

SCHOLARLY COMMONS

National Training Aircraft Symposium (NTAS)

2022 - Bridging the Gap

Change Fatigue in Aviation Maintenance through a Human Factors Lens

Stephanie Douglas Embry-Riddle Aeronautical University, douglas9@erau.edu

Bettina Mrusek Embry-Riddle Aeronautical University

Follow this and additional works at: https://commons.erau.edu/ntas

Part of the Aviation Safety and Security Commons, Management and Operations Commons, and the Organizational Behavior and Theory Commons

Douglas, Stephanie and Mrusek, Bettina, "Change Fatigue in Aviation Maintenance through a Human Factors Lens" (2023). *National Training Aircraft Symposium (NTAS)*. 35. https://commons.erau.edu/ntas/2022/presentation/35

This Abstract - Paper/Presentation Only is brought to you for free and open access by the Conferences at Scholarly Commons. It has been accepted for inclusion in National Training Aircraft Symposium (NTAS) by an authorized administrator of Scholarly Commons. For more information, please contact commons@erau.edu.

Change Fatigue in Aviation Maintenance Through a Human Factors Lens

Dr. Bettina Mrusek and Dr. Stephanie Douglas Embry Riddle Aeronautical University





Change Fatigue

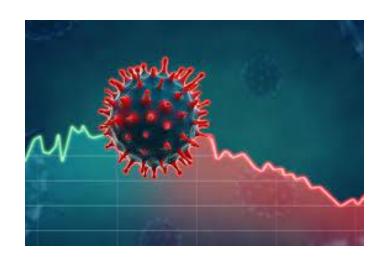
"Change fatigue is the resistance or passive resignation to organizational changes on the part of an employee"





Change Fatigue

- Change is necessary, but not always easy
- Resistance to change can impact productivity







Change Fatigue in Aviation

- Regulation updates
- Internal process changes
- General fatigue

| Lack of Communication | Complacency | Lack of Knowledge | Distractions |
|--------------------------|-------------|----------------------|--------------|
| Lack of Teamwork | Fatigue | Lack of Resources | Pressure |
| Lack of Assertiveness | Stress | Lack of Awareness | Norms |



Learning from other Industries: Healthcare

- Understanding mental and physical characteristics that are inherent to human nature
- Effective change management practices: timing, communication
- Saturation: understand limitations; coffee is not always the answer!









Change Fatigue as a Human Factors Element: Aviation Maintenance

"The science of understanding the properties of human capability and its application to the working environment"

How does change fatigue impact human error in aviation maintenance?

80% of maintenance errors involve human error





Change Fatigue as a Human Factors Element: Aviation Maintenance

How are we addressing this now?

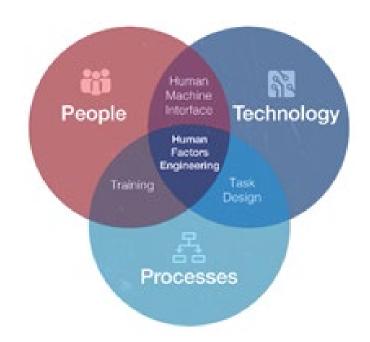
- Fatigue Risk Management: FAA-sponsored SME working group
- From MRM (Maintenance Resource Management) to MxHF (Maintenance Human Factors)
- Effects of the pandemic: increased workload, change saturation, regulatory modifications to scheduled maintenance



Human Factors Engineering: Change Fatigue and Human Factors

What can we do better?

"Human factors engineering is the application of human factors information to the design of tools, machines, systems, tasks, jobs, and environments for safe, comfortable, and effective human use"





Real World View: Moving Forward

Identify human error "hotspots": Cockpit, tools work environment, repetitive tasks, safety culture, training, dirty dozen

Role of leadership

Theory vs Reality





QUESTIONS?