6.2.1 Requirements - Engineering Workshop Competencies

It is a requirement that personnel working on engineering tasks on the South Tynedale Railway have the necessary engineering workshop competencies. These encompass a range of technical, safety, and operational skills, often validated through practical experience and professional standards. Examples include proficiency in manual machining operations, precision measurement, and compliance with health and safety regulations.

6.2.2 Arrangements - Engineering Workshop Competencies

The following are specific examples of engineering workshop competencies which are required on the South Tynedale Railway:

6.2.2.1 Technical Machining & Fabrication

- Milling, Turning and Drilling**:** Competently using centre lathes and drilling machines to produce parts and achieving fine tolerances.
- Welding and Fabrication: Joining materials, including MIG, TIG, or arc welding, and fabricating components from raw materials.
- Bench Fitting**:** Using tools such as files, hacksaws, and taps/dies to produce assemblies such as V-blocks.

6.2.2.2 Metrology & Inspection

- Precision Measurement**:** Using vernier callipers, micrometers, and surface tables to check parts against drawings.
- Quality Control**:** Conducting, inspecting, and testing engineering assets to ensure they meet specifications.

- Limits and Fits**:** Applying knowledge of tolerancing and bearing fitting during assembly.

6.2.2.3 Maintenance & Assembly

- Fault Diagnosis**:** Identifying and resolving faults in engineering assets through diagnostic methods.
- Assembly Skills**:** Utilizing sealing techniques and assembling components using proper tightening sequences and torque tools.
- Maintenance**:** Carrying out preventive and corrective maintenance on workshop machinery.

6.2.2.4. Safety & Compliance

- Safe System Operation
- Working within regulations such as COSHH (Control of Substances Hazardous to Health) and LOLER (Lifting Operations and Lifting Equipment Regulations).
- Permit to Work**:** Operating in compliance with formal safety permits and risk assessment protocols.
- Hazard Management**:** Identifying, mitigating, and reporting risks to health and safety.

6.2.2.5 Technical Communication & Digital Skills

- Drawing Interpretation**:** Reading and interpreting engineering drawings and technical diagrams.
- Digital Tools**:** Using analogue and modern digital measuring equipment.
- Documentation**:** Completing maintenance records, work instructions, and quality reports.

6.2.2.6 Engineering Workshop Skills and Training

Personnel working in the workshop or other areas requiring the use of hand tools or workshop machinery will be requested to complete a competency questionnaire.

The purpose of this questionnaire is to determine their level of experience using the tools and machinery listed. The information recorded by the volunteer will be reviewed and added to the competency matrix which is maintained by the STRPS Head of Engineering. The matrix indicates what machinery or personnel are familiar with and can operate safely.

Volunteers may have a mechanical background and be familiar with machines and tools. Others from a non mechanical or engineering background may have model engineering as a hobby and therefore have some experience of workshop equipment.

No volunteer will be asked to operate machinery or tools for which they have no training or experience. Their competence in each area will be determined from their answers on the questionnaire and will recorded on the skills matrix.

Should a volunteer request training on particular tools or workshop machinery, this will be provided at the discretion of the Head of Engineering and records of training conducted will be maintained.

The competency matrix will be posted in the workshop and on the notice board at the signing in/out desk at the entrance to the workshop.

The competency matrix will be reviewed on an annual basis by the Head of Engineering and amendments made as necessary.

6.2.3 Requirements - Permanent Way Competencies

Permanent Way (PWAY) competency involves the technical knowledge, skills, and safety-critical experience required to install, maintain and inspect railway track infrastructure, thus ensuring safety and reliability.

Core competencies include understanding track geometry, understanding the function and operation of permanent way (rails, sleepers, ballast etc), points & crossings and adherence to safety standards both while work is being carried out and when it is in operational use.

6.2.4 Arrangements - Permanent Way Competencies

6.2.4.1 Key Components of Permanent Way Competency

- Safety & Compliance**:** A paramount focus on safe systems of work and trackside safety and responding to emergency situations during the course of works.
- Technical Skills**:** Ability to inspect, maintain, and repair plain line and points & crossings.
- Knowledge Areas**:** Understanding track components, track bed structure, track geometry, drainage, structures (bridges/tunnels, culverts, level crossings etc)
- Practical skills: Use of hand tools, machinery and welding.
- Roles and Responsibilities**:** Competencies for specific roles like PICOP, Responsible Person, Track Gang Leader etc.
- Assessment: Competence validated through training, experience, and formal certification (e.g., Railway Engineering Institution (REI) or Network Rail standards).

6.2.4.2 Training & Certification (UK Focus)

- Introduction to PWAY**:** Basic understanding of track construction, maintenance, and renewals.
- Track Inspection: Skills required for patrolling and identifying defects.
- Hot Weather Patrolling**:** Specific monitoring of track to prevent buckling.
- Professional Recognition: The REI provides competency criteria for Engineering Technician (EngTech) and higher levels.

6.2.4.3 Key Competencies Required:

- Understanding of Track Components**:** Rails, fasteners, sleepers, and ballast.
- Track Geometry Knowledge**:** Gauge, alignment, level, and twist.
- Maintenance Skills**:** Identifying defects and performing repairs.
- Safety Critical Knowledge**:** Personal Track Safety (PTS) and Safe System of Work (SSOW).

6.2.5 Appendices

6.2.5.1 Competency Self Certification Questionnaire

SOUTH TYNEDALE RAILWAY – ENGINEERING WORKSHOP

EQUIPMENT COMPETENCY SELF CERTIFICATION QUESTIONNAIRE
July 2024

Name: .....

Please confirm for category of equipment those that you are competent to operate in the Engineering Workshop at Alston.

CATEGORY	YES/NO	EXPERIENCE OF USE
Hand Tools		
Small Power Tools		
Large Power Tools		
Air Fed Tools		
Gas Welding Equipment		
Gas Cutting Equipment		
Electric Welding Equipment		
MIG Welding Equipment		
Lifting Equipment		
Slinging		
Radial Arm Drill		
Pillar Drill		
Shaping Machine		
Milling Machine		
Lathe		
Battery Charging Equipment		
Press		
Work on Low Voltage Loco & Coach Electrical Systems		

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Maintenance of Portable Electrical Equipment Cabling		
Work on Fixed Electrical System (Max 240v) (If yes please confirm your qualification)		

WORK EXPERIENCE RECORD

A – EMPLOYMENT

B – SOUTH TYNEDALE RAILWAY

SIGNED:.....

PRINT NAME:.....

DATE:.....

PLEASE RETURN TO SANDY @ ALSTON EITHER BY;
EMAIL at f.shaw@south-tynedale-railway.org.uk or
ENVELOPE marked Private & Confidential to Sandy C/O Station House Alston

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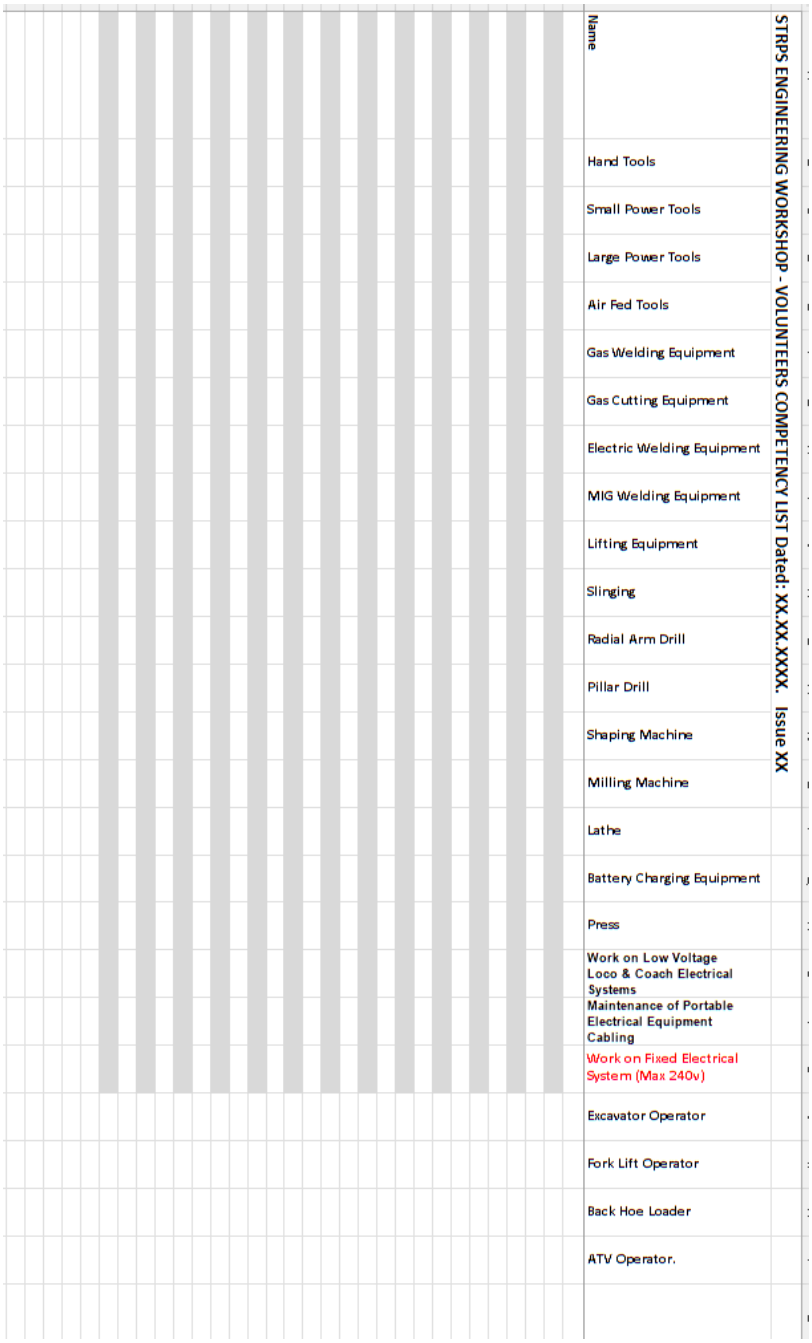
6.2.5.2 Competency List



Name	STRPS ENGINEERING WORKSHOP - VOLUNTEERS COMPETENCY LIST Dated: XX.XX.XXXX. Issue XX
Hand Tools	
Small Power Tools	
Large Power Tools	
Air Fed Tools	
Gas Welding Equipment	
Gas Cutting Equipment	
Electric Welding Equipment	
MIG Welding Equipment	
Lifting Equipment	
Slinging	
Radial Arm Drill	
Pillar Drill	
Shaping Machine	
Milling Machine	
Lathe	
Battery Charging Equipment	
Press	
Work on Low Voltage Loco & Coach Electrical Systems	
Maintenance of Portable Electrical Equipment Cabling	
Work on Fixed Electrical System (Max 240v)	
Excavator Operator	
Fork Lift Operator	
Back Hoe Loader	
ATV Operator.	