Introduction

The UK Civil Aviation Authority (CAA) and c.100 senior delegates from the aviation industry met on October 31st 2015 at the Royal Aeronautical Society to discuss the implementation of Performance Based Regulation (PBR). This report describes the outcomes of the conference drawn from the conversations on the day and feedback provided by the delegates in the post conference survey.

Mark Swan, CAA’s Director of Safety and Airspace Regulation set out the objectives of the conference, to:

1. Update industry on the implementation of PBR.
2. Gather industry feedback on the PBR approach.
3. Review the activities of the PBR Industry Group, working with the CAA to tackle some of the key PBR implementation challenges.
4. Capture the industry’s perspectives on the top safety risks facing the sectors they operate in.
5. Consider an international perspective on the adoption of PBR in other regions.

A wide range of industry sectors were represented at the conference, including aerodromes, commercial air transport, air navigation service providers (ANSPs), ground handlers, the CAA, MoD, DfT and international regulators. The conference demonstrated that the progress made during 2014 and 2015 to implement PBR is improving the way the CAA collects, analyses and uses safety risk information. There is a strong consensus across the industry that the efforts to further refine and embed the PBR approach must be maintained in order to realise the full benefit of the changes.

PBR implementation is fully backed by the CAA Board because it enables good regulation.

Dame Deirdre Hutton, Chair of the CAA Board, opened the conference with a key note speech that set out the characteristics of a good regulator and how they are supported by the implementation of PBR. Dame Deirdre explained that the starting point for a good regulator is to focus only on the risks that are real and cannot be managed by a competitive market. It follows that a good regulator must maintain a strong understanding of the key risks that impact on the industry and consumers that it is tasked to protect.

PBR can help industry stakeholders to self-regulate by collating safety risk information that indicates where improvements are needed. It offers the potential to nudge industry towards making improvements, encouraged by the prospect of fewer inspections for higher performers. PBR also plays an important role in ensuring that the regulator’s processes and decision making are focused, proportionate and consistent. Inconsistencies make it difficult for the well intentioned to act well and it allows the ill-intentioned to capitalise on loopholes in order to circumvent unfavourable aspects of the regulatory regime.
The conference delegates agreed that to regulate effectively the CAA must have real expert knowledge of the sector and understand how their organisations operate. Dame Deirdre highlighted that the CAA must strike a delicate balance between being an understanding partner of the industry and an independent, objective regulator. It is especially important that the introduction of PBR is not seen to take any safety responsibilities away from the industry. The accountability for managing risks and delivering safety is owned by the industry. The regulator’s role is to understand the risks (particularly at the sector-wide and total system levels) and ensure that they are being managed effectively. The use of a tick box audit method to achieve this is limited, therefore the introduction of the risk and performance based approach has the full backing of the CAA Board.

Dame Deirdre concluded with a reflection on the importance of trust to successfully embed the PBR approach: Both trust from consumers that their safety is properly protected; and trust from the industry that the regulator is capable and understands enough about the sector’s risks to carry out its role. The delegates agreed that forums such as the PBR conference play an important role in building trust, demonstrating expertise and ensuring transparency regarding the changes being implemented through PBR.

The Performance Based Oversight Process is improving the focus, value and efficiency of oversight activities.

The director of the CAA’s PBR Programme, Ben Alcott¹, briefed the conference on the changes that have been implemented since the last PBR conference in May 2014. Ben explained how the CAA has adopted an entity approach. Each entity is comprised of multiple privileges (licences, approvals and certificates) that are managed as part of a single coordinated oversight plan.

The entity approach underpins the Performance Based Oversight (PBO) process that is now applied to over 200 operators, aerodromes, ANSPs and air worthiness organisations. Each organisation is subject to a complexity assessment at the start of the process. The assessment examines the size, variety and other complexities of the organisation’s operations. The CAA’s capability teams use the complexity outputs to decide the baseline level of oversight that is suitable for each organisation and record it. The conference delegates recognised the potential for complexity assessments to drive the re-allocation of resources towards areas with more potential risk. Ben emphasised that those organisations assessed as more complex are not necessarily more risky, but that the assessments create a sensible baseline from which to prioritise activities.

The PBO process aims to improve coordination across the capability teams and strengthen the quality of the safety risk conversations with each organisation’s Accountable Manager. All regulators with an insight into an organisation contribute to an

¹ Ben Alcott moved to a new role as the CAA’s International Director from Nov-1st 2015. Jon Round has succeeded Ben as the PBR Programme Director
Internal Review Meeting (IRM) as part of the PBO process. The IRMs create a single joined up view of an organisation’s safety risks. The CAA has developed a software application known as the Entity Performance Tool (EPT) to capture the knowledge generated by the IRMs in one place. The records captured in the EPT can be accessed and updated by all capability teams, building a history of the organisation’s performance in managing its safety risks.

The methods for feeding back safety related information collated through the PBO process was a particularly important topic for the conference delegates. For example, it is envisaged that a discussion about options for improving the management of key risks at the Accountable Manager meeting will strengthen the organisation’s action plans and help to inform decisions about the focus of future oversight for the regulator.

Ben described how the decisions to vary future oversight will aim to refocus activity on the most significant safety risks, or those areas where there is the greatest potential to improve safety. For example, data generated by the PBO process is leading to smarter compliance checking and less focus on areas that are not considered to add safety value.

Ben highlighted that as PBR embeds organisations will be expected to contribute to the PBO process with their views on the entity’s key safety risks. The arrangements for incorporating the organisation’s views directly into the EPT will be considered as part of the PBR embedding phase during 2016. The conference delegates credited the introduction of PBR with increasing the focus on key risks at an entity level. Delegates were also encouraged by the potential for efficiency improvements from the use of accurate safety risk and performance information to vary the frequency, depth and focus of future oversight activities.

The delegates also highlighted that PBO feedback should incorporate an assessment of the risk profile for the sector that the entity operates in. This should include risks generated by entities in other sectors that may or may not be directly regulated by the CAA (e.g. ground handlers, overseas airports, non-UK operators etc.). Ben explained that the aggregation of entity risk information and other safety related data into sector risk profiles had begun, using the data gathered during the first year of PBR implementation. The delegates agreed with the CAA’s expectation that the provision of sector risk information will drive improvements in the effectiveness of industry Safety Management Systems (SMS), in particular through the sharing of good practice around mitigating actions.

**The CAA’s New Regulatory SMS was established in October 2015 to bring all safety decision making under one governance structure.**

Ben also briefed the conference delegates on the introduction of the CAA’s new Regulatory Safety Management System (RSMS) that sits above the PBO process. The RSMS brings together all of the CAA’s technical capabilities and regulatory functions related to safety into a single governance, reporting and decision making structure. For
clarity Ben emphasised that the RSMS is not the same as an industry SMS and there will be no transfer of ownership for the risks that the industry are rightly accountable.

The RSMS is based around an end to end risk management process that dictates how risk assessments at the entity, sector and total system levels are created, tested and used to inform safety decision making. The groups established to oversee safety risk analysis and decision making also form part of the RSMS along with the measures to ensure everyone who plays a role within the system understands their responsibilities and are trained accordingly. As the outputs of the RSMS mature they will prompt the CAA to reallocate resources, adapt business plans or update aspects of the CAA’s strategy to optimise the approach to enhancing safety.

**The CAA’s Transformation Programme is deploying new online services that can enhance PBR**

Peter Drissell, Director of the CAA’s Transformation Programme briefed the conference on how the growth in online and shared services is supporting the implementation of PBR. Peter explained the importance of stakeholders’ experiences when dealing with the CAA and their impact on the industry’s willingness to share information and collaborate in safety improvement projects.

Core functions such as Aviation and Technical Services, Business Intelligence and Business Management have been transferred from the CAA’s individual departments into a single Shared Service Centre. The objective is to improve the way the CAA delivers its core services to stakeholders. The Shared Service Centre aims to speed up delivery, remove inconsistencies and create efficiencies by applying new technologies and common processes.

The CAA’s ambition is to add more services to the Centre during 2016, including an upgraded website, interactive online functions and a customer portal that will support the industry’s engagement in the PBR process. Peter explained that feedback from stakeholders was essential to help the Transformation Programme to prioritise which services to offer. Conference delegates welcomed the CAA’s ambition to deliver new online services and emphasised that establishing easy, secure methods for data exchange is a key enabler for PBR.

**The PBR Industry Group are tackling some of the key challenges of implementing PBR**

Derek Provan, the Director of Airside and Expansion Operations at Heathrow provided the conference with an overview of the PBR Industry Group (PBRIG) and its activities. The PBRIG was established in response to feedback from the May 2014 PBR conference. The group were given a mandate to work with the CAA to tackle some of the key PBR implementation challenges identified at the first conference.
PBRIG is comprised of c.20 delegates representing airports, aircraft operators, ANSPs, airworthiness and ground handling organisations. The group has met four times over the past 12 months, with chairmanship shared between the CAA and industry. A wider virtual team, representing an additional c.60 organisations was established after the third meeting in October 2015 to broaden the engagement across industry.

During its first 12 months the PBRIG have focused in three main areas:

1. Tracking the benefits and costs of adopting a PBR approach.
2. Identifying opportunities to improve how safety data is gathered and used.
3. Considering how people’s skills and safety culture should evolve to support PBR.

As a result the industry group have helped to shape the CAA’s approach to realising the benefits of PBR. Case studies that illustrate how safety data could be better applied have been developed by the group to illustrate how benefits can be generated in a PBR environment. The size and nature of the capability gap across industry and the regulator to embed the PBR approach is a particular area of focus for the PBRIG and includes a consideration of how resources can be re-deployed effectively to areas of greatest concern.

The conference delegates recognised the contribution made by PBRIG and renewed the group’s mandate to continue working on behalf of the industry to embed the PBR approach. The delegates highlighted the importance of PBRIG’s role in strengthening the communications around PBR to increase industry awareness of the changes that are being implemented. Derek acknowledged that more work is required by the group to support the creation of sector level risk profiles. The potential to engage with EASA as a single UK industry body to ensure that new European regulations are applied proportionately is another area requiring further work in 2016.

To inform the next phase of the PBRIG’s activity, concentrating on the creation of sector risk profiles, the conference delegates were asked to feedback on the main safety concerns affecting their sector. The delegates’ responses can be grouped into eight main themes:

1. Financial and commercial pressures
2. The pace of change, especially new technology and changing regulatory frameworks
3. Growth in the use of Remotely Piloted Aerial Systems (RPAS)
4. The performance of professionals in the system (e.g. Fatigue risks)
5. The growing risk of cyber-attack
6. Operations outside controlled airspace, increasing the risk of airborne conflict
7. Managing the impact of traffic growth with limited airspace and runway capacity
8. Management of third party contractors in the system (e.g. Ground Handlers)

Specific safety risk statements were developed for each theme by the delegates, working in teams with peers from the same sectors. The main options for addressing each of the
risks and possible actions for the industry, regulator and other third parties was then explored in greater detail.

For example the delegates felt that the risks associated with the growth in RPAS operations and airborne conflict with commercial aircraft, especially on final approach, may require an integrated enforcement approach, the engagement of local authorities around use of green spaces and technical solutions like Geo-fencing.

The commercial pressures and lack of regulatory standards in the ground handling sector were raised by some delegates as a key risk factor in aircraft departing in a non-airworthy state. The option to expand the remit of aviation regulation to include approvals and oversight of ground handling organisations was discussed by the delegates. Although there is a general reluctance to add regulation, the ground handling delegates highlighted the potential for a mandated set of regulatory standards to mitigate the commercial issues affecting the sector that create operational pressures and safety risks.

The increased use of cloud based systems and tools in Flight Planning and Air Traffic Management (ATM) operations was raised by some delegates as a key factor in the increased risk of cyber-attacks. The delegates considered it important to build links with other key agencies that are tackling cybercrime and suggested a follow-up industry conference to concentrate on cyber issues and the options available to ensure sufficient protection.

The PBRIG members agreed to take the raw feedback provided by the conference delegates and incorporate it into the 2016 work programme, concentrating on the development of sector risk profiles.

The UK implementation of PBR is considered at the leading edge by key international stakeholders.

Pekka Hentu, Chair of the EASA Management Board, briefed the conference on the progress of EASA’s transition towards a performance based environment. Pekka described that EASA’s vision for data driven, risk based oversight and the development of a proportionate, performance based rule set is strongly aligned to the UK’s implementation of PBR. EASA believe that the UK have progressed the implementation of PBR faster and further than other European States.

EASA intend to expand their requirements for regulators to consider adopting a risk and performance approach to improve the efficiency and effectiveness of regulatory oversight across Europe. The introduction of PBR is considered essential to keep the accident rate low and falling as traffic levels continues to grow and the pressure on costs increases.

Pekka also discussed the development of standard oversight methodologies to support the introduction of PBR across Europe and confirmed that a performance based rulemaking process will start from January 2016, focusing on priority areas that are linked to upcoming EU Implementing Rules. The conference delegates emphasised the importance of
proportionate rule making that clearly describes the outcomes that the regulations are aiming to achieve, rather than the prescriptive means by which they should be delivered.

Steve Gottlieb, The FAA’s Deputy Director of Accident Investigation and Prevention reiterated EASA perspective that the UK is leading the world in the adoption of PBR. Steve described that the scope of the FAA’s ambition is consistent with that of the UK when considering PBR. But, that the implementation of key features of the risk and performance based approach was slower and more challenging in the US.

Eugene Hoeven, CANSO’s Director for ICAO and Industry Affairs also welcomed the progress made in the UK to implement PBR. Eugene highlighted the role of PBR in ensuring that the development of regulatory standards is responsive to the significant technological changes that are being introduced to Air Traffic Management through initiatives like Single European Sky.

Belinda Swain, Chief Airworthiness Engineer for Rolls-Royce described her organisation’s experience with PBR so far. Rolls-Royce operate a well-established SMS that transcends both the sectors (Civil Aviation, Maritime, Nuclear etc.) and geographies (UK, Germany, USA etc.) that the organisation operates in. The integration of the PBO process with the audit, assurance and reporting activities that are already well embedded is a key challenge for such a large, global entity. Belinda highlighted the importance of keeping the PBR approach as simple as possible. The level of cultural change implied by PBR should also not be underestimated. The conference delegates agreed with Belinda’s conclusion that PBR implementation must be harmonised with existing methods and generate actions at the right levels within the organisation in order to add value.

**Delegates asked to respond to the PBR Business Engagement Assessment**

The PBR Business Engagement Assessment (BEA) has been published to gather stakeholder’s views on the PBR changes, the reasons for making them, how much they cost to adopt and the expected benefits. A copy of the BEA was provided to each conference delegate to prompt feedback. The document sets out the reasons for implementing PBR, provides a detailed description of the changes and considers the likely costs and benefits to industry stakeholders.

The BEA document can be found at: [www.caa.co.uk/PBR](http://www.caa.co.uk/PBR)

Please email comments and feedback on this report and the BEA to [PBR@caa.co.uk](mailto:PBR@caa.co.uk) and include ‘PBR Conference’ in the subject line.