



**MIND4
CHANGE**



How to include HOF in change management?

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INTERNATIONAL UNION
OF RAILWAYS

KEY CONTRIBUTORS

Name	Company
Bernard Penners (safety culture expert)	Infrabel
Virginie Papillault (HOF and safety culture)	UIC

CONTENTS

Key contributors	2
Contents.....	3
1. HUman and orgasational factors	4
1.1. Why Human and Organisational Factors matter in change management?.....	4
1.2. What are Human AND ORGANISATIONAL FACTORS	4
1.3. Why are HOF critical in HIGH-risk industries?	4
2. HOF in Change Management.....	6
2.1. How to integrate HOF into change management?	6
2.2. ERA's HOF Toolkit	6
2.3. Practical Tools and Resources.....	7
List of abbreviations	8
Contact.....	9

1. HUMAN AND ORGANISATIONAL FACTORS

1.1. WHY HUMAN AND ORGANISATIONAL FACTORS MATTER IN CHANGE MANAGEMENT?

The introduction of new technologies—whether digital systems, automation, or AI—inevitably impacts Human and Organisational Factors (HOF). The success of these changes depends on how effectively we manage the interaction between people, organisations, and technology.

At Mind4change, we believe HOF must be integrated from the very beginning of any change process, starting at the design stage. This proactive approach helps anticipate potential challenges and ensures that technological implementation aligns with human capabilities, organisational culture and on-field realities.

HOF is not just about ergonomics or user interfaces—it is about how your organization anticipates and manages change while safeguarding safety and performance. In high-risk industries such as railways, prioritizing HOF is not optional, it is essential for resilience and safety.

1.2. WHAT ARE HUMAN AND ORGANISATIONAL FACTORS

Human Factors (US term), Ergonomics (UK term), or Human and Organisational Factors (ERA term) refer to designing work environments, processes, and tools that match the abilities, needs, and limitations of people. This discipline combines psychology, physiology, and engineering to create systems that are safe, efficient, and user-friendly. Learn more at <https://railhof.org/>;

1.3. WHY ARE HOF CRITICAL IN HIGH-RISK INDUSTRIES?

Managing HOF is vital in sectors like rail for several reasons:

- Safety is human-driven: Accidents rarely result from “human error” alone—they stem from complex interactions between organisational and human factors.
- Technical reliability is not enough: Even the most advanced systems depend on human vigilance and adaptability.
- People make safety happen: From frontline staff to planners and procurement teams, every role contributes to building a safe system.

- Culture matters: Good HOF management strengthens safety culture and promotes safe behaviours across all levels.

A strong focus on HOF improves overall safety performance and operational resilience. It requires a systemic approach, leadership commitment, and engagement from all stakeholders.

2. HOF IN CHANGE MANAGEMENT

In rail, as in other high-risk industries, maintaining a high level of safety requires a systematic approach to integrating HOF within the Safety Management System (SMS)—including change management.

Under the EU 4th Railway Package and Common Safety Methods, HOF integration is a regulatory requirement, covering topics such as job design and organisational resilience. Learn more at <https://railhof.org/>.

Integrating HOF is not just about safety, it also reduces lifecycle costs by improving operational efficiency through user-centred design and minimizing costly corrections after implementation. And it is also to better prepare staff, manager and leader's mindset to be ready for digital and technical innovations.

In facilitating cultural change, avoiding and anticipating resistance to changes at all levels of the organisation.

The risk of not preparing staff to change can lead to less safety, less efficiency and productivity, and a demotivated workforce as an example.

When planning changes, key questions should include:

- Why is the change needed?
- How will it affect human performance?
- How can human performance influence the success of change?

2.1. HOW TO INTEGRATE HOF INTO CHANGE MANAGEMENT?

Change impacts more than the immediate subject; it affects people, behaviours, organisational structures, and technical environments. Therefore, every change must be considered holistically.

HOF integration should start at the earliest stage and involve people, their characteristics, and their socio-technical environment.

2.2. ERA'S HOF TOOLKIT

The ERA HOF Toolkit, adapted from Eurocontrol's aviation methodology, provides practical guidance for rails. It includes:

- Descriptive guidance: Five steps to systematically integrate HOF into change management.

- Assessment tool: A tabular checklist of questions to identify and assess HOF impacts.

This toolkit enables even non-HOF specialists to perform risk and change assessments and produce HOF assurance reports.

2.3. PRACTICAL TOOLS AND RESOURCES

- <https://www.railhof.org/>. RailHOF: Knowledge hub for HOF in rail.
- <https://www.icsi-eu.org/facteurs-organisationnels-et-humains>
- Talent Expertise Development Platform: Build skills and readiness for change.
https://www.irsn.fr/sites/default/files/documents/expertise/rapports_expertise/IRSN_FOH_DSR-438_092011.pdf
- <https://www.foncsi.org/fr/publications/cahiers-securite-industrielle/facteurs-humains-et-organisationnels/CSI-FHOS-etat-art.pdf>
- ERA Guide on Management maturity model 2018
- <https://railhof.org/category/enhancing-safety-management/sgs-sms-change-management/>
- Daphné Coffyn « Intégration optimale des facteurs humains et organisationnels (HOF) dans le système de gestion de la sécurité d’Infrabel » Infrabel

LIST OF ABBREVIATIONS

UIC	International Union of Railways (Union Internationale des Chemins de fer)
HOF	Human and Organisational Factors
ERA	European Railway Agency

CONTACT

Bernard Penners

Senior Expert Safety Culture

Infrabel, I.CBE. 12 Safety Culture

Brussels, Belgium

bernard.penners@infrabel.be

Virginie Papillault

Head of HOF and Safety Culture

UIC

Paris, France

papillault@uic.org