

Enhancing aviation safety

The UK's safety record remains one of the best in the world but as demand on capacity and business increases, and the systems that aviation uses develop and change, the pressure on the UK aviation industry's excellent safety record increases. Safety regulators, such as the CAA, therefore need to be innovative in their approach.

In July, the CAA launched a major new Safety Plan for UK aviation. This highlights the actions required to tackle what we call the 'Significant Seven' safety risks, that we have identified in partnership with the aviation industry.

The Significant Seven are:

- **loss of control;**
- **runway excursion;**
- **controlled flight into terrain;**
- **runway incursion;**
- **airborne conflict;**
- **ground handling; and**
- **fire.**



Key to tackling these risks is a move to enhance the integrated safety risk management process; improving our understanding of human factors and encouraging an improvement in issues related to human performance across the industry; promoting a 'just culture'; industry implementation of effective safety management systems; and adoption of a performance-based regulatory approach. Achieving progress across all these factors will result in safety improvements of benefit to aviation and the public at large.

To continue to enhance the CAA's role in ensuring high levels of aviation safety we are also working to adopt a new performance-based approach to regulation through our Enhanced Safety Performance (ESP) programme. This work aims to make our safety oversight much more focused on identifying and then addressing risks, together with industry.

The European Union, through the European Aviation Safety Agency (EASA), is taking on increasing responsibilities for legislation and regulation. This is essential for achieving minimum safety standards in a global industry. This presents challenges both in the shaping of new regulatory regimes and approaches, and the evolution of our staff, skills, organisation and processes as the CAA's role changes.

This year the transition to EASA taking over pilot licensing has been a key project with over 35,000 licences to be transferred to the EASA system by 2015. EASA also continues to develop regulation for Aerodromes, Flight Operations and Air Traffic Control. An important aspect of this is the mandate for safety management systems across the aviation system.

There has also been work to produce proposals for a Europe-wide pilot flight time limitation scheme to control pilot working hours. The proposals have passed through a number of stages, with detailed input from the CAA; we believe the new European regulations will provide an equivalent level of safety to the UK's current system.

The impact of volcanic ash on aviation continues to be a global issue with the Icelandic volcano, Grimsvotn, erupting in May 2011. The CAA's policy continues to be to minimise disruption while ensuring safety. As a result, we have continued to make volcanic ash a high priority and have worked with industry to improve data from the source of any volcanic eruption and also the forecasting used to predict where ash is present and its density. To help validate these forecasts, we worked with the Met Office this year to introduce a new scientific testing aircraft. We have also been active worldwide to encourage harmonisation of international standards on dealing with ash. However, until engine manufacturers undertake work to develop a realistic ash limit for engines, providing a robust basis for a more liberal approach to flying in areas contaminated by ash, volcanoes will remain a potential cause of significant disruption.

From an airspace perspective, much of this year's work has focussed on our ambitious Future Airspace Strategy (FAS) and the changes resulting from the London 2012 Olympics.

Work with industry to devise an implementation plan for FAS is well underway, aimed at delivering extra airspace capacity and also facilitating significant environmental gains by delivering more efficient airspace management.

This will allow more continuous descents and ascents on arrival and departure at airports, direct routings and eventually, a reduction in holding stacks. The FAS Industry Implementation Group is on track to deliver its Implementation Master Plan by the end of 2012, setting out the pan-industry plan for changes to the UK-Ireland air traffic management network up to 2020 and will represent the UK's approach to meeting Single European Sky requirements.

A key early milestone of the FAS is our consultation this year on a new Transition Altitude for UK airspace. Transition Altitude is the height at which aircraft change from using the vertical distance from the ground to determine their height (in order to ensure safe separation from terrain and other obstacles) to using height measurement based on a standard reference. This happens at higher altitudes where terrain avoidance becomes less of an issue but ensures that aircraft calculate their height in the same way, which is critical to the safe separation of aircraft. The Transition Altitude is not currently consistent across the UK and varies between 3,000 ft and 6,000ft depending on location and type of airspace. This was set in the 1950s when aircraft instrumentation and air traffic control systems were much less accurate and aircraft performance was lower. Modern commercial aircraft reach these altitudes shortly after departure, and the change in operating techniques as aircraft pass through the Transition Altitude adds to the complexity and workload for pilots at a critical stage of the flight.

Alongside the FAS work, we have also been leading the production of the UK's National Performance Plan required under the Single European Sky legislation. The Performance Scheme sets out key performance indicators for safety, the environment, capacity and cost-efficiency. The UK's Performance Plan (and addendum), along with those of all other Member States, is available from the Performance Review Body's (PRB) website.

Since the 2012 Olympics were awarded to London the CAA has been working closely with Government and airspace users to assess the implications for the UK's airspace system. Last summer the Government announced its final set of airspace security restrictions. These are being implemented as part of the Government's aim to deliver a safe and secure Games. The CAA has been undertaking a major education programme, together with industry, to ensure the airspace users affected, which will be mainly the light general aviation community, are aware of these significant changes.

Other Olympics related work has involved the approval of new temporary airspace to be assigned to NATS to handle the expected increase in business aviation flights.

Responsibility for regulation of aviation security

During this year the Government consulted on its proposal to transfer some aviation security regulation functions to the CAA. This is provided for in the Civil Aviation Bill and the CAA has been working with the Government to plan for this transfer of responsibilities.

International consultation

The CAA is committed to supporting international aviation safety and plays a significant part in stimulating informed debate by leading or supporting a vast array of conferences, meetings, ICAO Panels and working groups, both globally and within Europe. One of the CAA's key roles is to use our expertise and knowledge to influence emerging international standards and regulations to ensure that they are consistent with Better Regulation principles and that they are in the best interest of UK industry and consumers.

A recent example of our involvement in the global context was the World Radio Communications Conference (WRC12), which was held in January/February 2012. Organised by the International Telecommunications Union (a sister organisation to ICAO within the UN), the conference takes place every four years to determine the regulations and allocations for radio spectrum used by every conceivable sector from radio astronomers to mobile communications and, of course, for aviation. The availability of suitably protected spectrum on a global basis is fundamental to our industry as it is the medium by which much of our technical capability is delivered.

CAA International

Through a wholly owned subsidiary company, CAA International Ltd (CAAi), the CAA offers training, examination services and technical support and has worked for clients in over 140 countries. The work contributes specifically to the overall safety of UK citizens travelling abroad and in general helps raise safety standards worldwide.

Despite the economic downturn, demand for training remains strong; during 2011/12 over 100 courses were delivered to a total of 1,300 delegates.

Our relationships with the aviation training academies sponsored by industry regulators in Malaysia and Singapore continue to develop and strengthen.

The network of overseas centres for pilot and engineer licence examinations has been further expanded to include Bangalore, India; Kathmandu, Nepal; Perth, Australia; further centres will be developed for 2012/13.

Work has commenced to migrate the current paper-based examinations to an e-examination platform and services based on this system will be available in the second half of 2012/13.

Demand for services from European regulators and funding agencies remains strong. This is our largest market and continues to increase year on year.

Further afield our expertise has been sought by regulators seeking to address both capacity and capability issues, with projects ranging in scope from a few days to the deployment of multi-disciplinary teams in several countries for periods in excess of two years.

Technical auditing is a skill common across the regulatory disciplines and this expertise forms the basis of many assignments. During 2011/12 CAA International achieved accreditation as an EN9100 certification body, thus opening up a further market opportunity based on this competence.

Overseas Territories safety regulation

Air Safety Support International Ltd (ASSI), a wholly-owned subsidiary company of the CAA, ensures that the UK meets international obligations on aviation safety oversight in the UK's Overseas Territories, such as the Falkland Islands and the British Virgin Islands.

During the year under review ASSI took measures to ensure that it could continue to pursue its remit against the backdrop of a much reduced grant from the DfT. It closed its office in the Caribbean and consolidated activities from its UK base. A formula to obtain financial contributions from Territory governments towards ASSI's costs in future years was agreed. ASSI's mission and aims remain unchanged with a focus on enhancing safety within the Territories and in building sustainable local regulatory competence, a withdrawal from the direct regulatory role remains a strategic goal. However, this requires significant commitment from the OT governments that rely entirely on ASSI for regulatory oversight.

Key safety aims and achievements:

In last year's annual report we set out our key safety aims. Below we describe the progress towards those aims:

The CAA will have influenced safety outcomes worldwide to reduce risk of harm to UK consumers, through working with CAAi, supporting EASA and involvement in ICAO.

We continue to work closely with CAAi to improve safety outcomes worldwide.

We have supported EASA's development and delivery of the European Aviation Safety Plan, ensuring the CAA plan aligns with the European plan.

We have led the ICAO Panel to develop an new draft Annex 19 on Safety Management, bringing together all safety management standards and producing both an implementation plan and a future work programme to continue development. The Annex is due to go before the ICAO Assembly in 2013.

We continue to participate in existing key ICAO panels in areas such as operations, aerodromes and safety data.

Considerable effort has been spent on influencing the Standardised European Rules of the Air, which aim to transpose several ICAO annexes into EU law and replace national variations by common EU variations where necessary. The UK has a mature ATM system that has enhanced the minimum standards set by ICAO and it is important that any standard variations at the European level do not have an adverse impact on the UK's safety. We have worked closely with EASA and the Commission to ensure that the final text of the legislation does not

result in negative consequences for the UK and have been able to secure transitional arrangements that allow us to implement the legislation by December 2014, two years later than the date originally envisaged by the Commission.

The UK aviation industry will have reduced aviation safety risk from current levels, in line with agreements with the CAA, expressed in the State Safety Programme and the National Performance Plan.

The CAA Safety Plan that includes industry input has helped to focus on the 'Significant Seven' risks. Work is underway to address all of these risks and to develop, with industry, the necessary indicators to demonstrate safety performance improvement.

The CAA has worked with Oil and Gas UK and the offshore helicopter operators to set up a network of automated observing stations in the North Sea and internet display system for use by the operators, which is now operational. In parallel, to meet the UK international obligations, the CAA has arranged for the provision of around a dozen stations to provide observations to international standards, which are now being disseminated to other North Sea neighbouring States and beyond. In addition, the CAA has ensured that training of some 600 personnel in weather observing has covered all appropriate aspects. This has enabled staff working on the offshore platforms to be able to provide more accurate and timely information on weather conditions in the North Sea to ensure that pilots are better informed of likely conditions that may be expected. As a result, the work has addressed some key recommendations stemming from the investigation into the helicopter accident in Morecambe Bay in 2006.

Working with airspace users under the Future Airspace Strategy and contributing to the State Safety Programme work, we have developed a work programme for the continued evolution of UK Class G Airspace (uncontrolled airspace) and operations within it. The “Class G Airspace for the 21st Century” paper was published via the CAA internet at the end of March 2012.

Safety regulation will be fully aligned with the Better Regulation and Efficiency ‘Target Outcomes’ including increased value for money.

CAA continues to develop a performance-based approach to safety regulation, which is designed to embed effective risk management at its core, whilst ensuring that the requirement for compliance as part of an effective risk management strategy is not lost, and to align with the Better Regulation principles. The new approach is being trialled and is aligned with EASA’s new regulatory framework for organisations and aviation authorities.

In collaboration with industry, we are undertaking a review of the regulatory framework applied to recreational aviation in order to drive towards a more proportionate approach.

The UK aviation industry and the CAA will have measurably increased capability and performance in safety management, human factors and just culture, and demonstrated the benefits in terms of risk reduction.

A significant review of both the CAA’s and industry Human Factors experience has been undertaken. This will help to shape the CAA’s future work in the area to ensure the aims are met.

We have worked with industry to prepare for the mandatory introduction of Safety Management Systems.

Through delivery of FAS the CAA will have reduced current and future safety risks associated with air traffic management.

Work has started with industry to develop implementation plans for FAS and a consultation has commenced on changing the UK’s Transition Altitude, which will be a major contribution to future FAS benefits realisation.

The UK’s Airspace Management Policy was reviewed and re-issued to provide a contemporary structure within which both civil and military airspace management organisations are able to optimise the safe shared use of airspace through improved civil/military coordination at the strategic and operational levels. This cooperation is central to delivering safety, environmental and capacity performance improvements.

The CAA will have established effective means of communication that promote safety by sharing information, and by prompting all stakeholders to contribute and share information, across the total aviation system.

We are working with industry and EASA to develop a common understanding of risk classification and modelling across aviation, as part of our drive to agree the best data streams to monitor safety performance across the aviation system.

We are implementing ‘ECCAIRS’, a new European standard system for assessing, classifying and storing Mandatory Occurrence Reports which will enable improved direct web-based access by contributing organisations to the whole database.

We continue to work with industry in forums such as the Safety Improvement Advisory Group.

The Airspace and Safety Initiative (ASI) will deliver tangible safety improvements for all airspace users in the outside controlled airspace environment.

ASI work is continuing to reduce the number of airspace infringements and is working to deliver continued improvements through use of Airborne Collision Avoidance Systems and developments in the electronic and visual conspicuity of aircraft.

The ASI has also been used as the prime means to alert airspace users to the changes resulting from the London 2012 Olympics. This extensive programme has reached over 35,000 pilots.