and contact information is given in Appendix H. There are opportunities for presentations, 'drop-in' sessions and interviewing. In addition, direct contact with the University Engineering departments can be beneficial. Some Universities can arrange free advertising of career opportunities on their electronic student notice boards.

Word of mouth can be a valuable means of communicating and for those TOCs already employing graduate or undergraduate engineers, it is suggested the candidates make contact with their former universities to help promote the scheme.

ATOC will act as a clearing house for applications received via their web site. Information is available on the ATOC Graduate web site. Those candidates applying to ATOC are given a short questionnaire to complete. ATOC perform a short filter on the questionnaire and appropriate applications are forwarded to the TOCs. It is then for the TOC to contact the candidate themselves if they wish to take the application further.

A further source of future recruits is the Year In Industry (YINI) organisation, and some ATOC members have recruited students with high potential from this source. The students join the industry for a year prior to starting or during their degree course. The training we offer is almost exactly the same as that for Graduates and is recognised by the Engineering Institutions as credit towards MPDS training. The trick is to present an attractive future so that trainees are minded to return to the industry after their degrees are complete. As with Graduate entry, it is equally important to ensure that the degree to be taken by the YINI student is one which is accredited by the Engineering Institution.

The table on the next page gives a diagrammatic representation of routes which may be followed through the scheme. Whether candidates are Year in Industry students, undergraduates seeking a year in industry, or graduates with either BEng or MEng degrees, or those eventually seeking further learning, there is a route through the scheme. In the event that any particular TOC finds itself with a surfeit of good candidates, ATOC will be able to perform a clearing role in advising other TOCs of the situation.

ATOC Railway Engineering Graduate Scheme Handbook

8. Training Routes

IEng **IEng**

3-year BEng Degree leading to IEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Degree Year 1	Degree Year 2	Degree Year 3	Grad Trg	Experience	Experience

3-year BEng Degree with Placement year, leading to IEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		
Degree Year 1	Degree Year 2	YearOut or YINI	Degree Year 3	Grad Trg	Experience		

Year-In-Industry then 3-year BEng Degree leading to IEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
YINI	Degree Year 1	Degree Year 2	Degree Year 3	Grad Trg	Experience

CEng **CEng**

4-year MEng Degree leading to CEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Degree Year 1	Degree Year 2	Degree Year 3	Degree Year 4	Grad Trg	Experience	Experience	Experience

4-year MEng Degree with Placement year leading to CEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Degree Year 1	Degree Year 2	Degree Year 3	YearOut or YINI	Degree Year 4	Grad Trg	Experience	Experience

3-year BEng Degree plus Further Learning leading to CEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Degree Year 1	Degree Year 2	Degree Year 3	Grad Trg	Experience	Experience	Experience	Experience
					F/Learning	F/Learning	F/Learning

3-year BEng Degree with Placement year plus Further Learning leading to CEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Degree Year 1	Degree Year 2	YearOut or YINI	Degree Year 3	Grad Trg	Experience	Experience	Experience
					F/Learning	F/Learning	F/Learning

YINI then 4-year MEng Degree leading to CEng Registration

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		
YINI	Degree Year 1	Degree Year 2	Degree Year 3	Degree Year 4	Grad Trg	Experience	Experience

ATOC Railway Engineering Graduate Scheme Handbook

Section 3 - Graduate Engineer Training

9. Getting Started

Steps needed to register a candidate onto the scheme are:

1. Set up company registration with the ATOC programme – use Appendix A
2. Agree an appropriate training programme within your organisation to meet your needs and the ATOC minimum requirements – see section 10 below
3. Register the individual candidate with ATOC – use Appendix B
4. Select a suitable experienced engineer as Mentor – ATOC can help with this
5. Set up a liaison meeting with the ATOC Scheme Advisor - see section 11
6. Arrange the graduate's release for ATOC induction - see section 12
7. Register the trainee with the relevant Engineering Institution. Mechanical engineering candidates must be IMechE members, register with the IMechE and use e-MPDS for their training records. Electrical engineering candidates must be IET members. They will also use e-MPDS for their training records and for this purpose need to become Affiliate members of the IMechE (for which no fee is required). On e-MPDS it is necessary to select either IEng or CEng competence data so the decision on which to use should be considered at this stage.
8. Progress the programme for candidate's training with reviews as agreed with the ATOC Scheme Advisor – see section 17.

Mentor allocation may be undertaken by the TOC or ATOC. The latter maintain a list of available Mentors and may be consulted for advice. It is important that the Mentor is separate from the Candidate's Line Management function and this can often be achieved by selecting a Mentor from a different company in the railway industry. Mentors are senior engineers from within the industry and must be CEng or IEng. They must also undergo training for the role and suitable courses for this are run by the Engineering Institutions and, from time to time, by ATOC. Mentors are required to undertake a training or refresher course every 3 years and ATOC will maintain a record of training to ensure appropriate refreshers are arranged.

The diagram which follows shows the various stages and roles. In addition a simplified diagram showing the 'Steps to Registration' is shown in Appendix R. ATOC will be pleased to offer advice at any stage of the process. Requests for this should be directed to the ATOC Engineering Support Manager (graduates@atoc.org) on telephone number 020 7841 8134.

ATOC also monitor and validate the operation of the Scheme to the standards specified, thus obtaining and maintaining the approval of the Engineering Institutions. The use of key performance indicators will be a part of this process.

10. Training Programme

Each candidate must undertake a programme of formal training placements and this must be of at least 12 months duration. This programme should be prepared and available for discussion at the start-up meeting with ATOC. Guidance on the content of the programme is given in Appendix E and this is divided into E1, mandatory elements, with optional parts being shown in E2 and guidance on Technical Visits shown in E3. Outline objectives for each training placement are listed in Appendix O. It is intended that the programme is applied flexibly so as to exploit any experiences or opportunities on offer and dates and periods should be varied to suit individual needs as they arise.

ATOC Railway Engineering Graduate Scheme Handbook

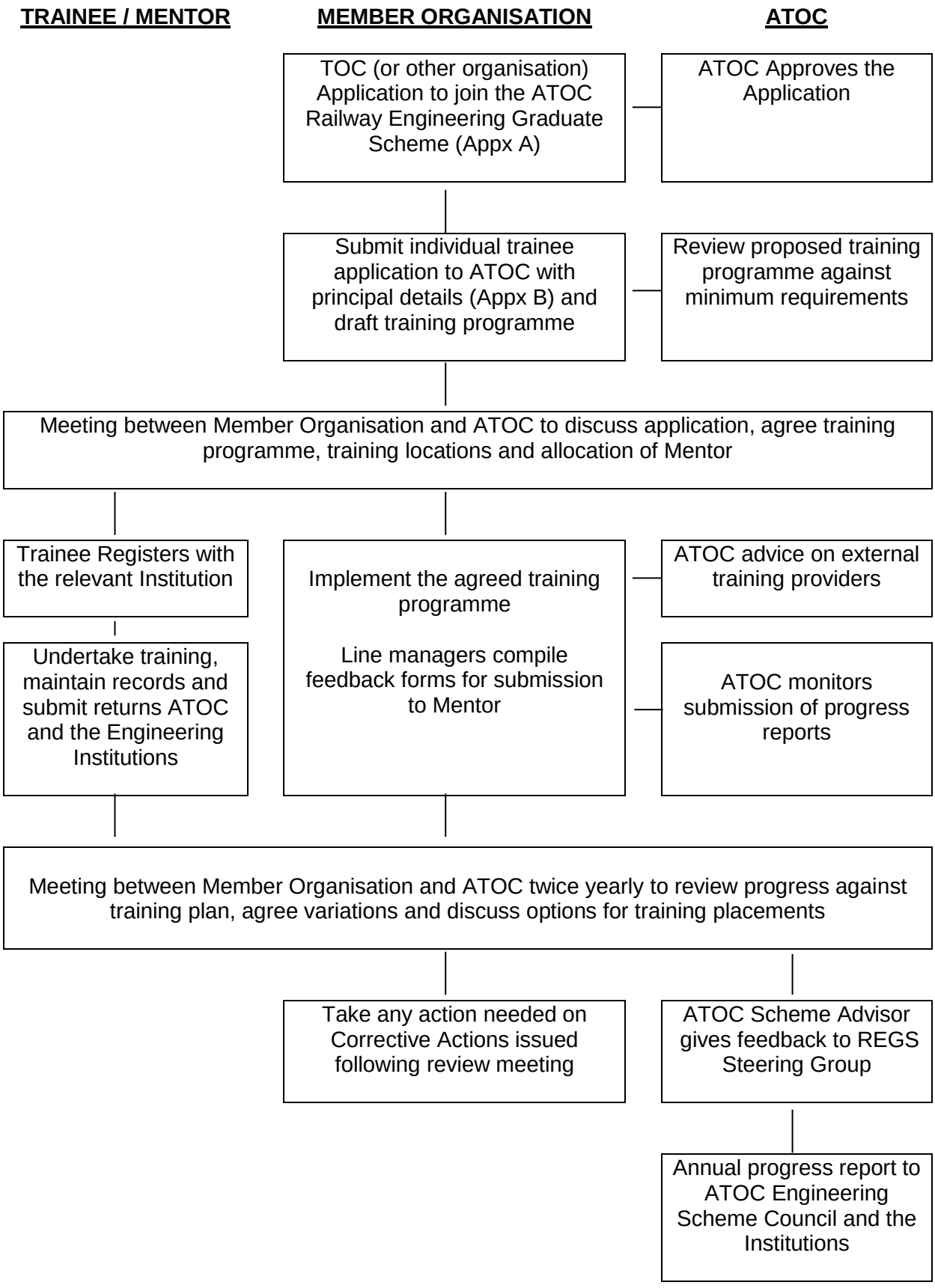
It is desirable for the elements concerned with shop floor practical experience to be undertaken at an early stage in the programme. The experience should include working with shop floor staff, following their shift pattern and carrying out actual maintenance or repair work where possible. At least two thirds of the period should be undertaken at the same depot and consideration should be given to making up the balance at another depot, if possible one maintaining different type(s) of vehicle.

Once the shop floor experience is complete, the other placements can be implemented and the candidate will benefit from being more readily able to contribute to productive work once basic knowledge has been assimilated. Another important placement is that of engineering design. For undergraduates this is best undertaken after completion of the degree. Even with those joining the industry as graduates, the design experience should be towards the end of the programme.

The mandatory programme includes a number of formal Training Courses and details are included in the list in Appendix E1. Some of the mandatory courses must be undertaken during the candidate's first year on the Scheme, this being particularly important in the case of the Traction Systems Course which is timed to provide basic knowledge of vehicle system at an opportune time for those starting in September.

ATOC Railway Engineering Graduate Scheme Handbook

Basic chart of scheme operation



ATOC Railway Engineering Graduate Scheme Handbook

ATOC are available to offer advice at every stage of the arrangements

11. Initial Meeting Arrangements

For each trainee, or group of trainees, in a TOC, there will be an initial meeting to set up and agree the training arrangements. This will take place at the commencement of training and will be used to discuss and agree the arrangements for any placements needed. Mentoring and reporting arrangements will be set up and contacts established for ongoing monitoring and advice. Attendees required are the ATOC Scheme Advisor, TOC Engineer responsible for the scheme, Mentor(s), Trainee(s) and appropriate Line Managers.

Mentor allocation for each candidate is a matter for agreement between the TOC and ATOC. Mentors must be separate from the line management function of the trainee, and will be registered either CEng or IEng. It is the target that once allocated a candidate, the mentor will remain linked with the candidate until they themselves become registered as a Professional Engineer. New mentors will require appropriate training and from time to time will be in receipt of refresher training, currently required by the engineering institutions 3-yearly.

In constructing the training programme, notice must be taken of the minimum requirements of the scheme. These are specified in Appendix E1. Optional elements are shown in Appendix E2. It is likely that some of the training experiences will be gained in companies other than that employing the trainee. Advice is available from ATOC on possible sources of experience needed. ATOC maintains a list of placements and can also offer advice on this aspect. Please contact the ATOC Engineering Support Manager for details. Technical Visits are arranged from time to time. These are usually of 1-day duration and there is further information in Appendix E3.

Typical agenda for the initial meeting

1. Introductions
2. Features of the ATOC REG Scheme
3. Degree Accreditation
4. Institution Requirements and Registration
5. Credit for Previous Experience
6. Training Programme
7. Engineering Design
8. Further Learning
9. Choice of Mentor and Mentor Roles
10. Introduction to e-MPDS
11. Competence monitoring and records
12. Induction Arrangements
13. External Placements
14. Any other matters
15. Future meeting dates

12. Induction training

Induction training is mainly the responsibility of the employing organisation. This will include all the relevant safety training, commercial awareness about the company and its aims and organisational appreciation of direct relevance to the trainee.

ATOC Railway Engineering Graduate Scheme Handbook

Personal Track Safety (PTS) training is a requirement for all graduates and consideration should be given to arranging for 'Sentinel' registration, as this will enable the candidates to exploit any opportunities or placements which may become available. The ATOC Engineering Support Manager can advise on suitable PTS courses if needed.

ATOC will supplement this company induction by delivering a short concentrated block relating specifically to the requirements of the REG Scheme and cross-industry matters. The arrangements will be designed to bring all trainees together.

The ATOC Induction programme will include:

1. The Railway Network as a System
2. Who does What in the Railway Industry
3. An introduction to how trains work
4. Why the industry needs Chartered and Incorporated Engineers
5. Regulation in the Industry
6. Managing a safe railway
7. REG Scheme Features
8. Engineering institution Requirements
9. Use of e-MPDS
10. Mentor Roles
11. Trainee Responsibilities
12. The Training Network

A list of books relating to mechanical and electrical engineering and some relevant volumes on railways and management have been identified as being helpful to trainees. These are listed in Appendix P. A number of the books are available in the IMechE library at 1 Birdcage Walk, London. The list will be updated from time to time as additional recommendations are made. Trainees or mentors discovering additional reading are asked to contact ATOC so that the information may be shared.

13. Training Records

The REG Scheme uses the IMechE e-MPDS record system - which is internet based - as the standard process for all trainees to record their evidence and competence development. With this, mandatory records are submitted in electronic format. Candidates are encouraged to make appropriate arrangements to back-up their records and may regard retention of some paper records better suited to their own personal needs. Experience indicates that confusion can exist as to which records need to be completed. The tables which follow in sections 14 and 15 list the requirements and it is hoped this will reduce any uncertainties. Please do seek further advice from ATOC if any clarification is needed.

The importance of prompt submission of reports cannot be over-emphasised. All Quarterly reports must be completed and signed off within one month of the end of the quarter. In the case of Annual assessments, these must be concluded within two months of the year-end. It will in fact be easier to do this whilst the information recorded is fresh in the writer's mind, and exhibits a professional approach to monitoring progress. Candidates whose records become seriously overdue will be removed from the scheme.

Note that 'Line Manager' reports are a mandatory element and two versions are shown in Appendix D. The first of these is for use during training placements and the other, more comprehensive format is for use by candidates who are in a post of responsibility. The latter require completion and submission to mentor once per quarter.

ATOC Railway Engineering Graduate Scheme Handbook

14. Start-Up Records

Record / Form	Complete by	Purpose	Submit to	Paper/ Electronic
Organisation Application to join REGS Appx A	TOC or other organisation	To register with ATOC	ATOC	either
Application for Individual Trainee Appx B	TOC or other organisation	To register Trainee on the scheme	ATOC	either
Training Plan	TOC and Trainee	To record planned programme	ATOC	either

Mechanical Engineering Trainees

IMechE MPDS Mentor Registration Form *	Mentor	To register as a Mentor	IMechE	paper
e-MPDS Trainee Registration *	Trainee and Mentor	To register as a Trainee	IMechE (fee required)	paper

Electrical Engineering Trainees

IET Form RPD to Register with IET	Trainee, Mentor and ATOC	To register Trainee with IET	IET	paper
Application to IMechE for affiliate membership *	Trainee	To permit use of e-MPDS system	IMechE (no fee required)	paper
e-MPDS Trainee Registration *	Trainee	To register as a Trainee	IMechE (fee required)	paper

ATOC Railway Engineering Graduate Scheme Handbook

15. Ongoing Training Records

Record / Form	Complete by	When	Submit to	Paper/ Electronic
Daily Activity Record (the 'Tome')	Trainee	Continuously	-	either
Line Managers Report Appx D1	Line Manager	During training, one or two per placement.	Mentor and as submitted evidence in e-MPDS.	either
Line Managers Report Appx D2	Line Manager	Once in post, 1 report per quarter.	Mentor and as submitted evidence in e-MPDS.	either
e-MPDS Quarterly Report +	Trainee and Mentor	3-monthly	e-MPDS	electronic
Competence Record Form Appx F	Trainee and Mentor	6-monthly	As evidence in e-MPDS	either
e-MPDS annual report +	Mentor	12-monthly	e-MPDS	electronic
Submitted Evidence	Trainee	As appropriate, typically 2 – 3 items per quarter	e-MPDS	Electronic with appropriate attachments

Note that all candidates must be members of either the IMechE or IET and must maintain this membership to continue on the REG scheme.

* These forms should be obtained from the IMechE MPDS web site, www.imeche.org
\+ Mandatory items on e-MPDS

ATOC Railway Engineering Graduate Scheme Handbook

16. e-MPDS

e-MPDS is a web-based record system that guides and helps engineering trainees through to potential eligibility for registration as a professional Chartered or Incorporated Engineer. e-MPDS requires a disciplined reporting framework to ensure that experience and development of competence is planned and recorded. The system facilitates this process and itself imposes a discipline on the reporting arrangements. Guidance on e-MPDS can readily be obtained from the IMechE and flow charts are included in Appendix G. Some sample screens from the system are illustrated in Appendix M.

Access to the IMechE e-MPDS facility is gained via the IMechE homepage www.imeche.org . Mentors who are members of Institutions other than the IMechE will be allocated an access password, obtainable from the IMechE helpline 0845 226 9191. The e-MPDS system includes competence profiles specific to CEng and IEng and candidates should check that their registration category is correct.

The e-MPDS system incorporates a number of mandatory elements and some very useful optional facilities. For each period of three months, candidates must prepare a 'Quarterly Report' and this is done, in liaison with the Mentor, on the e-MPDS system. Reports must record the principal activities undertaken in the quarter and should incorporate achievements, competences gained and work which has made a contribution to the business. The suggested length of each report is 500 words and there is an imposed limit of 750. Competences covered during the period should be listed and need to be ratified by the Mentor. This will assist competence 'scoring', which will take place at Trainee/Mentor meetings at six-monthly intervals.

Another mandatory element is the Annual assessments. This requires competences to be submitted formally onto e-MPDS system. Note that it is very important that quarterly and annual reports are completed promptly. At the time when Mentor and Candidate agree that competences are sufficient to attain professional registration, the final annual report must be submitted with competences signed off by the Mentor. Application for registration as a Chartered or Incorporated Engineer must then be made within six months.

Some aspects of the e-MPDS system are optional and this includes the facility to enter 'Submitted Evidence' each quarter. As training or experience develops, evidence may be submitted via e-MPDS. Line Managers reports and any manually completed competence record forms may be entered into the e-MPDS system as 'Submitted Evidence'. In addition, other appropriate evidence may be transmitted and the candidate should select, each quarter, the 2 or 3 most relevant pieces of work for assessment by their Mentor. The e-MPDS system summarises the entries into a 'Checksheet'. This enables an instant overview of the candidate's competence development. A sample Checksheet is shown in Appendix M, Item 4.

Another optional feature is the use of the system for planning. These plans can specify the competences which will be targeted and drafts may be circulated until finalised by agreement between candidate and mentor. Help is available, if needed, at any stage of the process. Contact the ATOC Engineering Support Manager (graduates@atoc.org or 020 7841 8134) initially, who will be able to direct questions to the appropriate advisor.

ATOC Railway Engineering Graduate Scheme Handbook

17. Progress Management

A requirement of the REG Scheme, and one which is needed to meet the requirements of the Engineering Institutions, is to review the progress of each candidate every six months. Progress meetings will usually be arranged on a TOC by TOC basis and the purpose is to monitor the operation of the training arrangements and to offer any assistance which may be required. A review of the currency of e-MPDS and paper records will be undertaken as well as a review of training opportunities, check on progress with the individual's generic competence development and quality of experiences gained.

Meetings will be between the ATOC Scheme Advisor, TOC Engineer responsible for the scheme, Mentor(s), Trainee(s) and, where possible, the Line Manager. At the monitoring meetings, agreement will be reached on any changed requirements which may be needed. The formal meeting programme does not preclude the setting up of additional meetings if thought desirable, or of discussing progress and any additional offers of assistance as may be needed.

Typical agenda for 6-monthly review meetings

1. Introductions
2. Review of Training Programme
3. Trainee Progress Reports and records
4. Review of changes to Training Programme
5. Review of machine tools, traction and management training
6. Mentor Report
7. Line Managers Report
8. Highlights of the Candidates experience
9. e-MPDS
10. Competence monitoring and records
11. External Placements
12. Further Learning
13. Scheme marking
14. Any other matters
15. Further Meeting Dates

KPIs are to be used to monitor the training arrangements. These will be compiled and reported to the REGS Committee. This will give this group a measure of progress of the scheme as a whole and enable them to ensure that the Scheme delivery is in accordance with the requirements of the Engineering Institutions.

One KPI will record and monitor any corrective action requests arising from the progress meetings. The form for recording checks made at progress meetings is shown in Appendix N. Results are expressed in percentage overall performance. By analysing the corrective action returns, a pattern of any areas of concern can be identified.

A second KPI will measure the success rate of candidates when they complete their training and make their application to be a Chartered or Incorporated Engineer.

Additional subjective feedback is collected from candidates as to the quality of their training and development experiences. The results are submitted to the REGS committee on a regular basis.

ATOC Railway Engineering Graduate Scheme Handbook

18. Assessment of Competence

a. Introduction

The objective of the ATOC Railway Engineering Graduate Scheme is to develop Engineering Graduates to be able to operate effectively as engineering managers in the field of railway Traction and Rolling Stock engineering, maintenance, operation, specification, procurement and related project work. The scheme is designed to deliver industry experience during the formal period of placements of 12-months to 18-months duration and, following this, the opportunity to further develop their engineering competences during the subsequent working experience.

Every candidate under the scheme is allocated a Mentor to advise, assist with the training and monitor the performance of the candidate. This activity is carried out essentially on behalf of the Institution. The Mentor will assess the progress of the candidate against the Engineering Council UK generic competences, using those specified for IEng or CEng as appropriate. Recording of this progress is carried out using the IMechE e-MPDS facility.

The nature of engineering work in the field of train operation is such that professional engineers work in small numbers in diverse locations and departments. In view of this, the Mentor is regarded as the person best placed to assess generic competence development of the individual trainee.

In making preparations for candidates to be accepted for Incorporated Engineer or Chartered Engineer registration, the portfolio of evidence needs to be supplemented by regular recording of competence development. This section of the handbook describes the means by which this will be carried out, using e-MPDS as the recording method to be used.

b. Competence definitions

The IEng and CEng competences are used by the Institutions as a basis for assessing candidates at the time of their Professional Review. The same generic competences are to be used to monitoring progress of individual engineers engaged on the ATOC scheme. These are listed in Appendix F.

Assessors must, of course, be themselves competent in the areas to be judged. Mentors are, by definition, all either Chartered or Incorporated Engineers working in the field of T & RS engineering management and are thus able to carry out assessment under the scheme. Mentors will have meetings at three-monthly intervals with their candidate and at these meetings the development of generic competence is to be reviewed. Formal 'scoring' of competence development may be carried out by assessing 'Submitted Evidence' and it is a requirement to input formal scoring as part of the Annual Assessment e-MPDS return.

c. Methods of Assessment

The table which follows lists some of the main areas of competence relevant to the role of Traction and Rolling Stock Engineers and relates these to the IEng and CEng definitions. Assessment will be against these and the table may assist in the task. Assessment will be by means of discussion on relevant topics, questioning experiences gained in the working environment and reviewing the mentee's portfolio of evidence. This evidence will be wide ranging dependent on the topics being covered. In addition the Mentor will review line managers reports and seek verbal advice from Line Managers

as needed. This should occur whether or not the field of activity is within or outwith the field of direct experience of the Mentor. Mentors are also encouraged to visit the candidate in their place of work, enabling direct observation of activities.

Examples of Generic Competence needed by Traction and Rolling Stock Engineers

Competence Area	Possible Competence Categories
Use of engineering judgement to deliver the safe operation of trains	A1 B2 B3 C1 E1 E2 E3 E5
Ability to apply engineering theory to practical problems with equipment	A1 A2 B2 B3 C2 E2
Negotiation skills related to contracts	D1 D3 E2 E3 E5
Commercial awareness in business context	B3 C2 C4 D4 E5
Negotiation skills related to management of staff	C1 C2 D1 D3
People skills Management	C4 D2 D3 E2
Ability to achieve cost effective engineering solutions	A1 B1 C1
Ability to exploit technical improvements to train maintenance / operation	A1 A2 B3
Presentation of complex technical matters to non-technical staff	A1 D1 D3
Presentation of complex technical matters to engineering professionals	A1 A2 B2 B3 C3 D1 D2 E5
Ability to represent the profession in a public forum	A1 B1 C4 D1 D3 E2 E3

The IMechE web site includes other examples of competence profiles, including those for Railway Engineering.

d. Portfolio of Evidence

The portfolio of evidence will include personal notes of achievements, project reports, engineering designs, observed exercises or activities, records of course attendance, performance appraisals, line manager reports and responses to specific requests for evidence. Recording is to be carried out using e-MPDS, which has formal records of Development Plans, generic competence Records and Quarterly Reports. In addition e-MPDS is able to accept any other relevant evidence and there is great benefit in this being submitted as attached files in electronic format using the Submitted Evidence facility. The resultant Checksheet makes it easy to see an overview of the individual's competence profile. A sample Checksheet is illustrated as Appendix M Item 4.

ATOC Railway Engineering Graduate Scheme Handbook

e. Competence Development

This regular review of competence will reveal areas where specific further development is needed. The Mentor and Mentee will jointly judge the extent to which planned employment will provide the potential for the relevant competence development. If the intended role fails to offer development opportunities, the first action will be for the Mentor and/or Mentee to approach the Line Manager to review the matter. If this approach fails to result in the necessary opportunities arising, the matter may be discussed at the ATOC progress review meeting. In appropriate cases, the REGS Committee Chairman will approach the Professional Head of the TOC employing the Candidate.

f. Supporting Documentation

Appendix M shows some samples of screen formats used in e-MPDS. These and others form the basis of formal records to be maintained and monitored.

19. Professional Review

The ultimate goal of candidates is to participate in the Professional Review process and thus achieve their target of registration as a Professional Engineer. Guidance on preparations for the review has been obtained from the Engineering institutions and this is reproduced in Appendix S. Candidates are strongly advised to take note of this advice as they prepare for their interview and seek advice from the ATOC Scheme Advisor as needed.

At the conclusion of the e-MPDS scheme, and after completion of the final Annual Assessment, candidates are recommended to submit their application for Professional Review within six months. The application process requires a form to be completed and details can be found on the IMechE and IET web sites. After completing the application, arrangements can be may be made for the candidate to experience a 'Mock' Professional Review Interview, on request.

20. Support for all participants

Although formal help will be offered to all participants by those involved at ATOC, there is also a 'training network'. This is an informal group comprising all those involved in any way in using, operating or managing the ATOC REG Scheme. This includes managers, mentors, members of the REGS Committee and, of course, trainees and former trainees. Former trainees from earlier schemes are also welcome, and liaison with candidates from other years or employed by other companies is encouraged.

The object of this informal 'network' is to provide mutual assistance to all concerned and to exploit and encourage best practice in the training arrangements. It is intended that responsibility for communication about the network its activities and knowledge is vested in the current trainees themselves.

Companies involved in the training arrangements are expected to encourage and foster the network. ATOC, for their part, commission an annual scheme conference in March / April each year. All candidates, mentors, training managers and others involved in any with the scheme are invited. Topics included at the conference are any relevant and topical at the time.

ATOC Railway Engineering Graduate Scheme Handbook

New Graduates will be supported by a 'Buddy'. Buddies will be volunteers who have been in the REG Scheme for 1 to 2 years. A description of Buddy roles is given in Appendix L.

21. Termination

Termination on REGS for an individual candidate will normally occur when they receive advice from the Institution that they have successfully registered as IEng or CEng with the Engineering Council UK.

In cases where an individual candidate fails to make satisfactory progress under the scheme, ATOC reserves the right to review the situation and, if necessary terminate the support of REGS for that individual. This action may be necessary to protect the integrity of the scheme as a whole. Prior to taking this action, ATOC will specify improvement actions necessary at two successive 6-monthly review meetings. Should satisfactory progress fail to be made after this, the Chairman of the REGS Steering Committee will carry out a case review and his/her decision will be final. The review will include consultation with the candidate's mentor and employing company representative and is without prejudice to the contract of employment between the candidate and their employing organisation.

22. Work permits and Visas

Candidates from non-European Union Countries may be able to obtain help with application for a Work Permit and/or Visa from certain Train Operating companies (TOCs). It should be noted that this assistance is not obtainable from all TOCs and even those than can assist, may only have a limited allocation. Availability at any particular time will depend upon the take-up by other applicants.

Note that the paperwork and application process are quite onerous and candidates are responsible for completing and delivering all the required documents (using personal hand-delivery if required) in connection with their Work permits and Visas. Particular care must be taken with expiry dates, ensuring that replacement permits, where obtainable, are issued in time.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix A: Organisation Application to participate in REG Scheme

Please complete all sections of this form. Paper and electronic forms are acceptable.	Send the completed form to: ATOC Railway Engineering Graduate Scheme, 2nd Floor, 200 Aldersgate Street LONDON, EC1V 4HD or e-mail to: graduates@atoc.org
Name of Organisation	
Name of Owning Group	
Address for correspondence	
Name of senior engineer with overall responsibility for training	
Position in organisation	
Office telephone number	
Mobile telephone number	
e-mail address	
Person operating the development scheme on a day to day basis	
Position in organisation	
Office telephone number	
Mobile telephone number	
e-mail address	

We wish to be registered as users of the ATOC Railway Engineering Graduate Scheme and agree to operate the scheme in accordance with the scheme documentation.	
Signature	
Print Name	
Date	

For ATOC Use	Registered	Registration Number

ATOC Railway Engineering Graduate Scheme Handbook

Appendix B: Application for an individual trainee to join REG Scheme

Please complete all sections of this form. Paper and electronic forms are acceptable.	Send the completed form to: ATOC Railway Engineering Graduate Scheme, 2nd Floor, 200 Aldersgate Street LONDON, EC1V 4HD or e-mail to: graduates@atoc.org
Name of Organisation	
Full name of trainee	
Date of Birth	
Institution Membership Number (if issued)	
Office telephone number	
Mobile telephone number	
e-mail address	
Graduate or Undergraduate	
Engineering Discipline	
Engineering Degree. (State whether **BEng or MEng, Grade Achieved** (or expected) **name of University**)	
Degree start and completion dates	
Is degree accredited?	YES NO
Training start date	
Proposed Mentor	

We propose to include the above named trainee on the ATOC Railway Engineering Graduate Scheme and agree to operate the scheme in accordance with the scheme documentation.	
Signature	
Print Name	
Date	

Please attach a copy of the proposed training programme for consideration

ATOC Railway Engineering Graduate Scheme Handbook

Appendix C: Institution Contacts

Institution of Engineering and Technology	Savoy Place London WC2R 0BL	Tel: 020 7240 1871 Fax: 020 7497 3609 www.theiet.org
Institution of Mechanical Engineers	1 Birdcage Walk Westminster London SW1H 9JJ	Tel: 020 7222 7899 Help line: 0845 226 0211 Fax: 020 7233 1654 www.imeche.org

The IMechE registration number for the ATOC Scheme is **PDS551**.

The IET registration number for the ATOC Scheme is **0755.11.PD**.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix D1: ATOC REGS Line Manager Report

Name of Grad Engineer	
Dates of Activity	
Activity	
Location / Company	

Line managers please mark a score - ALL BOXES TO BE COMPLETED

Marking key

Performs exceptionally well and shows full personal autonomy and responsibility	**4**
Good performance in complex contexts without supervision	**3**
Exhibits some individual responsibility requiring some supervision	**2**
Requires significant supervision / performs only basic tasks	**1**
Unable to assess in this placement	**n/a**

A – Knowledge and understanding of engineering principles		
1	Maintains a sound theoretical approach to engineering technology	
2	Engages in creative and innovative development of technology	
B - Demonstrates practical application of appropriate engineering solutions		
3	Identifies opportunities and participates in development activities	
4	Plans implements and evaluates engineering solutions	
C - Technical and Commercial Leadership and Management		
5	Effective planning and implementation of tasks, budgets & resources	
6	Ability to lead teams and develops appropriate skills in others	
D - Demonstrate effective interpersonal skills		
7	Communicate in English with others at all levels	
8	Presentation of ideas and ability in personal and social skills	
E - Personal Commitment and Professional Conduct		
9	Implementation of safe systems of work, legislation regulations	
10	Undertake engineering activities in a sustainable manner	

Remarks on performance during placement	
Manager name	
Signed - Line Manager	
Company	
Contact phone No	
Date	
Graduate Engineers comments on placement	
Signed - Graduate Engineer	

Copies of this form to be sent to: (1) Mentor, (2) TOC Training Dept and (3) ATOC.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix D2: ATOC Railway Engineering Graduate Scheme Line Manager Report – to be used when in responsible post

Name of Engineer	
Dates of Activity	
Activity	
Location / Company	
Candidate to list objectives for this period:	
How well did the candidate accomplish their objectives during this period?	
What skills did the Candidate develop?	
What activities did the Candidate do well?	
What activities could the Candidate have done better? Please include suggestions for improvement.	
Did the Candidate achieve any tasks over and above the objectives set?	

ATOC Railway Engineering Graduate Scheme Handbook

Please comment on the Candidate's interpersonal skills, written and oral.		
Please comment on the Candidate's engineering skills.		
Please comment on the Candidate's commercial skills.		
Were any additional training needs identified during this placement?		
Please give a summary for the period under review.		
Signed (Manager)		**Print Name**
Position		
Date		**Phone Number**
Graduate Engineers Comments		
Signed Graduate Engineer		

Copies of form to be sent to: (1) Mentor, (2) TOC Training Dept and (3) ATOC.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix E1: Training Programme Minimum Requirements – Mandatory

Main placements	**Duration (weeks)**	**Typical Location**
Hands-on maintenance practice	6 to 8	TOC depot
Maintenance Management	6 to 10	TOC depot
Technical investigations and engineering standards	9 to 12	TOC
Project Engineering	4 to 6	TOC or Consultancy
Vehicle Build and/or Main Works Experience	6 to 10	Train Builder or Main Works
Engineering Design	10 to 15	Engineering Design office
Short placements		
Operations appreciation	2 to 4	TOC
Financial Management appreciation	2 to 4	TOC
Institution and Professional Activities	2	Events
Formal courses	**Duration (days)**	
Induction *	2 to 7	TOC and ATOC
Traction systems *	10	Course provider
Machine and hand tool skills	10	Course provider
Welding appreciation course	3	Course provider
General management skills	Variable	Course provider
ERTMS Education day	1	ATOC
System Engineering	1	Course provider
Presentation skills	2 - 3	Course provider

Any individual programme must include all of the above items.

* These items must be undertaken during the first year of training.

The actual duration of each placement is to be selected to suit the previous experience of each individual candidate and should total 50 weeks minimum.

Additional placements may be added at the discretion of the TOC and these should not detract from the core items listed above.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix E2: Training Programme – Additional optional elements

Main placements	Duration (days)	Typical Location
Infrastructure Appreciation	15	Network Rail
Train Driving Experience	7	Heritage Railway
ERTMS placement	3	ATOC
Common Safety Methods for Risk Assessment	1	ATOC
Technical Visits – see Appendix E3	Various	Various

The above optional placements and any other additional placements may be added at the discretion of the TOC/FOC and these should not detract from the core items listed in Appendix E1.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix E3 Training Programme – Technical Visits

Technical Visits

On behalf of the REGS Scheme ATOC may, on occasions, facilitate a technical visit to a railway industry related manufacturer or equipment maintenance facility, infrastructure or rail vehicle major project undertaking, design office or consultancy. These visits are normally of 1-day duration and within the UK, although overseas visits are not excluded which may be of a longer duration.

The key objective of the visit would be to provide an opportunity to benefit the Graduate Engineer with exposure to activity outside of his/her normal duties with their employer. The visit would be arranged and escorted by an ATOC representative and normally such visits would be limited to 6 – 8 developing engineers.

To ensure such visits provide value to participants a suitably aligned assignment would be required to be submitted by the developing engineer to the organiser within 10 days of the visit from which the success criteria of the visit can be assessed. A record of the visits and the success or otherwise of the programme offered will be reviewed at the REGS Steering Group.

Participating Graduates will require permission from their employing Company to attend, travel costs and subsistence/accommodation shall be met by the employing Company. Costs associated with the visit programme, (if any) shall be shared pro-rata between the participating companies.

Examples of Technical visits are :-
i) Rail vehicle manufacturing/assembly plant
ii) Rail vehicle major modernisation/upgrade or renovation project
iii) Signalling/rail infrastructure upgrade/ modernisation project
iv) Rail related civil engineering project
v) Major electrical or mechanical repair facility
vi) Engineering consultancy

This list is not exhaustive

Details of technical visits as and when they become available will be notified to participating Companies and the developing engineers.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix F (1): Generic Competence Record Form - IEng

Name of Candidate Engineer	
Current Post	
Location of Work	
Date Record Completed	

Competence	Element	Level Achieved (tick)				Notes
		1	2	3	4	
A. Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology	A1. Maintain and extend a sound theoretical approach to the application of technology in engineering practice					
	A2. Use a sound evidence-based approach to problem-solving and contribute to continuous improvement					
B. Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products	B1. Identify, review and select techniques, procedures and methods to undertake engineering tasks					
	B2. Contribute to the design and development of engineering solutions					
	B3. Implement design solutions and contribute to their evaluation					
C. Provide technical and commercial management	C1. Plan for effective project implementation					
	C2. Manage tasks, people and resources to plan and budget					
	C3. Manage teams and develop staff to meet changing technical and managerial needs					
	C4. Manage continuous quality improvement					
D. Demonstrate effective interpersonal skills	D1. Communicate in English with others at all levels					
	D2. Present and discuss proposals					
	D3. Demonstrate personal and social skills					
E. Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment	E1. Comply with relevant codes of conduct					
	E2. Manage and apply safe systems of work					
	E3. Undertake engineering activities in a way that contributes to sustainable development					
	E4. Carry out and record CPD necessary to maintain and enhance competence in own area of practice					
	E5. Exercise responsibilities in an ethical manner					

ATOC Railway Engineering Graduate Scheme Handbook

Appendix F (2): Generic Competence Record Form - CEng

Name of Candidate	
Current Post	
Location of Work	
Date Record Completed	

Competence	Element	Level Achieved (tick)				Notes
		1	2	3	4	
A. Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging engineering technology	A1. Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology					
	A2. Engage in the creative and innovative development of engineering technology and continuous improvement systems					
B. Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems	B1. Identify potential projects and opportunities					
	B2. Conduct appropriate research and undertake design and development of engineering solutions					
	B3. Manage implementation of design solutions and evaluate their effectiveness					
C. Provide technical and commercial leadership	C1. Plan for effective project implementation					
	C2. Plan, budget, organise, direct and control tasks, people and resources					
	C3. Lead teams and develop staff to meet changing technical and managerial needs					
	C4. Bring about continuous improvement through quality management					
D. Demonstrate effective interpersonal skills	D1. Communicate in English with others at all levels					
	D2. Present and discuss proposals					
	D3. Demonstrate personal and social skills					
E. Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment	E1. Comply with relevant codes of conduct					
	E2. Manage and apply safe systems of work					
	E3. Undertake engineering activities in a way that contributes to sustainable development					
	E4. Carry out and record CPD necessary to maintain and enhance competence in own area of practice					
	E5. Exercise responsibilities in an ethical manner					

ATOC Railway Engineering Graduate Scheme Handbook

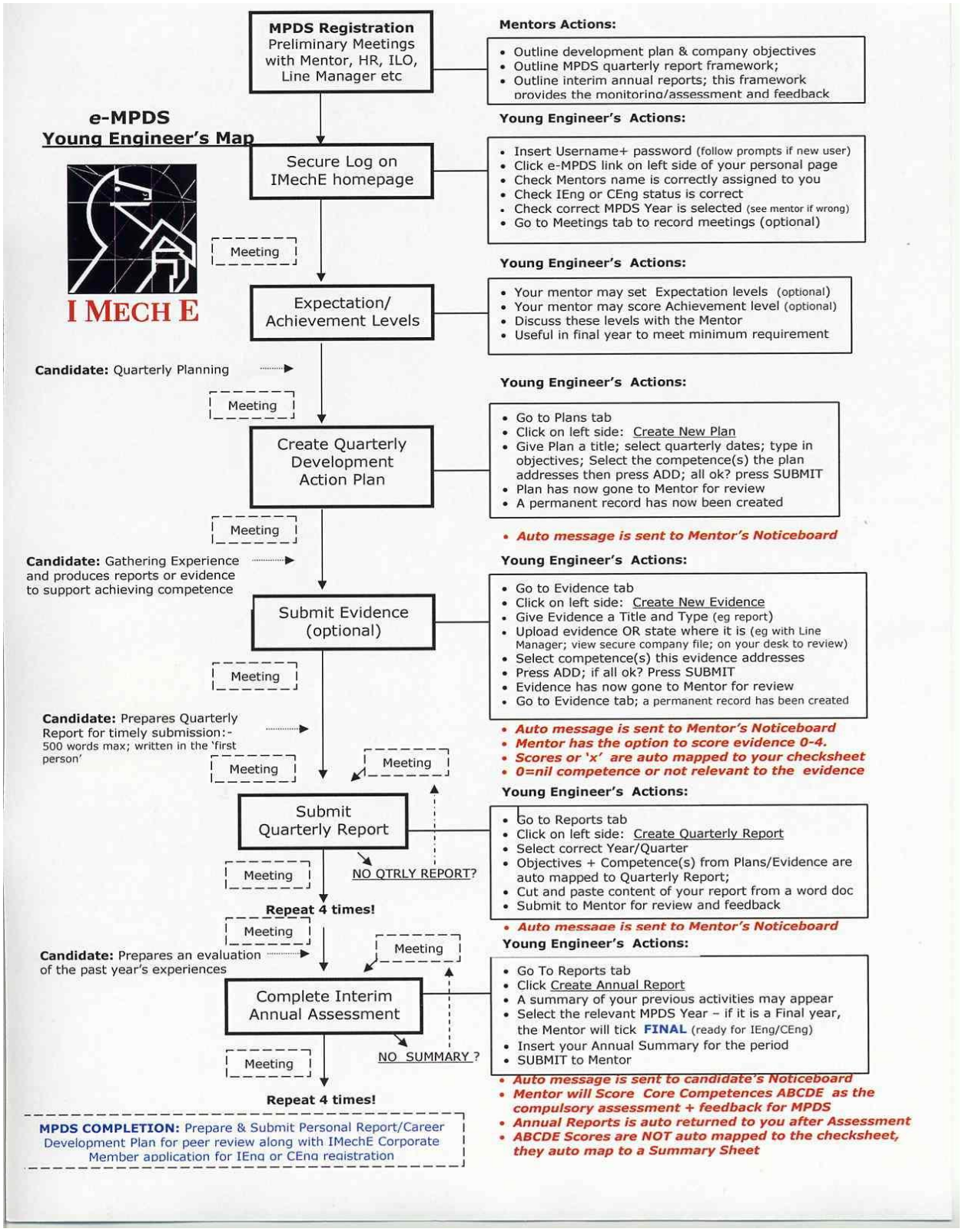
Appendix F (3): Competence Level Definitions to be used in the ATOC Railway Engineering Graduate Scheme

Level	Summary	Definition
1	Awareness	Performs the activity with significant supervision and guidance. Performs basic routine and predictable tasks. Little or no individual initiative. This level of competence would not be sufficient for the candidate to progress an application for Professional Registration.
		Summary:- Only basic ability
2	Minimum	Performs the activity in a range of contexts. Competent but requires guidance. Supervision and guidance required, particularly in more complex circumstances. Some individual responsibility or autonomy. This is the minimum level of competence for a candidate seeking Professional Registration. It should be supplemented by higher levels of competence in the areas most relevant to the field of engineering in which the candidate is employed.
		Summary:- Competent but needs guidance from a superior
3	Normal	Fully competent in the activity identified. No guidance required. Performs the activity in some complex and non-routine contexts. Significant responsibility and autonomy. Can oversee the work of others. This is the normal level of competence required by candidates seeking Professional Registration.
		Summary:- Fully Competent in the specified area
4	High	Performs the activity in a wide range of complex and non-routine contexts. Wide impact on the business. Substantial personal autonomy. Able to develop other staff in the activity. This indicates a high level of competence and suitability for election to Fellowship of the Institution.
		Summary:- Exceptional performance in the specified area

ATOC Railway Engineering Graduate Scheme Handbook

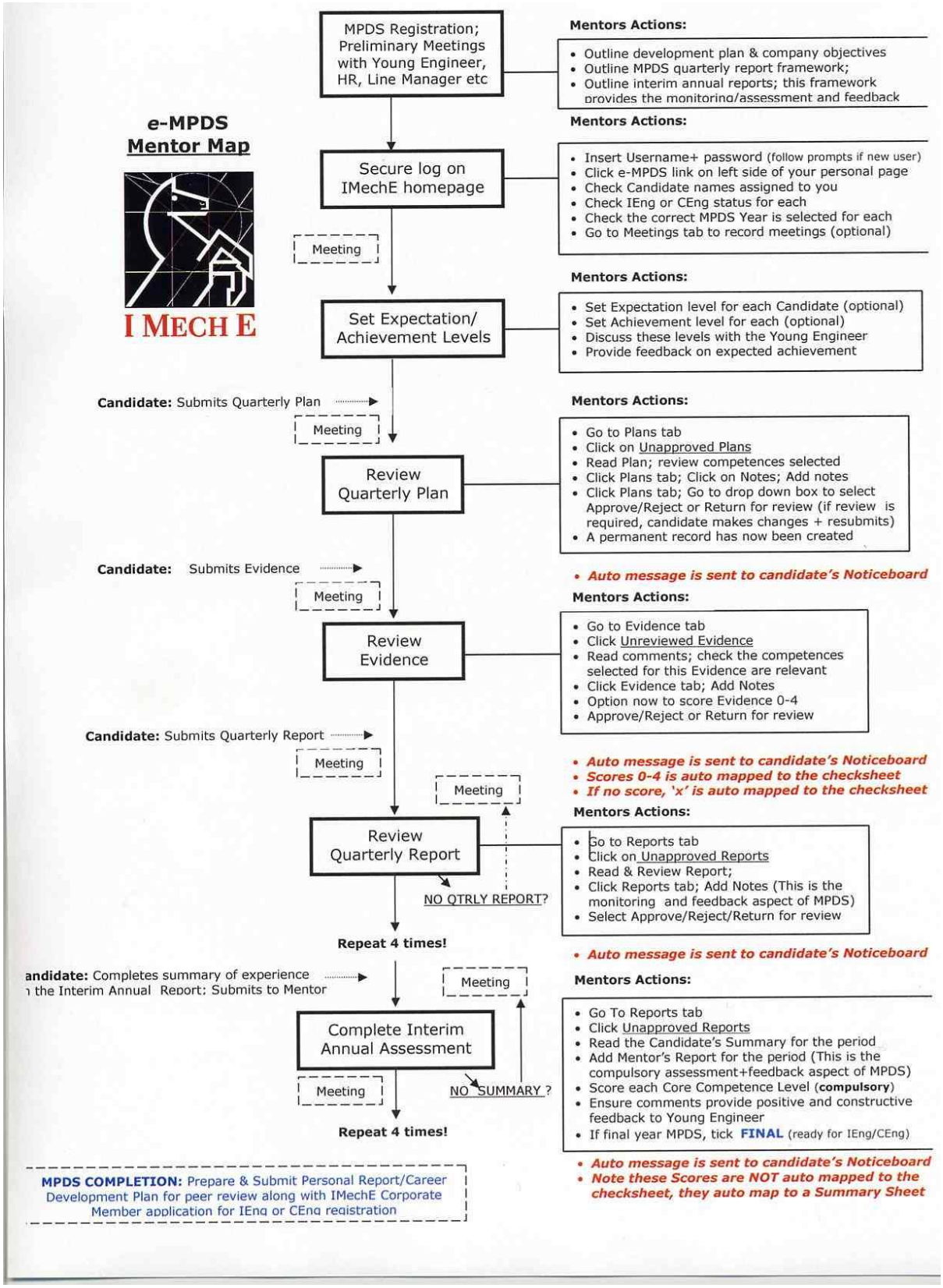
Appendix G: IMechE e-MPDS Guidance

1. Trainee Guide



ATOC Railway Engineering Graduate Scheme Handbook

2. Mentor Guide



ATOC Railway Engineering Graduate Scheme Handbook

Appendix H: Universities Offering Accredited Degrees

Please note that this appendix is offered as guidance only. In assessing whether a degree is accredited it is necessary to check the entry year of the degree and refer to the Engineering Council, IMechE or IET to verify the situation. Link is http://www.engc.org.uk/education-skills/course-search/acad/

University	Mechanical Engineering Degrees		Electrical Engineering Degrees	
	BEng	MEng	BEng	MEng
Aberdeen	√	√	√	√
Anglia Ruskin			√	
Aston			√	√
Bath	√	√	√	√
Birmingham	√	√	√	√
Birmingham City	√		√	
Blackpool & the Fylde			√	
Bradford			√	√
Brighton	√	√	√	√
Bristol	√	√	√	√
Brunel	√	√	√	√
Cambridge		√		√
Cardiff	√	√	√	√
Central Lancashire	√			
City	√	√	√	√
Coventry			√	
Dundee			√	√
Durham	√	√	√	√
East Lancashire			√	
East London			√	
Edinburgh	√	√	√	√
Essex			√	
Exeter	√	√	√	√
Glamorgan	√		√	√
Glasgow	√	√	√	√
Glasgow Caledonian	√		√	

ATOC Railway Engineering Graduate Scheme Handbook

University	Mechanical Engineering Degrees		Electrical Engineering Degrees	
	BEng	MEng	BEng	MEng
Greenwich			√	
Heriot-Watt	√	√	√	√
Hertfordshire	√	√	√	
Huddersfield	√	√	√	√
Hull			√	√
Imperial	√	√	√	√
Kent			√	
King's College London	√	√	√	√
Kingston-upon-Thames	√	√	√	
Lancaster	√	√	√	√
Leeds	√	√	√	√
Leeds Metropolitan			√	
Leicester	√	√	√	√
Leicester de Montford			√	
Liverpool	√		√	√
Liverpool John Moores	√		√	
Loughborough	√	√	√	√
Manchester	√	√	√	√
Manchester Metropolitan	√		√	
Napier			√	
Newcastle on Tyne			√	√
North Highland, Thurso			√	
Northumbria	√		√	√
Nottingham	√	√	√	√
Oxford		√		√
Oxford Brookes	√	√	√	
Plymouth	√		√	
Portsmouth	√	√	√	√
Queen Mary, London	√	√	√	√

ATOC Railway Engineering Graduate Scheme Handbook

University	Mechanical Engineering Degrees		Electrical Engineering Degrees	
	BEng	MEng	BEng	MEng
Queens, Belfast	√		√	√
Reading			√	√
Robert Gordon	√	√	√	√
Salford	√	√		
Sheffield	√	√	√	√
Sheffield Hallam	√	√	√	
South Bank, London			√	
Southampton	√	√	√	√
St Andrews Dundee			√	√
Strathclyde	√	√	√	√
Surrey	√	√	√	√
Sussex	√	√	√	√
Ulster Jordanstown	√	√	√	√
University College, London	√	√	√	√
Wales, Bangor			√	√
Wales, Swansea	√	√	√	√
Warwick	√	√	√	√
West of England, Bristol	√	√	√	
Westminster			√	√
York			√	√

ATOC Railway Engineering Graduate Scheme Handbook

Appendix I: EDT - Year In Industry Contacts

Area	Location	Contact Details	TOC(s)
Scotland	Glasgow	Meg Wright – Regional Director University of Strathclyde Dept of Mechanical Engineering Room M659, James Weir Building 75 Montrose Street Glasgow G1 1XJ 0141 548 2845 scotland@etrust.org.uk	ScotRail
North,	Salford	Charity Watkins EDT– North Technology House Salford University Business Park Lissadel Street Salford M6 6AP 0161 278 2497 north_west@etrust.org.uk	TPE Merseyrail Northern Virgin East Coast
Midlands	Birmingham	Geoff Jellis – Regional Director EDT – Midlands & Wales Room C31 Coates Building The University of Nottingham University Park Nottingham NG7 2RD 0115 951 6688 g.jellis@etrust.org.uk	East Midlands DB Schenker London Midland
South East	Southampton	Gennie Franklin – South East Regional Director Year In Industry, Southern Area, University of Southampton, SOUTHAMPTON SO17 1BJ 023 8059 2430 south@etrust.org.uk	ATOC Chiltern Eurostar Freightliner GTR London Overground Network Rail Greater Anglia South Eastern Southern SWT
South West	Plymouth	Charity Watkins – Regional Director EDT – South West Tamar Science Park 1 Davy Road Derriford Plymouth PL6 8BX 01752 762 111 southwest@etrust.org.uk	GWR

ATOC Railway Engineering Graduate Scheme Handbook

Appendix J: List of Mentors

COMPANY	NAME
Abellio Greater Anglia	Iain Burnett
Abellio Greater Anglia	Steve Mitchell
ATOC	Bryan Donnelly
ATOC	Dave Polhill
ATOC	Mark Molyneux
ATOC	Peter Theobald
Chiltern Railways	Jenny Smith
Chiltern Railways	Matt Prosser
Chiltern Railways	Simon Jarrett
Chiltern Railways	Tony Bobbin
CH2M Hill	Rigby Wason
Consultant	Allan J Jones
Consultant	Andy Cope
Consultant	Graham Roberts
Consultant	Ian Kay
Consultant	John Barlass
Consultant	Mike Corbett
Consultant	Peter Wallace
Consultant	Rebeka Sellick
Consultant	Steve Rees
Consultant	Sue Quick
Consultant	Tim Dugher
Consultant	Tony Brown
Consultant	Tony Wrighton
Crossrail	Phil Hinde
East Midlands Trains	Mark Coney
East Midlands Trains	Nigel Yule
Eurostar	Iain MacNaughtan
Eurostar	Jeff Ward
Eurostar	Pat McNamara
Eurostar	Ray Grief
Eversholt Rail	John Redyhoff
First Bus	Mark Munday
First Group	Neil Drury
First Group	Nick Hortin
First Group	Richard Elwen
First Group	Robin Kay
Freightliner	Andy Jeffrey
Freightliner	Tim Gabb
Freightliner	Tim Shakerley
Glasgow Subway	Eileen Russell

ATOC Railway Engineering Graduate Scheme Handbook

Govia Thameslink Railway	Frazer Stirling
Govia Thameslink Railway	Iain Nairne
Govia Thameslink Railway	Jonathan McEwan
Govia Thameslink Railway	Simon Green
Grand Central	Dave Hatfield
Great Western Railway	Andrew Skinner
Great Western Railway	Andy Mellors
Great Western Railway	Rishi Ravindran
London Midland	Andy Bell
London Midland	Tim Moss
Midland Metro	Ben Ackroyd
MTR Crossrail	David Payne
MTR Crossrail	Kev Jones
Network Rail	Ben Woods
Network Rail	Femi Okeya
Network Rail	Jon Plowright
Network Rail	Jonathan Barlow
Network Rail	Neil Barnatt
Northern Ireland Railway	Ian Campbell
Northern Rail	Huw Davies
Northern Rail	Nick Donovan
Ricardo	Nafisah Aslam-Zainudeen
Ricardo	Paul Seller
RSSB	Graham Nicholas
Scotrail	Jeff Doherty
Siemens	Tom Lawrence
SNC Lavalin	Graham Turl
South Eastern	Gavin Fuller
South Eastern	Steve White
South West Trains	Kate Marjoribanks
Stagecoach	Tim Sayer
Transpennine Express	Stacy Thundercliffe
Tyne & Wear Metro	Louise Shaw
Virgin Trains West Coast	Andrew James
Virgin Trains West Coast	Michel Jacks
Virgin Trains West Coast	Phil Bearpark

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Appendix K: ATOC staff profile

Job Description

Job Title ATOC Scheme Advisor

Purpose of Job

Advise Scheme members on Undergraduate/Graduate recruitment.

Advise the REGS Steering Group on Development of Training Policy.

Project manage the development of the ATOC MPDS scheme.

Present the scheme to the appropriate Institution's for Accreditation/re-accreditation.

Principal Accountabilities

1) Advise Scheme members in respect of Graduate Engineer recruitment.
2) Advise on the development of Scheme member's placement programmes in conjunction with the Mentors.
3) Advise on training arrangement's for Mentors.
4) Lead Scheme Review Meetings with each TOC to ensure that they meet the requirements of the REG Scheme recommending corrective actions where necessary.
5) Produce and present progress reports about the scheme to all interested parties;
   - ATOC
   - Scheme members
   - Engineering Institutions
6) Liaise on a regular basis with the ATOC Engineering Support Manager.

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Appendix L: Buddy Description

1	**Introduction**	
	Once allocated, contact your new graduate and offer help and support. Share contact information. Set up initial meeting with new graduate to discuss your experience on the REG Scheme. Advise on how best to take advantage of courses, induction and REGS conference, etc. Encourage attendance at IMechE and IET railway events, lectures etc. Show how to get help from Mentors, Line managers and Scheme Advisor. Q & A.	
2	**Continuous Support**	
	Support new graduate with any questions they may have regarding the scheme or the railway in general. Encourage new REGS graduate to look at optional events and courses within the REG scheme. Help new graduate network with other graduates on the REG Scheme.	
3	**Feedback**	
	Consider how to support your Graduate going forward and if appropriate contact the Scheme Advisor and/or Scheme Coordinator with appropriate feedback.	

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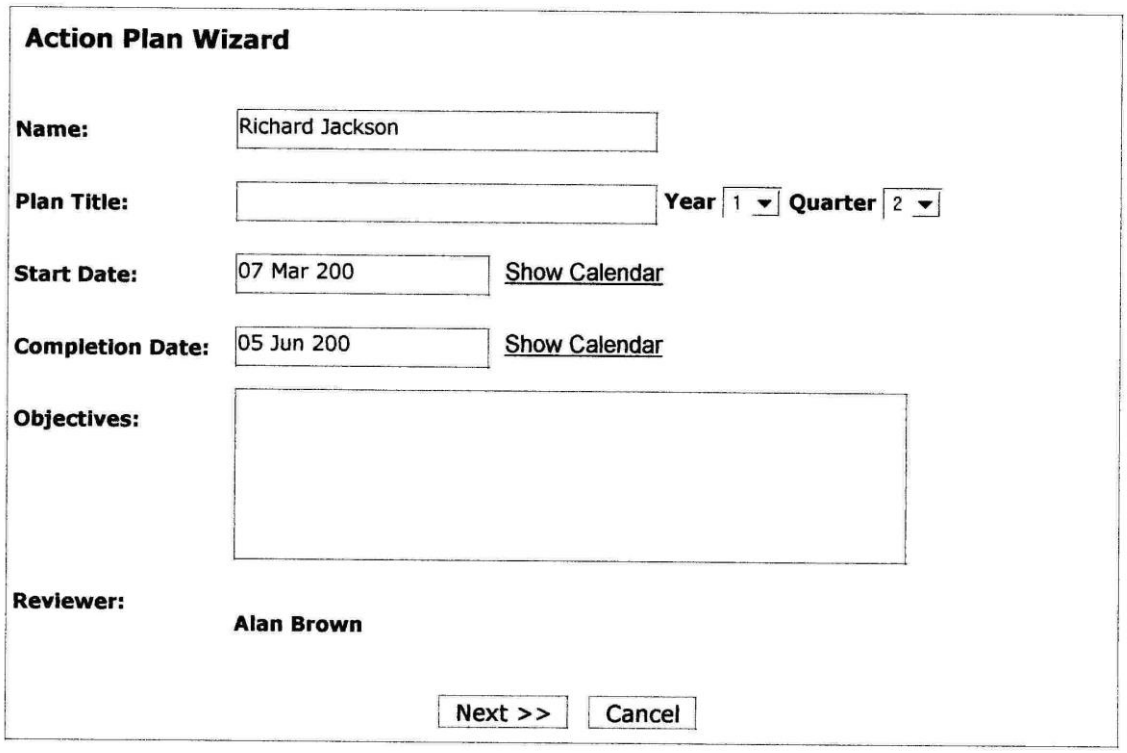
Appendix M: e-MPDS Sample Screens

1. Action Plan



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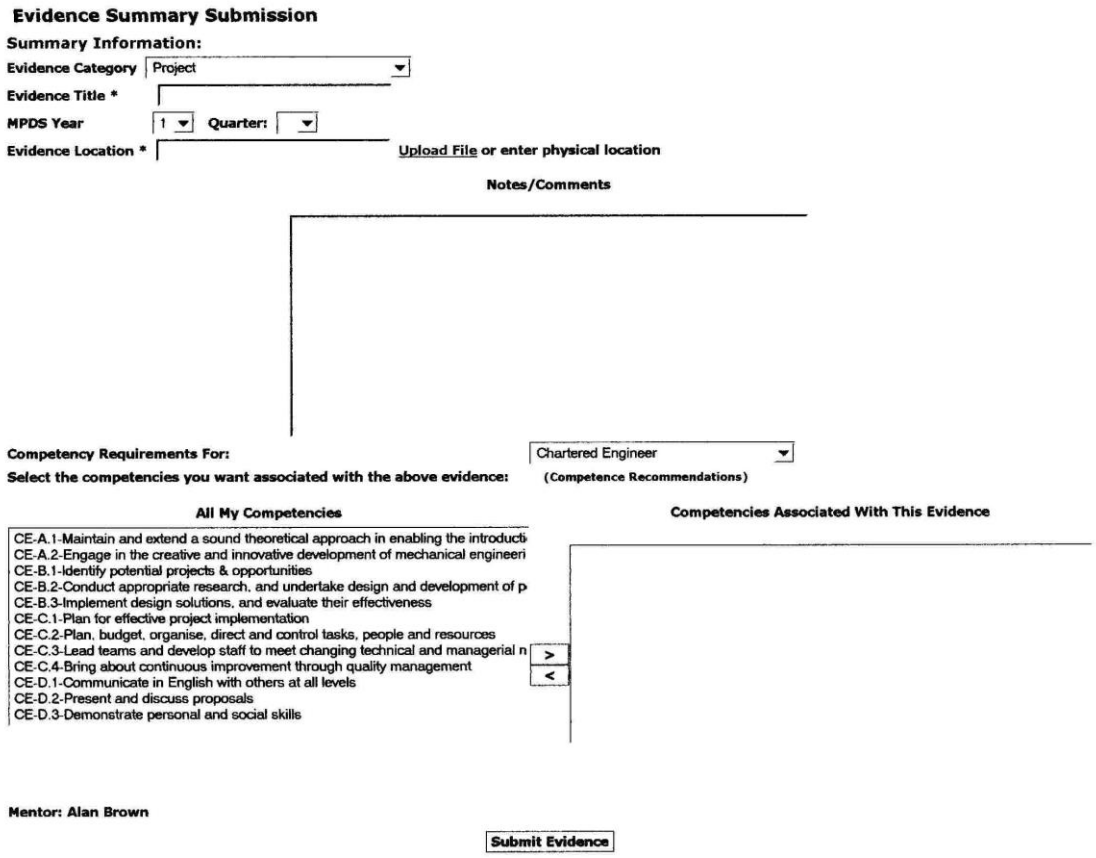
2. Evidence Submission



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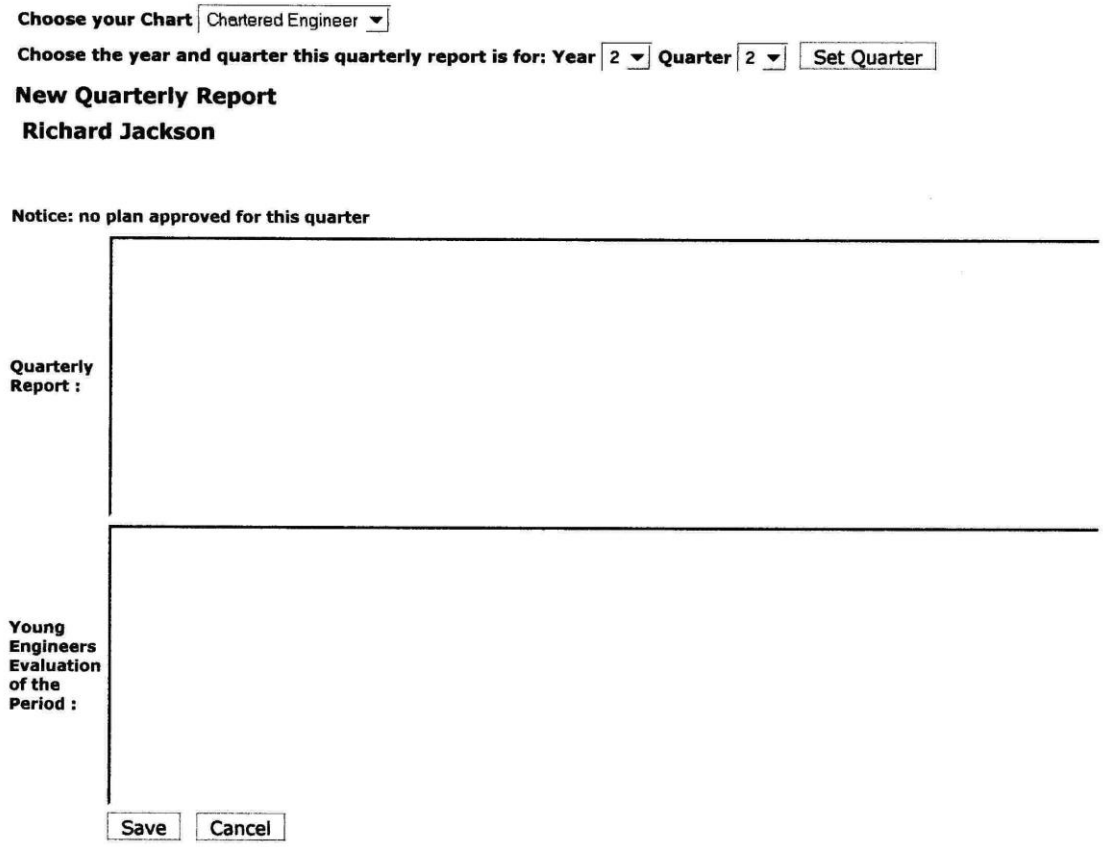
3. Quarterly Report



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4. Sample Check Sheet summarising Submitted Evidence scores

Institution of MECHANICAL ENGINEERS

Improvi[illegible] the world through engineering

(8023[illegible]

View as PDF

Status description:

✔ Not Assessed | 0 | Not addressed | 1 | Aware | 2 | Familiar | 3 | Skilled | 4 | Expert

Year / Period	Title	A.1	A.2	B.1	B.2	B.3	C.1	C.2	C.3	C.4	D.1	D.2	D.3	E.1	E.2	E.3	E.4	E.5
Year 3																		
Quarter 2	Evening lecture	3		2	2												3	
Quarter 2	Sub group presentation	3			3						3	3	3	3				
Quarter 1	Re-traction press release	3	3	3	3	3	3	2	2	3	3	3	3					
Quarter 1	Generic Risk Assessment													2	2			2
Year 2																		
Quarter 4	Technical Memorandum	3	2		3	3					3	3		3		2		3
Quarter 3	Line Manager Report	2	2	2	2		2	2	2	2	3	2	2	2	2		2	2
Quarter 2	Commutator Profile Report	2	2								3	2	2		2	2	2	
Quarter 1	Assurance Work				2						3	3	3	2	2	2	2	2
Quarter 1	Cl.170 Doors	2	2		2						3							
Quarter 1	Cl.57 Wheel Scrapping	2	2		2	2					3	3		2		2		
Quarter 1	Line Manager Reports	2	2		2	2	2	1		2	3	3	2	2	2	1	2	2
Quarter 1	NDT Weld Audits	2									3		3	2	2		2	2
Year 1																		
Quarter 4	IMechE certificates	2	✔	✔	✔	✔					✔	✔	✔					
Quarter 3	ATOC Depot Guide	2	2	✔	✔	✔			✔	✔	2	2	✔	2	2	✔		✔
Quarter 3	Generic Weibull from bid work	2	2	2	2	✔					2	2	✔	✔	✔		✔	
Quarter 3	Line Report	2	2	2	2	2	2	1			2	2	2	2		2		
Quarter 2	Formal Training (Depot and PTS)										2		2	2	2		2	
Quarter 2	GE Transportation	1	1		1	1	1	1			2	2	2	2		1		

ATOC Railway Engineering Graduate Scheme Handbook

Appendix N: Monitoring Visit Record Form

TOC		**Date of Review**		
Trainee	**Post**	**Location**	**Mentor**	**eMPDS**
Others present:				

No	Check	No	Yes	Score
1	Is there an agreed training programme?	0	5	
	Have hand and machine tool skills been covered satisfactorily?	0	5	
	Is the programme being achieved?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
2	Are line manager reports up to date?	0	5	
	Are reports constructive / appropriate?	0	5	
	Are trainee comments included?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
3	Is candidate registered correctly on e-MPDS?	0	5	
	Are draft quarterly reports being submitted promptly?	0	5	
	Are annual reports being completed promptly?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
4	Has a trained mentor been allocated?	0	5	
	Are mentor meetings diaried and taking place quarterly?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
5	Has trainee achieved / is expecting to achieve Accredited Degree?	0	5	
	Is Degree at required level and/or is Further Learning planned?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
6	Is a Competence Monitoring Record System in use?	0	5	
	Does process include trainee / mentor carrying out assessment six monthly?	0	5	
	Is competence achievement profile satisfactory?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
7	Are arrangements for Management Training in Place?	0	5	
	Are courses proposed/undertaken at suitable standard?	0	5	
	Adjust if actions are in place to resolve issue: award 0 to 3			
8	Quality and relevance of training / work experience undertaken.	score 1 to 10		
	TOTAL			

No	Corrective Actions	Target timescale	Complete

Notes

Next review date

ATOC Railway Engineering Graduate Scheme Handbook

Appendix O: Sample Training Objectives

The training objectives listed below have been prepared to assist line managers and mentors arranging training to focus on the main requirements. They should not be taken as a definitive list of objectives, but used as a basis for formulating targets for candidates prior to undertaking particular training placements. It is recommended objectives be prepared related to the trainees individual development needs, drawn as needed from the lists provided and with further relevant objectives added.

Hands-on maintenance practice (6 - 8 weeks)	
•	To form relationships with the workforce and become accepted as part of the team.
•	Work on shop floor with fitters and/or technicians to gain an understanding of a range of maintenance practices.
•	To physically assist in the maintenance of units and gain knowledge of how components and systems work and interact.
•	To experience the full shift pattern operated by a TOC and the impact this can have on productivity.
•	To gain first hand knowledge of the communication between management and the shop floor.
•	To understand the resources and processes involved and how they have an effect on production.
•	To give a critical assessment of what has been observed during the placement.
•	To understanding the systems and procedures in place and why they are there.

Maintenance Management (6 - 10 weeks)	
•	Gain an appreciation of the financial impact of planning decision.
•	Understand how maintenance management affects quality.
•	Gain an appreciation of how the content of maintenance documents and standards are communicated to staff.
•	Undertake risk assessments relevant to maintenance planning.
•	Experience the skills needed in successful management of people.
•	Understand manpower allocation.
•	Carry out production planning for both normal and abnormal circumstances considering all of the following aspects: – Balanced exams – Shunting – drivers, etc – Scheduling of work – Availability requirements – Stores – stock levels, lead times – Software – XV, Ravers, Baan, Equinox, SAP, etc – Records, Audit Trail
•	Understand the relevance and application of Quality Processes to Maintenance Management including the relevance of ISO 9001.

ATOC Railway Engineering Graduate Scheme Handbook

Technical investigations and engineering standards (9-12 weeks)	
•	Gain an understanding of the engineering characteristics of the fleet operated by the Train Operating Company.
•	Research and understand the main failure modes of the fleet which affect the performance of the trains in service.
•	Prepare and present a report to include: – failure modes – trends
•	Identify possible solutions for reliability improvement and evaluate examples where revised design is required, obsolescence of equipment, maintenance quality or a revised maintenance schedule / specification is required. Evaluate to establish best solution.
•	Prepare and present an engineering change document to show understanding of the process.
•	Conduct a study into the regulations that govern the railway industry.

Project engineering (4 - 8 weeks)	
•	Understand the issues to be considered when planning a project.
•	Understand the aims and benefits of the project (problem to be solved).
•	Understand the scope of the project, including stakeholders.
•	Understand the issues involved in planning the project (resource, risk management etc).
•	Understand the effect of budgetary and time constraints on the project plan.
•	Understand the relationships needed to deliver a project.
•	Understand the tools used to manage and execute the project (PCA, milestone slippage chart, Red Amber Green reporting).
•	Understand the purpose of project review for continuous improvement.
•	Apply a Systems Engineering approach to Project Management
•	Develop techniques for meeting output deadlines.

Vehicle build and/or Main Works Experience (6 -10 weeks)	
•	Gain appreciation and a practical understanding of the composition and make up of a rail vehicle.
•	Gain understanding of the processes involved in project and maintenance planning.
•	Understand design issues within new build and refurbishment.
•	Understand the interactions involved for successful supply chain management.
•	Participate and document different engineering and fabrication techniques.
•	Document the different cultures, attitudes and philosophies between maintenance depots and new build/main works.
•	Use the opportunity to study one of more vehicle systems in circumstances when components are more than usually accessible.

ATOC Railway Engineering Graduate Scheme Handbook

Engineering Design (10 – 15 weeks)	
Please Note. Special attention is needed in regard to the Engineering Design placement. For candidates who have not previously worked in a design office, the full 15 weeks (or more) should be allocated. The importance of this experience relates primarily to the development of competences 'A' covering the use of engineering fundamentals. Once the preferred location for the placement has been determined, a meeting with the design company should be set up. The candidate and their mentor should attend and, if requested, ATOC will be represented. Line managers should be invited if appropriate. The placement should be timed so as to gain the maximum experience for the individual. Opportunities should be exploited and, wherever possible, an actual piece of engineering design work should be undertaken, with suitable supervision or guidance. The outcome of these placements will be reviewed at the regular REGS 6-monthly meetings and if insufficient benefit has been gained, it may be necessary to programme some additional time.	
•	Gain a good understanding of the capabilities of Computer Aided Design equipment and software.
•	Understand material selection as part of the design process.
•	Design for compliance (understand the approval process).
•	Understanding customer requirements.
•	Design for sustainability, maintenance and obsolescence.
•	Practice the application of engineering theory.
•	Understand design concepts and processes.
•	Evaluate design and implications.

Financial management appreciation (2 - 4 weeks)	
•	Understand the data flows between engineers and the finance department.
•	Basic financial understanding (if required).
•	Organisation of finance department (who does what).
•	Principal systems, processes and controls.
•	Budgets: – What goes into the engineering budget – How the engineering budget fits into company budget.
•	Business/investment planning - what goes into it and understanding of it.
•	Appreciation of train financing.

Commercial appreciation (2 - 4 weeks)	
•	Understand the elements which need to be included in a maintenance contract.
•	Understand the impact of maintenance on service provision and costs.
•	Understand the role of Rolling Stock Leasing Companies (RoSCos), lease types and implications for service quality and maintenance.
•	Understand the role of suppliers and contracts.

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•	Understand the role of Network Rail and track access on service provision.
•	Examine methods of revenue collection and protection.
•	Understand the end-users view of the service provided.
•	Gain an appreciation of the 'Big Picture' including Budgets, Utilities bills/rent, Procurement, HR, and how it all comes together.

Operations appreciation (2 - 4 weeks)	
•	Study the conditions of service of operations staff.
•	Observe drivers at work and understand how driving standards are maintained. Develop an understanding of train driving to gain an appreciation of the relationship between the engineering and operational imperatives.
•	Visit both modern and mechanical signal boxes to understand the fundamentals of signalling and control systems which ensure safe operation of trains.
•	Study the development of European Railway Traffic Management System (ERTMS), attending any appropriate courses or seminars and arranging a visit to observe the system in operation, wheresoever that may be.
•	Understand the role of safety with respect to communications.
•	Understand the relationship of performance success/failure on customers.
•	Appreciate geographical/infrastructure restrictions on running trains.
•	Observe key issues/challenges to the organisation and possible areas for improvement.

Infrastructure appreciation (3 weeks)	
•	Understanding the infrastructure maintenance tasks performed by maintenance engineers and production gangs in daily operation – Participating hands-on all tasks where possible. (Nights/weekends)
•	Understanding the functions and operations of various rail track maintenance machines (Tamper machine, rail grinder machine, stoneblower etc.)
•	Work with Signal Maintenance Engineers to gain an appreciation of the interface risks and maintenance challenges
•	Work with OLE or Power Supply Maintenance Engineers to appreciate the interface issues, isolation procedures and maintenance challenges
•	Understanding the process of maintenance planning/management and the governing factors taken into consideration in all processes.
•	Understand the organisation structure of a Network Rail Delivery Unit.
•	Conduct a study into the effects of Rolling Contact Fatigue on maintenance delivery.

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Train Driving Experience (2 weeks)	
Pre-conditions. Candidates for this course must have had a minimum of 6 months experience of railway engineering, and have completed the shop floor hands-on maintenance placement. They must have also visited a signal box and understand the basics of railway signalling, and be in possession of a PTS qualification.	
•	Study the preparation and disposal requirements of diesel electric locomotives.
•	Study brake systems in use on main line locomotives including air and vacuum train brake controls.
•	Undertake practical experience of coupling and uncoupling.
•	Gain driving experience of a main line diesel electric locomotive under supervision, both light engine and hauling a train.
•	Understand the operation of block signalling and undertake signal box operation under supervision.

Institution and Professional Activities	
Note that these activities should be undertaken during each of the first two years of training, and then ongoing as part of CPD throughout your engineering career.	
•	Attend Institution evening meetings in the relevant locality (these are usually free) to enhance industry knowledge and to develop a network of professional contacts.
•	Write and present a paper at an Institution event.
•	Attend Institution and Industry seminars, meetings, conferences, and learned papers, obtaining sponsorship from Employer or Institution sources where possible.
•	Join an Institution committee so as to participate in these organisations, and take part in the organisation of events.

ATOC Railway Engineering Graduate Scheme Handbook

Appendix P: Book List

Title	Author	Publisher	In IMechE Library
All Change - British Railway Privatisation	R Freeman & J Shaw	McGraw Hill 2000	yes
BR Diesel Traction Manual for Enginemen		BR 1962	yes
BR Equipment and BR Equipment 2	David Gibbons	Ian Allan 1986 and 1990	yes
Carbon Brushes & Electrical Machines		Morganite Electrical Carbon Limited 1978	
Electric Motors and Drives	Austin Hughes	Newnes 2nd edition 1993	yes
Electric Traction	A T Dover	Pitman 4th edition 1963	yes
George and Robert Stephenson	L T C Rolt	Penguin Books 1960	yes
Locomotives & Coaching Stock	Published annually	Platform 5	
Modern Railways	Monthly periodical	Key Publishing	
Power Electronics	Mohan, Undeland and Robbins	John Wiley 2nd edition 1995	yes
Practical railway Engineering	C F Bonnett	Imperial College Press 1998	yes
Railway Engineering	V A Profillidis	Ashgate Publishing Ltd 2nd edition 2000	yes
Red for Danger	L T C Rolt	Pan Books 1966 republished recently	yes
Steam in the Blood	R H N Hardy	Ian Allan 1971	yes
The Essence of Electric Power Systems	J A Harrison	Prentice Hall 1999	yes
The Mechanicals	L T C Rolt	Heinemann 1967	yes
The Thyristor and its Applications	A W J Griffin and R S Ramshaw	Chapman and Hall 1965	
Two Miles a minute	O S Nock	Patrick Stephens Ltd 1980	
The Deming Philosophy	Michael Tveite	British Deming Association 1992-5	
Quality in Sales			
Learning and Leadership			
Out of the Crisis			
From Theory to Strategy			

ATOC Railway Engineering Graduate Scheme Handbook

Title	Author	Publisher	In IMechE Library
Engineering Money	Richard Hill and George Solt	Wiley (2010) ISBN 978-0-470-54601-7	
Planes, Trains and Automobiles: Why Men Love Things That Go By	Dan Kieran	John Murray (2009) ISBN: 978-848540149	

ATOC Railway Engineering Graduate Scheme Handbook

Appendix Q: Trainee Feedback Form

TOC		**Date of Review**	
Trainee		**Mentor**	

Question	Trainee response	Comments
1. What has been your best training placement or work experience and why?		
2. Have you had any unsatisfactory training placements? Why?		
3. Were any changes made resulting from either 1 or 2 above?		
4. Any general comments you wish to make about your training		
Official use only		

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Appendix R: Steps to Registration - Diagrammatic representation

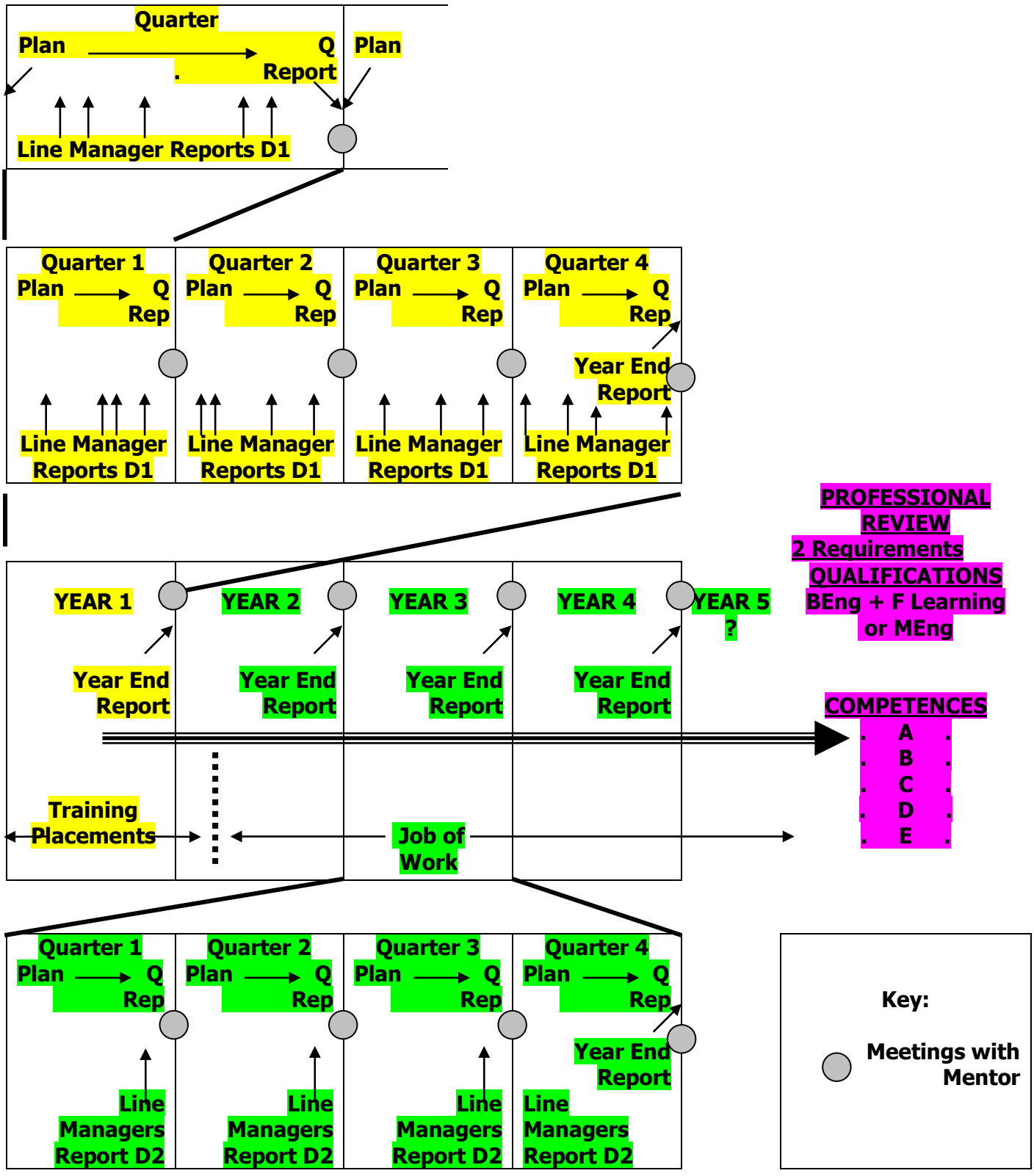

Chart 2 © Highfield Engineering

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Appendix S: Professional Review Advice

Those approaching the end of the scheme and who are preparing for their 'Professional Review' are advised to note the following points. These have been obtained from the IMechE and similar advice is relevant to IET candidates.

Preparing for Professional Review - Interview

1 Submit your application form, completing all the sections and obtaining signatures of your two sponsors, one of whom is usually your Mentor

2 Prepare a check list of the examples you plan to raise at interview, under each of the 5 competences.

3 Prepare for your interview:

Take a copy of your application documents with you.

The interview is about your role, your responsibilities, your experience and your expertise. You will have 45 minutes in the interview, and you are expected to do 70 to 75% of the talking.

The first question will almost certainly be, "tell me about yourself..." To answer this, prepare a 2-minute (max) speech describing yourself, your background and your role, providing information to allow the interviewers to gain an overview of your competences A B C D and E. Think about the job you do. This will almost always be covered in the first question. A strong first answer will help your confidence.

Answer any supplementary questions asked.

Take supporting evidence such as technical drawings, sketches, calculations, photographs or artefacts which will help to illustrate your competence examples.

Don't work from a script!

Be smart: wear a suit and prepare as you would for a job interview. Arrive early.

Posture: Look interviewer in the eye, don't fiddle with your hands, or put your chin in your hand, speak clearly; don't mumble or put your hand in front of your mouth.

Use your checklist of points that you plan to cover at the end of the interview. If you didn't discuss something relevant, raise it before the end of the interview.

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Preparing for Professional Review – Competence assessment

Competence A – Knowledge and Understanding of Engineering Principles	Describe a situation where your technical expertise made a significant difference.
Competence B – Application of Engineering Principles	Give an example when you initiated a change in a process or operations. Describe a time when you applied a new piece of technology to an existing task; what were the benefits and how did you determine there would be a benefit?
Competence C – Technical and Commercial Leadership/Management	Give an example of a decision that was made in your area that had an adverse impact on another area or department. Describe a time when you utilised your leadership ability to gain support for something that was initially strongly opposed by others.
Competence D – Effective interpersonal skills	Describe the most difficult or complex idea, situation or process you have ever had to explain to someone. How did you explain it, were you successful? Describe a situation where you made a compromise for the good of the team, what was your role, what steps did you take?
Competence E – Commitment to Professional Standards, society and the environment	Give an example of how you have taken control of your career. Give an example of how your understanding of a community issue helped you address a business problem, issue or concern.

ATOC Railway Engineering Graduate Scheme Handbook

Preparing for Professional Review – Interviewers Check Sheet

Introductions	You are encouraged to give a very brief introduction yourself.
Demonstrate their Competence in areas A to D	Invite applicant to talk about current job, role and responsibility and illustrate with a specific engineering project. You may wish to use questions such as: Describe a project the applicant has been involved in which has given the greatest challenge or most job satisfaction. Demonstrate how the applicant has deepened and/or broadened their knowledge and understanding during your career since graduation. Describe how the applicant has extended their knowledge of other related disciplines and/or involvement in multi-disciplinary projects.
Professional Conduct and Commitment	The applicant should have an understanding of codes of conduct and an awareness of relevant legislation – health, safety, environmental in the country they work in. This may become clear from the previous discussion. Ask for examples of their contribution to the development of young engineers or the promotion of engineering – this is not a requirement but may support their application if achieved.
Development Action Plan for future Continuing Professional Development – mandatory under UK-SPEC	Seek evidence of applicant's commitment to CPD using questions such as: Can the applicant influence it? How do they see themselves developing in the medium to long term?
Closure	Invite applicant to add anything which has not been covered and is viewed as important

ATOC Railway Engineering Graduate Scheme Handbook

Appendix T: Mentor Check list

Candidate		**TOC**	
Date commenced		**Mentor**	

As an aid to mentoring, this check list is offered for Mentors and Candidate to enable easy monitoring of review meetings and progress.

Initial Review

Ref	Activity	Planned Date	Actual Date
1	Are you, the Mentor, registered as a Mentor with the appropriate Institution?		
2	Does the Candidate have Institution Membership?		
3	Has the Candidate applied to the IMechE for registration under MPDS? (Note IET Members must also become Affiliates of the IMechE to enable the use of e-MPDS).		
4	Establish whether the Candidates Academic achievements are relevant for IEng or CEng Registration.		
5	If Further Learning is needed, establish how this will be treated by the Candidates employing organisation.		
6	Establish whether the Candidate has previously completed years of MPDS (with another company) so as to establish the start year under the scheme.		
7	Establish whether the Candidate has any other previous industrial experience and discuss whether to apply for an exemption under MPDS.		
8	Discuss hand and machine tool experience with the Candidate and establish whether this has already been covered or whether further training is needed.		

	Quarterly Reviews - Activity	Year 1		Year 2		Year 3	
		Planned Date	Actual Date	Planned Date	Actual Date	Planned Date	Actual Date
Q1	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q2	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss Candidate's assessment of competence and decide agreed levels.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q3	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q4	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss Candidate's assessment of competence and decide agreed levels.						
	Complete and submit annual report to the Institution via e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						

	Quarterly Reviews (continued) - Activity	Year 4		Year 5			
		Planned Date	Actual Date	Planned Date	Actual Date		
Q1	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q2	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss Candidate's assessment of competence and decide agreed levels.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q3	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						
	Advise the candidate and assist in establishing the best development opportunities for the individual.						
Q4	Review draft Quarterly Report and line manager's report - usually submitted electronically - and return comments.						
	Meet candidate to discuss experience and sign off Quarterly Report on e-MPDS.						
	At meeting, discuss Candidate's assessment of competence and decide agreed levels.						
	Complete and submit annual report to the Institution via e-MPDS.						
	At meeting, discuss and agree objectives and competence targets for the next Quarter (optional on e-MPDS)						

Final Review

Ref	Activity	Planned Date	Actual Date
1	Meet the Candidate and together check that recorded evidence is complete and well understood.		
2	Establish whether Candidate can demonstrate competence levels to enable Registration as CEng or IEng. If not, defer application. (In this case continue to monitor quarterly as per the progress chart).		
3	Complete and submit final annual report to the Institution via e-MPDS.		
4	Encourage the Candidate to complete Registration Application form and, probably, act as one of the Candidate's sponsors. Assist in identifying other supporters.		
5	Prepare the Candidate for Professional Review Interview, seeking further advice and a Mock Interview if needed.		

Ongoing

6	After Registration is achieved, maintain contact with the Candidate during their further career.	
7	Encourage the Engineer to take up a Mentoring role, Institution activities or other work in support of their profession.	