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C A S C A I S



# Training the Next Aircraft Maintenance Generation:

*Synergy between Human Factors, Emotional Learning and Social Skills.*

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# Introduction

EASA training for Aircraft Maintenance Engineers (AME) is focused on technical issues and Safety, including Human Factors (HF)

As the aircraft maintenance/repair sector evolves rapidly, new challenges related to **Technological Innovation, Work Environment, Data Management**, among others should be minded to fulfill operational needs.

However, we are dealing with Human Beings with expectations and individual needs.

**Is the regulatory training sufficient to meet the evolving challenges and an AME personal needs?**

# EASA Training Requirements

- Basic Training (including HF module)
- Type Training
- Initial/Continuous Training (including Safety/HF)
- Maintenance Organization Procedures Training
- Airliner's Procedures Training

Our experience, as both a Part 145 and Part 147 organizations, has revealed a gap between the training programs provided and the actual needs of the trainees.

**Therefore, what type of training should we offer our trainees?**

We propose incorporating Emotional Learning (EL) into AME training programs, recognizing that essential skills must be developed in these future professionals to help reduce the current training gap.

# Challenges in Aircraft Maintenance

- Fast technological innovation
- Aging workforce and knowledge transfer issues
- Safety and compliance standards
- Diverse skill set required

**Due to these challenges, must we consider individual emotions as an essential link between them?**

# Importance of HF in AME Performance

- Cognitive load, stress and situational awareness management
- Communication skills
- Teamwork spirit
- Impact on job performance and safety

**We realized that these are essential to work during any AME training, independently of the matters being taught.**

However alongside critical HF in AME performance, emotions and social skills can significantly influence AME responses and overall job performance.

# HF Program

The **Part 66 program**, which outlines the knowledge requirements for certifying staff under EASA regulations, generally emphasizes **HF** from an **organizational perspective** rather than a focus on individual emotional learning.

## How can we incorporate an individual focus in the training?

Adding emotional learning elements can be valuable in bridging the gap between technical skills and interpersonal effectiveness.

While emotional learning isn't a traditional focus in technical fields like aircraft maintenance, there are researches suggesting its importance. **EL** can enhance teamwork, resilience, and adaptability, especially in high-stress environments.

# Integrating EL into HF Training

## Teambuilding Activities

(ex. Marshmallow Challenge and  
Pen Challenge)



# Personnel Readiness Beyond Technical Know-How

In these activities we work on "key" elements of HF, EL and Social Skills

- Teamwork;
- Team Identity;
- Shared Vision and Objectives;
- Communication;
- Collaboration and Participation;
- Negotiation and Problem-Solving;
- Reflection and Self-Evaluation;
- Self-Awareness;
- Self-Regulation;
- Social Awareness;
- Relationship Management;
- Emotional Support.

Organizations need to put more emphasis in Soft Skills, Adaptability, and Emotional Resilience Training, in parallel with Technical Training.

# Experiential and Transformational Learning

Combining Technical Training with HF, EL and Soft Skills Development can help an AME to better handle the complex demands of modern aviation.

Trainees need transformational learning experiences to understand the impact of their roles and develop the skills for real-world challenges.

By immersive training programs, such as **experiential learning** and **gamified team-building**.



# Developing Confident and Effective AME Workers

New training programs including EI are the key to build a skilled, confident, and safety-conscious aircraft maintenance workforce.

Through these experiential learning activities in Basic Training, LAS Training addresses emotional development alongside technical skills. This approach allows us to anticipate potential problems and support trainees who are technically proficient but may need guidance in managing emotional challenges.





Is imperative to take proactive steps to prioritize comprehensive training approaches integrating EI.

By recognizing the essential role of EI in enhancing AME proficiency, safety, and resilience allows us to cultivate a workforce that is skilled and adaptable to the evolving demands of the aviation industry.



**We are keen to discuss and share experience  
on these subjects with all of you**