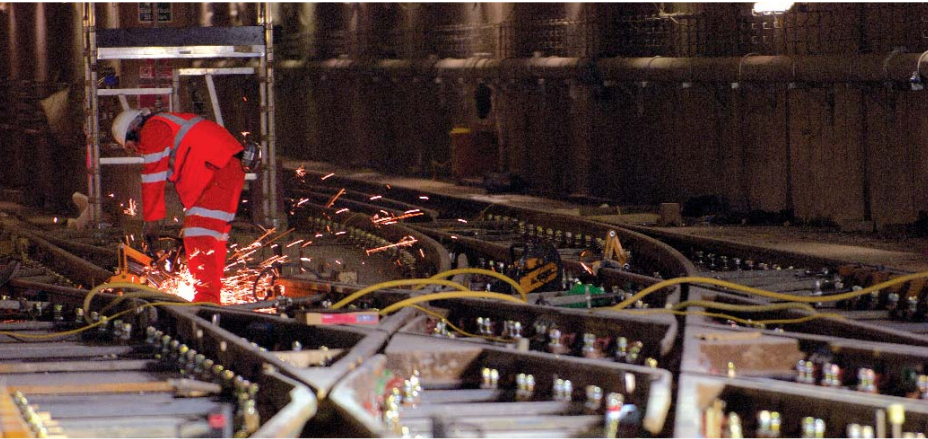


Most people have heard of human factors, also known as ergonomics, and think it is something to do with the design of chairs or the position of a computer keyboard and screen. It is, but it is much more besides. Human factors is the application of scientific information concerning humans to the design of objects, systems and environments for human use. Human factors comes into everything which involves people.



Railways

Human factors

Human performance can be significantly improved.

Railway safety

It is now accepted good practice to consider human factors and ergonomics at all stages of design for every system that includes human operations. Such considerations must incorporate all aspects of the operator's involvement including allocation of function between operator and equipment, display and control system design, communications facilities, work place layout, operator workload and conditions of the working environment.

At Mott MacDonald we are able to examine the many factors that can affect human performance and assess their likely impact on human error and overall railway safety.

System safety

In any safety-critical system, where system failures have the potential to lead to a major loss of life, there is a clear requirement to assess the impact of human errors and to safeguard against human failures occurring.

Human performance can be significantly enhanced through improved system design, adequate training, comprehensive procedures, effective safety management and appropriate emergency planning.

Mott MacDonald offers a wide range of human factors consultancy services that enable organisations to achieve optimal task efficiency and worker performance, whilst minimising costs due to work-related accidents and ill-health.

Human factors team

Mott MacDonald's human factors team includes qualified ergonomists, applied psychologists and safety/risk engineers who are all members of the UK Ergonomics Society. They are all experienced at working within multi disciplinary project teams and taking a pragmatic approach to ensure project ideas are turned into reality. Team members have expertise in applying ergonomics/human factors techniques, undertaking safety risk assessments, managing human factors programmes and conducting training and research within the railway industry.



More than the design of chairs and layouts.

- Human factors management
- Ergonomic design
- Human error analysis
- Human reliability assessment
- Workload assessment
- Safety risk assessment
- Safety management
- Training analysis
- Cost benefit analysis
- Competence management
- Procedures development
- Task analysis
- Human computer interaction
- Software development
- Control room design



Human performance should be considered during design.

Contact us

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Human factors needs to be managed in large projects.

www.mottmac.com

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System design support

Adherence to sound ergonomic design principles in the early stages of a project will minimise the need for costly re-design and rework later. Designs can be analysed in terms of human performance capability data to ensure that physical and psychological requirements will allow optimal worker performance.

Human reliability assessments identify potential human errors and procedural violations in proposed systems of work enabling effective risk-reduction measures to be specified. Quantifying the likelihood of human failures can support business cost-benefit analyses of planned work practices.

Safety risk assessment

A human factors assessment of existing work practices can identify practical measures to improve safety, enhance worker effectiveness, and consequently improve overall system performance. Established methods for analysing root causes and the actual costs of accidents and near-misses can be undertaken.

We can also identify operator training needs, define the core competence requirements of safety-critical activities and assess necessary staffing levels.

Management and integration

All aspects of human factors on large rail projects should be managed by qualified and experienced specialists. The production and implementation of a comprehensive Human Factors Plan ensures that processes are in place to identify and manage human factors issues throughout the project lifecycle.

Our track record

Mott MacDonald has experience in the development and implementation of human factors programmes on numerous UK rail projects. We have worked for a wide range of customers including:

AMEC Rail
Balfour Beatty Rail Projects
Bombardier Transportation (Signal) UK
Channel Tunnel Rail Limited
Cross London Rail Links
Docklands Light Rail
GEC Marconi Services Hong Kong
Heathrow Express
Kaohsiung MRT, Taiwan
Laing Rail
London Underground
Metronet Rail BCV
Metronet Rail SSL
Network Rail
Northern Ireland Railways (NIR)
QSS Group
Railtrack
Railway Safety
Siemens Transportation Systems
Transport for London (TfL)
Tube Lines
WAGN

Ergonomics Society
Registered Consultancy

