RailMark Academy

British Rail Infrastructure Training System

A Malaysian route to a world-class, licensed rail repair workforce

Owned and operated in Malaysia by NJRRail Sdn Bhd

Malaysia can move quickly from a fragmented and inconsistently trained rail repair workforce to a world-class network of trained, licensed, accredited, and monitored rail professionals.

The result is a safer, more reliable, and more sustainable rail infrastructure base, with lower long-term maintenance costs and stronger control over workforce quality.

Safer

Licensed, monitored competence for critical rail work

More sustainable

Longer asset life and less avoidable rework

More reliable

Better repair discipline and fewer repeat failures

More controlled

Poor performers can be reassessed, suspended, or removed quickly

RailMark Rail Competency Licensing Framework

live competency licence
physical + digital card
periodic reassessment
UK and European standards
traceable workforce control

For discussion with senior government stakeholders

Why intervention is needed now

From fragmented capability to controlled competence

Current condition

- Training and field competence remain inconsistent.
- Workforce quality is hard to see and harder to verify.
- Weak or poorly trained personnel can remain in critical work areas too long.

Public risk

- Infrastructure safety is exposed to avoidable repair risk.
- Asset life, uptime, and audit readiness are weakened.
- Maintenance cost rises when poor quality creates repeat interventions.

Strategic opportunity

- Malaysia can establish a nationally credible skills and licensing model early.
- NJRRail can localise capability rather than rely on imported expertise.
- The same framework can support wider ASEAN-facing growth.

This is not simply a training issue. It is a workforce control, safety, and infrastructure performance issue.

skills development | **infrastructure safety** | **competency** | **reliability** | **sustainability**

The proposal addresses a visible gap in capability, governance, and quality assurance for critical rail repair work.

What Malaysia stands to achieve

The public-value case in one view

From this

Current state

- Fragmented training
- Inconsistent field practice
- Weak visibility of competence
- Limited control over poor performers
- Not working to international standards (eg. EN 14730-2)

To this

Future state

- Trained to accredited world class standards
- Licensed: operators who have passed issued a digital license
- Accredited: operators license includes accreditation level achieved
- Monitored: Regular license renewal and spot checks

Which delivers

Outcomes

- Safer rail infrastructure
- Greater reliability and uptime
- More sustainable maintenance outcomes
- Lower long-term maintenance cost
- Stronger control over workforce quality
- Built to expand into additional rail and infrastructure skills

Crucially:

- **non-compliant or underperforming personnel can be identified, reassessed, suspended, or removed from licensed activity quickly.**
- **critical manufacturer notices pushed instantly to active license holders.**

The RailMark solution

A Malaysian operating model under NJRRail

RailMark Academy operates a licensed competency framework for rail repair and rail systems personnel.

Every approved individual receives a RailMark Competency Licence Card aligned to qualification level and authorised scope of practice.

1. **Train to standard**
   Structured technical training, supervised practical work, measured assessment.

2. **License to scope**
   Physical and digital licence card tied to approved level and practice scope.

3. **Monitor performance**
   Reassessment, expiry control, traceability, and auditable records.

4. **Control the workforce**
   Poor performers can be restricted, suspended, or removed from live licensed activity.

Why this model is stronger

- not a one-time qualification
- live licence with periodic reassessment
- visible authorised scope for each holder
- digital and physical verification
- better auditability for operators and government
- new improved processes and techniques introduced across the professional base
- lessons learnt reporting across the network

What public support will deliver

The case for early government backing

Early support accelerates the move from inconsistent and largely unregulated practice to a licensed, standards-based workforce for critical rail infrastructure work.

Skills development at pace

Quickly create a pipeline of trained, assessed, and licensed rail personnel.

Safer infrastructure outcomes

Reduce risk associated with poor welding, weak repairs, and inconsistent field practice.

Greater reliability and longevity

Improve repair quality across rail, crane rail, and gantry systems.

Lower whole-life cost

Cut repeat interventions and enable sustainability formulae to calculate reportable improvements.

Active workforce control

Allow non-compliant or underperforming personnel to be reassessed, suspended, or removed from licensed activity quickly.

The digital competency licence card

The licence is physical and digital

Physical card
+ digital record
+ QR / NFC lookup

Critical control mechanism

The card is the licence. It gives supervisors, operators, and auditors a simple way to see who is current, what they are authorised to do, and when reassessment is due.

Why it matters operationally

Field verification through QR / NFC or system lookup. Clear visibility of licence status, level, and authorised scope. Renewal reminders and automatic expiry control. A practical route to remove non-compliant people from live work quickly.

Suggested data fields

Holder ID, Photo and qualification level. Scope and specialism. Issue and reassessment date. Weld record and QA linkage. UT / MT evidence where required. Supervisor sign-off and CPD status.

Qualification and licensing pathway

Progression with control

The ladder creates a visible workforce pathway while keeping licensing, reassessment, and practice scope under control.

L1

Foundation Rail Repair Operative

Thermit welding entry-level practical foundation. Cat 1: MMA arc welding repairs to rail surface defects. crossings & switch blade repairs

L2

Certified Rail Repair Technician

Controlled automated repair activity. Cat 2: FCAW semi-automatic welding repairs

L3

Advanced Rail Systems Technician

specialism: crane and gantry rail systems

L4

Senior Rail Infrastructure Specialist

by appointment after proven service of L2 and/or L3 operators

L5

Approved Trainer and Assessor

licence to train, supervise, and assess

RailMark is a live competency licence, not a one-time qualification. Holders must demonstrate continued competence through periodic reassessment to maintain their licence.

L1 – Thermit Welding as the Foundation Competence

Progression with control

Level 1 establishes the habits and controls that underpin world-class practice, from training and traceability to reassessment and competence renewal.

L1

Foundation Rail Repair Operative

Thermit welding entry-level practical foundation. Cat 1: MMA arc welding repairs to rail surface defects. crossings & switch blade repairs

Level 1 establishes thermit welding as the foundation competence for track welders, recognising its essential role in rail renewals and the replacement of defective rail. Full lifecycle traceability is embedded within the framework, including weld location, installation date, batch data, and welder identity. MMA arc welding repair competencies are then built progressively from Levels 2 to 5.

This foundation level is supported by a detailed training and assessment process that embeds the discipline, traceability, and control expected of a world-class system.

Technical offer and standards architecture

How the academy is anchored

Launch programmes

Aluminothermic rail welding aligned to EN 14730-2. Flash-butt rail welding aligned to EN 14587. Rail repair by arc welding with ISO 3834-style controls.

Cross-course elements

Site safety and hot-work discipline. WPS and procedure compliance. Coupons, practical assessment, and logbooks. UT / MT awareness and acceptance checks.

Why this matters

Training becomes measurable and auditable. European standards are translated into local capability. The system supports durability, traceability, and workforce credibility.

This is the difference between classroom attendance and standards-led infrastructure competency.

UK and European standards | **international best practice** | **traceability** | **auditable competency**

Quality assurance, digital backbone, and governance

The control system behind the academy

Quality and safety

- ISO 3834-anchored procedures and records
- Consumables, calibration, and traceability control
- NDT-linked performance monitoring
- Corrective-action loop and internal audit discipline
- Lessons learnt safety reporting

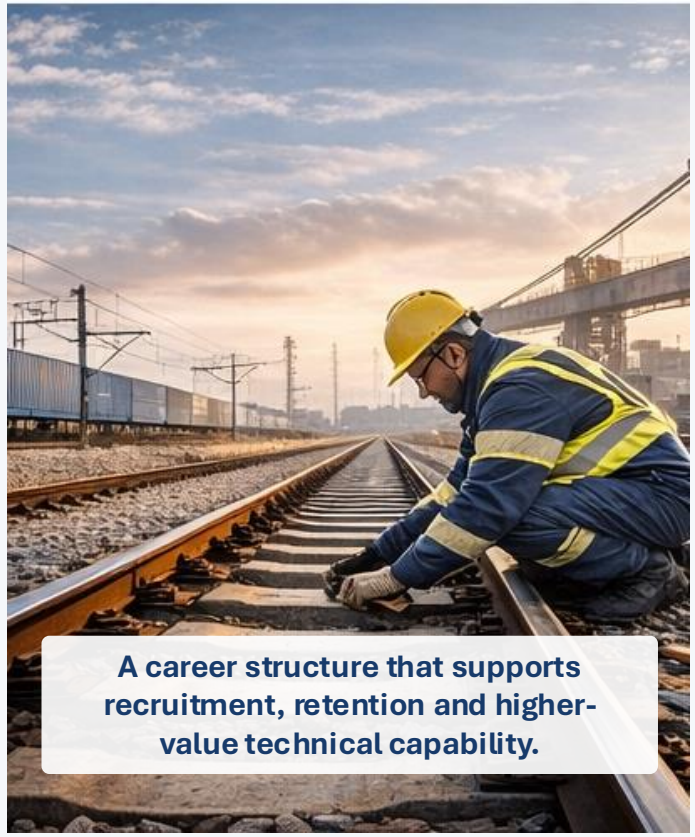
Governance

- Separation between training delivery and accreditation or audit
- Assessor calibration and moderation
- Train-the-trainer localisation within 24 months
- ISO standards watch and immediate roll out of improvements

Digital backbone

- Training Record System
- Supervisor logging app
- Licence-expiry visibility
- Dashboard reporting for operators and government
- Sustainability formulae to calculate and report measurable improvement.

Together, these components make competence visible, controlled, defensible, and reportable.



A career structure that supports recruitment, retention and higher-value technical capability.

This gives operators and public stakeholders a stronger line of sight from training activity to infrastructure outcomes.

Why this is aligned with national priorities

Skills, safety, sustainability, and localisation

Skills development

Supports structured TVET and workforce-upskilling ambitions.

Infrastructure safety

Helps protect critical rail assets with a controlled competency model.

Sustainability

Longer-lasting repairs reduce waste, energy use, and avoidable rework.

Localisation

Builds Malaysian capability through NJRRail ownership and train-the-trainer transfer.

International credibility

Positions Malaysia around UK and European standards and international best practice.

Monitorable KPIs

Creates a framework government can track through licensing, reassessment, and performance reporting.

What this enables public leaders to achieve

The decision-maker value in plain terms

This proposal gives senior sponsors a credible route to claim visible, practical progress in a critical infrastructure discipline.

A licensed workforce model

A first-mover capability that is structured, monitorable, and defensible.

Stronger safety governance

A clearer mechanism to control who is authorised to carry out critical repair work.

Local capability creation

A Malaysian-owned academy under NJRRail rather than permanent dependence on imported expertise.

Measurable infrastructure value

A route to show improvement in quality, reliability, sustainability, and maintenance efficiency.

In short, leaders can point to a safer, more controlled, more localised, and more accountable rail repair workforce.

Implementation, measurable success, and next step

A concise presentation supported by a fuller proposal pack

Indicative launch phases

- MoUs, depot selection, and stakeholder alignment
- Standards mapping and curriculum finalisation
- Fit-out, equipment, and digital MVP
- Pilot cohort and sponsor engagement
- Full launch and regional scale-out.

What success should show early

- Licensed personnel entering field activity
- Better on-time licence renewals. Lower defect, reject, or rework trends
- Stronger traceability and supervisor visibility
- More local delivery capability within 24 months Route to 100% standards compliance initiated
- Sustainability reporting data

What follows this deck

The fuller proposal pack sets out:

- Technical standards mapping
- Operating model
- Implementation plan
- Digital licence concept
- Facility and equipment plan
- governance, and funding structure in more detail.

This is not only a training proposition. It is a national capability proposition for critical rail infrastructure.

Thank you