From Safety Culture to Everyday Safety

Turning HOF principles into operational practice

Nordjyske Jernbaner · ERA HOF Conference 2026

“Our journey did not start with an observation matrix.
It started with ERA in 2019.”



The starting point — ERA Safety Culture Pilot 2019

Leadership

Strong commitment

People

High involvement

Climate

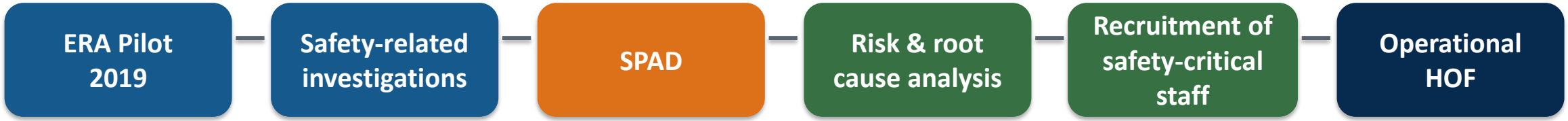
Positive safety climate

Challenges

Communication · role clarity · HOF integration

The assessment gave us insight. The question was: what do we do with that insight afterwards?

What did we do with the findings?



HOF gradually moved from analysing what had happened to understanding how safety-critical work is actually performed.

Where is safety actually created?

Safety is created in everyday work.

People ↔ Technology ↔ Organisation ↔ Operational conditions

Safety emerges from the interaction between them.

From Safety I towards Safety II

SAFETY I

What went wrong?

- Accidents
- SPAD
- Deviations
- Failures

Learn from unwanted outcomes.

SAFETY II

How does work normally succeed?

- Adaptation
- Decisions
- Safety margins
- Everyday performance

Learn from normal work.

We need both.

The locomotive driver as a safety operator

Not a component in the system — but an active safety resource in a complex socio-technical system.

OBSERVES → INTERPRETS → PRIORITISES → DECIDES → ACTS → ADAPTS

How far may I proceed?
How far is the track clear ahead?
How fast may I drive?



The Observation Matrix

Making performance observable and discussable

DMI / signal observation	Situational awareness
Braking strategy	System understanding – ETCS / legacy systems
Work pattern	Decision-making
Focus	Safety margin
Stress management	Work prioritisation

Development levels

Rule-based | Basic | Stable | Advanced | Professional

The matrix is not designed to find errors — it is designed to make performance observable and discussable.

Focus — an example from the Observation Matrix

From rule-based attention to proactive, forward-looking observation

FOCUS **Ability to maintain stable attention**

Instructor observes: attention to signals · scanning of surroundings · stable concentration

Rule-based	Basic	Stable	Advanced	Professional
Can lose focus	**Attention varies**	**Stable attention**	**Active observation**	**Constant, forward-looking attention**
EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE
May overlook signals or changes.	Periods of good focus followed by reduced attention.	Regularly observes signals and the DMI.	Systematically scans the surroundings and signals from infrastructure, cab and rolling stock.	Actively observes and anticipates changes.

The levels describe development in how attention is managed — not a score.

What are we actually observing?

What is the driver seeing?

What information is being used?

How are tasks prioritised?

Where are the safety margins?

How does workload influence performance?

How does the system support the task?

The Observation Matrix is a window into how safety is created in normal operations.

Observation creates dialogue



Not: observer → judgement → score

The purpose is professional reflection on work — not control of the individual.

From observation to organisational learning



If the observation only changes the driver, we have missed half of the learning.

Continuous feedback and improvement (PDCA)

Leading and lagging indicators

LAGGING

Accident
SPAD
Incident
Deviation

What has already happened?

LEADING

Work patterns
Decision-making
Workload
Safety margins
Situational awareness
Adaptation

Can we see change before it becomes an event?

Future use of Operational HOF

ERA Pilot 2019

ERA 2026

Better data
Proactive safety management
Human dimension
System perspective
Emerging risks
Interoperability

Our operational work today

HOF
Operational observations
Dialogue
Early signals
Organisational learning
Continuous improvement

UNDERSTANDING SYSTEM PERFORMANCE

Our operational work in the future

Extend the approach to:
- Other safety-critical roles
- Experienced operators in service

ERA sets the direction — operational HOF helps make it visible in everyday work.

Safety is created every day.

Safety is not created by technology alone.
It is created when people, organisation and technology work together — every day.

From safety culture → to everyday safety → to organisational learning