Root Cause and Regulatory Requirements

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We Will Discuss

- ICAO Safety Management Manual 4th eds
- Current EASA regulation requirements
- 376/2014
- Future EASA regulation
- Current CAA HF strategy

ICAO Safety Management Manual (SMM) 4th eds. 9859

HF considerations in safety risk assessment

2.4.2.3 It categorizes errors so that contributing factors and **root causes** can be more readily identified and better understood.

2.4.2.4 …An HF analysis ensures that during the organization's risk mitigation process the **root causes** and **contributory factors** are addressed.

Assessing effectiveness

2.4.2.9 In addition, internal audits should monitor progress in closing previously identified non-compliances. These should have been addressed through **root cause analysis** and the development and implementation **of corrective and preventive action** plans. The results from analysis of **root cause(s)** and **contributing** factors for any non-compliance should feed into the service provider's SRM processes.

ICAO Safety Management Manual (SMM) 9859

SMS and QMS integration

2.6.6.2 e) use similar tools, such as: **root cause analysis**, …

2.6.6.6 Even with such differences safety and quality practitioners are essentially focused on the same goal of providing safe and reliable products and services to customers. Both are trained on the various analysis methods **including root-cause analysis**.

2.6.6.7 ….an SMS is supported by QMS processes such as auditing, inspection, investigation, **root cause analysis**, process design, and **preventive actions**;

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Promoting a positive safety culture (Table 6)

Key Element	Enablers	Disablers
Awareness	Investigations seek to establish the root cause	Investigations stop at the first viable cause rather than seek the root cause

Current EASA Regulation

M.A.905(c)	…appropriate corrective action to prevent reoccurrence of the finding and its **root cause**
AMC M.A.403(b)	…analysis necessary to identify the **root cause** of the defect
AMC M.B.104(f)	…to determine the **root cause**
M.A.619(c), M.A.716(c), M.A.905(c), 145.A.95(c), 147.A.160(c), 21.A.125B(c), 21.A.158(c)	…**corrective action** to the satisfaction of the competent authority
M.A.712(a)	…ensure **corrective action** as necessary
M.B.605(a), M.B.705(a), 145.B.50(a)	…until successful **corrective action** has been taken by the organisation …subject to a satisfactory **corrective action** plan.
M.B.903	…shall require appropriate **corrective action** …the **corrective action** required by the competent authority
145.A.60(b)	…**corrective actions** taken or to be taken by the organisation
145.A.65(c)	…ensures proper and timely **corrective action** is taken in response to reports

Occurrence reporting

Regulation (EU) No 376/2014 on the reporting analysis and follow up of occurrences in civil aviation.

EASA Guidance material on follow-up reports (TE.GEN.00400-003)

The follow up requirements are not intended to jeopardise the quality and thoroughness of an occurrence analysis. It may be detrimental to safety if rushed in order to be completed within the encouraged three months period without properly establishing **root cause** and determining relevant **remedial action**.

EASA

NPA 2013-01 Part 145 Embodiment of SMS

…”existing systems quite often fail to properly establish the **root cause or causes** and contributing factors in significant occurrences which leads to ineffective **corrective actions**”.

Thorough analysis of **causes** and contributing factors will enhance an organisation’s capability to perform proper risk assessment. Proper understanding of past problems is important for the ability to think about hazards and risks.

CAA Notification of Open Audit Findings

Dear Sir,

UK CAA NOTIFICATION OF OPEN AUDIT FINDINGS

Further to the audit carried out on {INSERT DATE} by the UK CAA, the findings as listed on the attached audit report are herewith confirmed for your attention and necessary remedial action.

Please supply to us within 15 days of this letter or within the finding due date whichever is sooner, an acknowledgement of the findings; a high level corrective action plan; confirmation that a root cause analysis has been instigated, and proposed timescales to implement the corrective actions.

Further to this, to ensure UK CAA has adequate time for the findings(s) to be closed, please respond in to this office by the agreed 'Response Date', which is a minimum of 21 (or as required) days before the 'Due Date(s)' stipulated on the report.

Should it not prove possible to implement the necessary corrective actions within the dates stipulated, at the earliest opportunity and before the required 'Response Date', please submit in writing to this office a request for an extended agreed timescale which must include a corrective action plan.

1. Corrective action.
2. Preventive action - Unless stated below, this should include root cause identification and root cause correction.
3. Follow up action taken or proposed action to be taken with associated timescales.

Failure to adequately action the findings prior to the defined 'Due Date' may result in the suspension or revocation of your approval. Once your report has been received and the corrective actions accepted, the Audit Report will be updated and returned to you confirming closure of each finding.

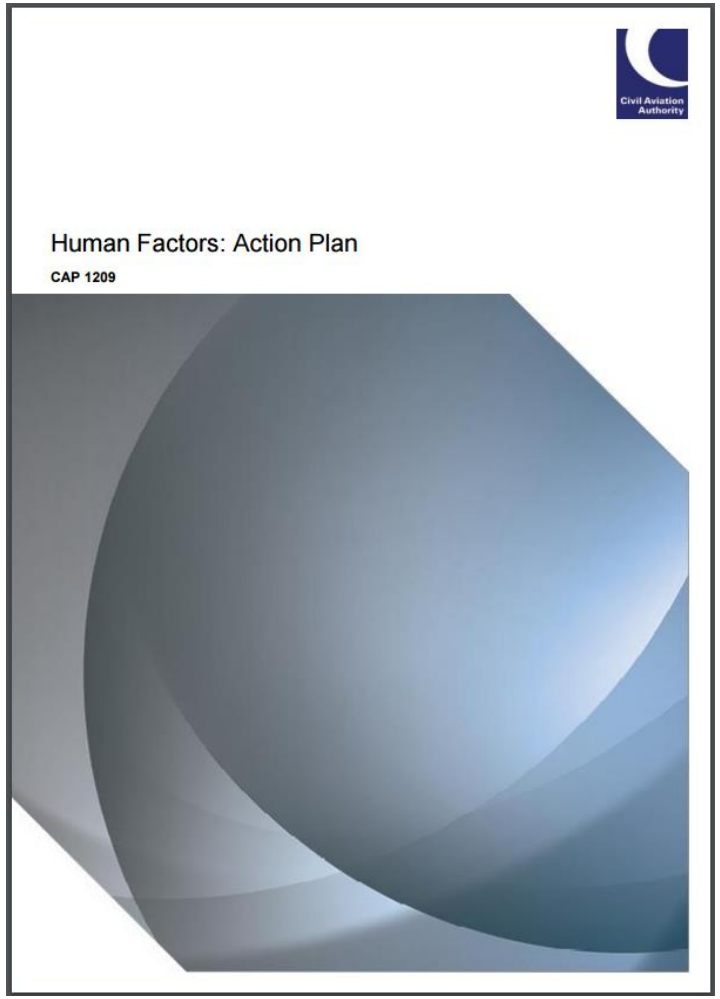
Future EASA Regulation

RMT.0251 SMS embodiment in Pt 145 and Pt 21

Corrective Action is the action to eliminate or mitigate the root cause(s) and prevent recurrence of an existing detected non-compliance, or other undesirable condition or situation. Proper determination of the root cause is crucial for defining effective corrective actions to prevent reoccurrence.

It is important that the analysis does not primarily focus on establishing who or what caused the non-compliance but why it was caused. Establishing the root-cause or causes of a non-compliance often requires an overarching view of the events and circumstances that lead to it, to identify all possible systemic and contributing factors (regulatory, human factors, organisational factors, technical, etc.) in addition to the direct factors.

CAA Human Factors Strategy



CAA HF Action Plan 2018 - 2020

Introduction

This document is a supplement to the CAA's Strategy for Human Factors in Civil Aviation published in 2018. The strategy is available at: http://www.caa.co.uk/Safety-initiatives-and-resources/Working-with-industry/Human-factors/Strategy-and-action-plan/

Included below are the action items which the CAA will focus on in support of that Human Factors (HF) Strategy during the period 2018-2020.

It also includes updates on specific projects from the CAA's HF Action Plan (CAP1209) published in 2015. This can be found in Appendix A.

CAA Policy for Delivery of our Human Factors Strategy

The CAA is committed to understanding and reducing the risks arising from human limitations to aviation safety. As part of this, we are committed to developing an approach that supports people's capabilities to contribute to aviation safety. In order to do this, we must influence the attitudes and behaviours of those within the aviation system, while embedding HF thinking into everything we do.

The CAA is committed to resourcing and supporting the delivery of our HF strategic objectives. We recognise that this means moving to a more proactive approach to supporting and developing Human Performance (HP). We commit to this approach internally in support of our people and the activities they carry out, as well as promoting this approach within the different aviation communities. We will seek to understand people's limitations and how people's capabilities can enhance safety. We recognise that the application of HF knowledge needs to include how people behave in the operational environment.

We will consider all the areas that influence people and include, within our oversight activities, the assessment of how HP principles are being recognised and managed by those we regulate. This will include consideration of equipment, processes, procedures, technology and organisational influences that can affect people as they carry out their tasks.

We will ensure that the CAA provides a consistent approach towards the understanding and oversight of HF requirements, which includes the demonstration of HP principles, within the aviation system. We will do that through a coordinated internal approach led by our HF programme activities and delivered within each department.

In support of the CAA's strategic objectives, each capability team within the CAA will develop detailed actions specific to the HF risks and organisational priorities within their areas. They will resource their teams to enable the delivery of their HF actions within the overall safety priorities for their area. The HF Programme team will collaborate with the capability teams to provide support to identify issues, deliver training and develop specific tools and guidance material. This will ensure a consistent message and

Strategic Objectives

- Proactive use of data and intelligence
- Integrated approach
- Developing inspectors' competencies
- Demonstrate expected performance
- Collaborative partnership
- HF in change management
- Globally aligned

https://www.caa.co.uk/Safety-initiatives-and-resources/Working-with-industry/Human-factors/Strategy-and-action-plan/

CAA HF Strategy Outcomes

- Increased reference to environmental and organisational influences on HP during internal audits and incident investigation
- Changes in HF incident investigation techniques that examine contributory and systemic issues
- Identification of systemic actions during audits and incident investigation with a reduction of blame towards an individual
- Reduction of audit closure based solely on retraining
- Changes to processes and procedures to better reflect the operational environment and its influence on people's performance