



## 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

support learning throughout the organisation.

The CAA cannot do this alone. All stakeholders, communities and industry sectors need to consider how HF influences people's performance within their own specific environment. Only then can we progress together towards supporting and enabling people to be recognised as an essential element of the aviation safety system.

## Strategy Action Items

The CAA's HF strategy published seven strategic objectives that would support the delivery of its projected outcomes. This action plan details the areas and specific actions that we will focus on over the next two years.

Our HF objectives are:

- better use of data and information;
- embedding HF assessment within normal oversight activities;
- supporting our inspectors to develop their knowledge and competencies;
- promotion of best practices;
- collaboration with our stakeholders and other safety critical industries;
- and to remain aligned with international standards.

We recognise that this will be an ongoing programme, that will need to include a team of people within the CAA. This will include HF, SMS and safety reporting programme specialists, HF focal points from across the organisation and specialists from across the different aviation HF disciplines.

This plan will focus on the following actions:

## Training and Tools

The CAA's initial focus will be on developing an internal training programme that maps onto the EU HF competencies for Inspectors and the ICAO guidance on HP principles.

Training and development of competencies will be an ongoing activity but initial training will be delivered to all inspectors by April 2020.

The CAA will also develop a training course, open to

the industry, which will be focused on the application of HF and HP principles within the operational environment.

Training will include:

- Guidance on how to identify that HF and HP principles have been identified and addressed in risk assessment and change management processes.
- Guidance on how to identify environmental and organisational influences on HP in audits and incident investigations.
- Guidance around how to identify individual, organisational and environmental HP markers.

CAA will develop strategies and tools that support our inspecting staff to be able to consider the different HF contributory factors, including organisation influences during their routine oversight activities. This will include assessment of whether industry has assessed HF/HP during their internal audits or investigations and how effectively the HF related issues have been closed.

Training and tools will remain as 'living' resources which can be updated and amended as HF science develops. This will include the development of best practice examples and other guidance material to support learning and develop a better understanding of what "good" looks like.

## CAA Inspector HF Competencies

Inspecting staff will be encouraged to be inquiring about HF issues, to ask questions to improve learning, and to encourage organisations to share good ideas.

Inspecting staff will feel confident and competent to challenge organisations if an HF related audit or investigation finding is not closed satisfactorily.

By the next action plan update, management system oversight audit reports will increasingly demonstrate the following features:

- Reference to environmental and organisational influences on HP.
- Include demonstration of how HP principles have been effectively assessed.
- Identification of systemic actions and focus on contributory and precipitating events rather than

blaming individuals.

- Require robust HP closure actions from service providers internal audit or incident reports that go beyond simply 're-training'.
- Identify how organisations have included HF and HP in all stages of risk assessments and change management.

### Ongoing actions of the CAA HF Programme:

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Continue to collaborate both, within the UK and internationally to develop methods to improve HP. This will be indicated by: attendance, providing presentations and moderating sessions at conferences; participating in HF interest groups; and producing publications and training guidance (as indicated above).

Contribute to the development in the understanding of proactive approaches to safety and human resilience by contributing to the EASA Human Factors Collaborative Advisory Group (HFCAG) programme of work and ICAO working groups. This will include contributing to the development and promotion of HF / HP guidance material.

Provide guidelines and support to inspecting staff around including HP criteria within regulations, in a format that can also be published to the industry.

Support the development of HF assessment approaches that include individual, organisational and environmental markers, especially focused on areas where HF / HP requirements are embedded within the regulations.

Support the ongoing work of the GHOST team and promote the initiatives developed within the team to airports and handling agents.

Provide support for the GAU to enable them to increase awareness of HF issues amongst the air display community and assist in the sharing of HF experiences, insights and best practice.

### Summary

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These actions are primarily focused on the development of internal capabilities and inspecting staff competencies, along with ensuring that the CAA remains aligned with global developments in HF knowledge.

CAA will continue to review the risks and priorities that our assurance, inspecting and intelligence functions identify. We will seek to match our resources to the risks that we identify, both across the industry and within specific communities or activities. We will revise and update our HF actions in line with the needs of our internal teams and across industry.

HF and HP will remain a significant and integrated area of our ongoing safety oversight activities.

## Appendix A – Update on CAP1209 Actions

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This section contains a summary of the specific projects within CAP1209.

### Projects

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This is an outline of the outcomes from the projects that were highlighted in the HF Action Plan in September 2015.

#### Safety Reporting

The CAA and BALPA worked collaboratively with the London School of Economics to review the reporting culture of pilots towards the MOR scheme. The study aimed to educate our approach and inform our understanding of the reasons and extent of unreported safety occurrences. This study was published in February 2016 as CAP1384 Investigating Reporting Culture Amongst Pilots: A Briefing Study.

#### Human Factors in Safety Management Systems

The HF in SMS project goal is to improve how HF elements are integrated into SMS by providing better guidance and feedback to organisations.

The CAA have updated the audit guidance material for SMS assessment and trialled it within the industry and our Inspectorate. This updated guidance material now forms the basis for internal CAA SMS audit refresher training and competency assessment of inspectors and surveyors.

The importance of an integrated approach to the assessment of HF, which includes the demonstration of HP principles in day-to-day operations, remains an area of ongoing focus within the CAA's HF strategic objectives.

#### HF Day to Day

The CAA conducted a project, in conjunction with NATS and a UK airline, to assess the use of a safety survey programme. This project focused on identifying and improving operational safety. It sought to develop a greater understanding of specific daily operational challenges and how they

were managed in order to improve our knowledge and approach to aviation safety.

The knowledge gained from this project will now support the ongoing development of proactive oversight methodologies and development of best practice guidance.

#### Automation

The CAA established an expert working group which developed CAP1377 ATM Automation: Guidance on Human Technology Integration. This document is available on the CAA website and provides guidance on how to address the relationship between humans and technology within the framework of a contemporary safety management system.

The CAA continues to monitor global approaches in the use of automation and the human machine interface. We continue to actively collaborate with EASA on the development of automated aviation systems through their Human Factors Collaborative Advisory Group.

#### Pilot Performance

The CAA conducted research on pilot training to support its understanding of the available research on pilot training and the current issues and opportunities in this area. This research was published in CAP1581 Pilot Training Review – final report: recommendations and conclusions. Its findings will be used to inform the CAA's training standardisation activities.

Pilot performance remains an area of focus and we continue to actively collaborate with EASA on both the HFCAG and specific rulemaking and advisory groups on this subject.

#### Engineer Performance

We are continuing to work to reduce the impact of Maintenance HF errors and drive improvements in maintenance standards through a collaborative approach with industry. This remains an ongoing activity where we are seeking to improve oversight approaches and industry understanding of the contribution of organisational influences on engineer performance.

This work includes ongoing activities within the Airworthiness Action Group.

## **Fatigue**

The CAA commissioned a research study, which was conducted by the Dutch National Aerospace Laboratory (NLR) and Netherlands Institute for Neuroscience (NIN), to better understand the feasibility of non-invasive methods of monitoring fatigue in pilots. This study has been completed and the results will be published on the CAA website during 2018. The results will also be made available as a research document.

## **Training**

CAA staff training is an ongoing process and remains a key action plan item. We are continuing to develop HF competencies and course content for our internal training programme. The CAA is developing an open access training course on the application of HF principles to support industry understanding of practical approaches to supporting HP within the operational context.

## **GHOST and CAT-CAG**

The CAA continues to work collaboratively with both the Ground Handling Operations Safety Team (GHOST). The European Commercial Aviation Safety Team (ECAST) was transformed into a Collaborative Analysis Group (CAG) on Commercial Air Transport (CAT) under the new structure of advisory bodies and the CAA remain engaged in their activities . We have contributed to the development work of the London Luton Airport Safety STACK. This is a collaborative group which has been working towards developing harmonised approaches which support safety for all operators at the airport.

The CAA will continue to work with the industry to promote best practice and collaborative safety management approaches in UK airports.