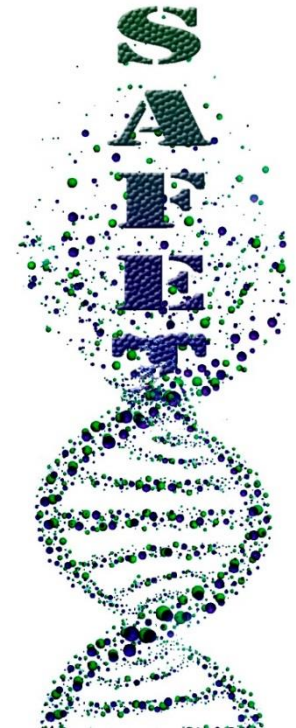


Are Today's Lessons Learnt New?

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**HUMAN FACTORS IN AIRCRAFT
MAINTENANCE**



**ROYAL
AERONAUTICAL
SOCIETY**

LESSONS LEARNT FROM RECENT INCIDENTS AND ACCIDENTS



**Federal Aviation
Administration**

LONDON / 2 NOVEMBER 2017

YES....!

HUMAN FACTORS IN AIRCRAFT MAINTENANCE



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LONDON / 2 NOVEMBER 2017

Based on:

Importance of Investigation (C. Johnson)

Rotary Wing – Considering Humans (A. Evans)

FAIR System (S. Hays)

Safety Systems and Culture (W. Smith)

Ejection Seat Investigation (R. Priday)

The Military Safety Perspective (A. Lawley)

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Traditional Example MX-Related Findings



Did not follow technical instructions/procedures
Unclear communications/cooperation
Fitness for duty



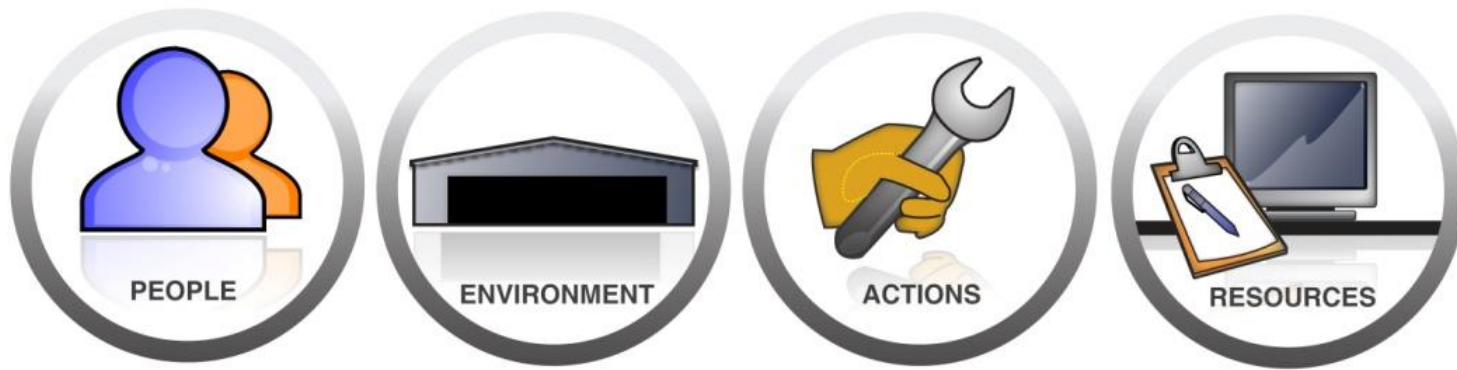
Work environmental challenges
Management or Peer Pressure



Task/work design
Inspection processes



Not enough: Time, People, Tools



People who perform the job

Environment for work - Organizational and physical

Actions (tasks) performed as part of the job

Resources like equipment, tools, procedures, and more

From Chris Johnson



Summary of NTSB and TSB 20 year Data
44% HF –Flight Only!



Mgmt, Environment, Maintenance
Event Data is high value



Cyber world may change event investigation?
Past events don't project future



Importance of reporting cyber events!
More HF thinking may be necessary

From Andy Evans

“Whatever can go wrong will go wrong”
“Things don’t work as intended”

Design is a latent error

Great Examples of documentation shortcomings

Pay attention in early design



From Silas Hays

Lost Tool



Covered so many HF topics – Bravo



Lots of questions – few stood alone



Great Root cause analysis



FAIR 2 – Normalized Deviation ☹️

Corrective Actions

Culture

From William Smith

Training



Reporting



Analyses

Contributing Factors



Proper Launch



Culture Change

“Key Behaviors have become norms”

From William Smith

“The reality of actually ‘doing safety’ extends beyond the matrices and risk registers *of any SMS system*” to “the decision making and **behaviours** of people throughout the operation on an hour by hour basis”. *Neil Richardson,*

Principal Consultant, Baines Simmons

From Ross Priday

Thank you

4 Days – 19 Missed Opportunities

Technical issue or Human issue?

Comparing bag screening and medical

Modify Equipment – Train - Culture

From Adam Lawley

FTFP



Tyre? Tire?



Near Miss reports are great



Normalization of Deviance



Tooling

Get 'er done

From Adam Lawley



Technical Training



HF Training



Follow Procedures



Today's Lessons/Solutions

Safety/Risk Management Systems & Data

Root Cause Analyses

Risk-Based Decision Making

Safety Culture Evolution

Voluntary Reporting / Just Culture

Reliability/Maintainability/Documentation

Cooperation with National Authority (?)



Human Factors in Aviation Maintenance

Library and Current Research

Videos

Fatigue Risk Management

Line Operations Safety Assessments (LOSA)

Training and Tools

Key Contacts

FAA > Programs & Initiatives > Human Factors in Aviation Maintenance

Human Factors in Aviation Maintenance



What We Do

The overall goal of Aviation Maintenance human factors research is to identify and optimize the factors that affect human performance in maintenance and inspection.

Research attention to personnel includes:

- Qualification
- Training
- Motivation
- Worker safety
- Health
- Return on investment
- Professionalism



Resources

Newsletters

Library

Training & Tools

www.humanfactorsinfo.com