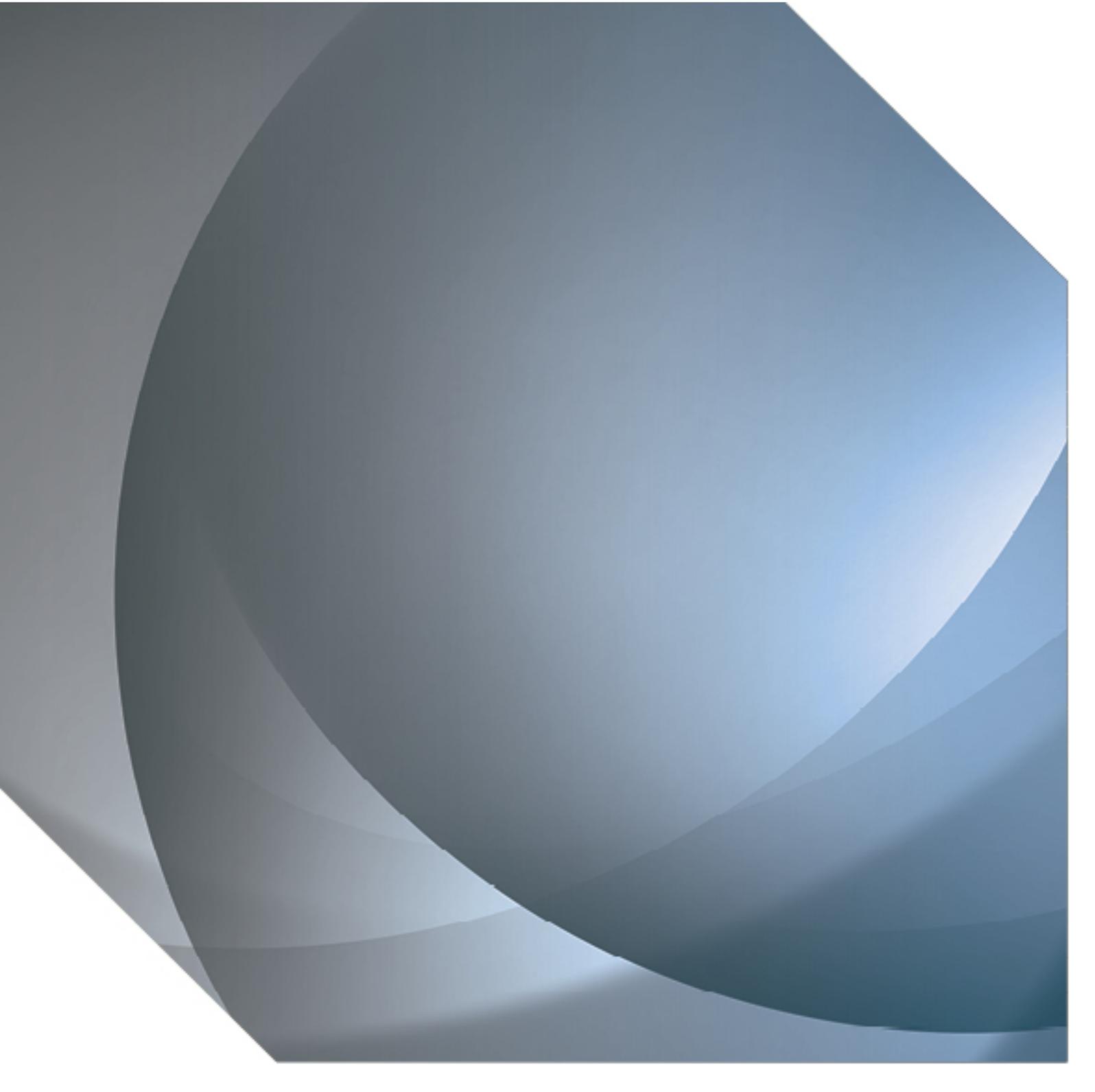


Performance Based Regulation: Business Engagement Assessment

CAP 1345



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1. Introduction

The Civil Aviation Authority (CAA) exists to protect the interests of the public – in Safety, Market Regulation and Consumer Protection. The CAA's Safety and Airspace Regulation Group (SARG) is introducing a new approach to overseeing and improving aviation safety known as Performance Based Regulation (PBR). The introduction of PBR involves several changes to the way SARG carries out its oversight responsibilities and collects, analyses and uses safety risk information.

The purpose of this Business Engagement Assessment is to gather stakeholder's views on the changes, the reasons for making them, how much they cost to adopt and the expected benefits. The questions at the end of the document are included to prompt feedback. We appreciate your input. Thank you.

2. The reasons for introducing PBR

The UK's excellent aviation safety record is underpinned by a system of prescriptive rules, regulations and standards for those organisations providing aviation products and services to meet, and against which the CAA regularly checks they are compliant. As the prescriptive system has matured, its potential to deliver further safety improvements (for example by adding more rules) has become limited. As with many regulated sectors, the production of rules often lags well behind developments in technology, business models and consumer trends, making them less and less fit for purpose. With the number of flights forecast to rise and the pace of change across the aviation industry set to increase, there is a general consensus that safety regulation must also evolve to remain relevant, effective and deliver the required safety outcomes.

The idea that regulators should gather more, better information about safety risks and use it to prompt pre-emptive action before they develop into incidents is well established, especially in EASA and ICAO. EASA has highlighted the creation of risk-based regulations and proactive or leading safety performance indicators as two of its strategic goals¹. ICAO adopted Annex 19 on Safety Management in 2013 that calls for a new approach to the State-level oversight and improvement of aviation safety². In addition, the UK Government's Better Regulation Principles require regulators to reduce the burden associated with existing rules and to regulate only when necessary in a manner that is targeted, proportionate, and informed by a comprehensive assessment of risk³. The introduction of PBR, whilst principally focused on the improvement of aviation safety, also aims to address the requirements in Annex 19 and deliver on the EASA and UK Better Regulation ambitions for a more risk-based approach.

1 [European Aviation Safety Agency](#)

2 [International Civil Aviation Organisation, Annex 19](#)

3 [UK Government Better Regulation Delivery Office](#)

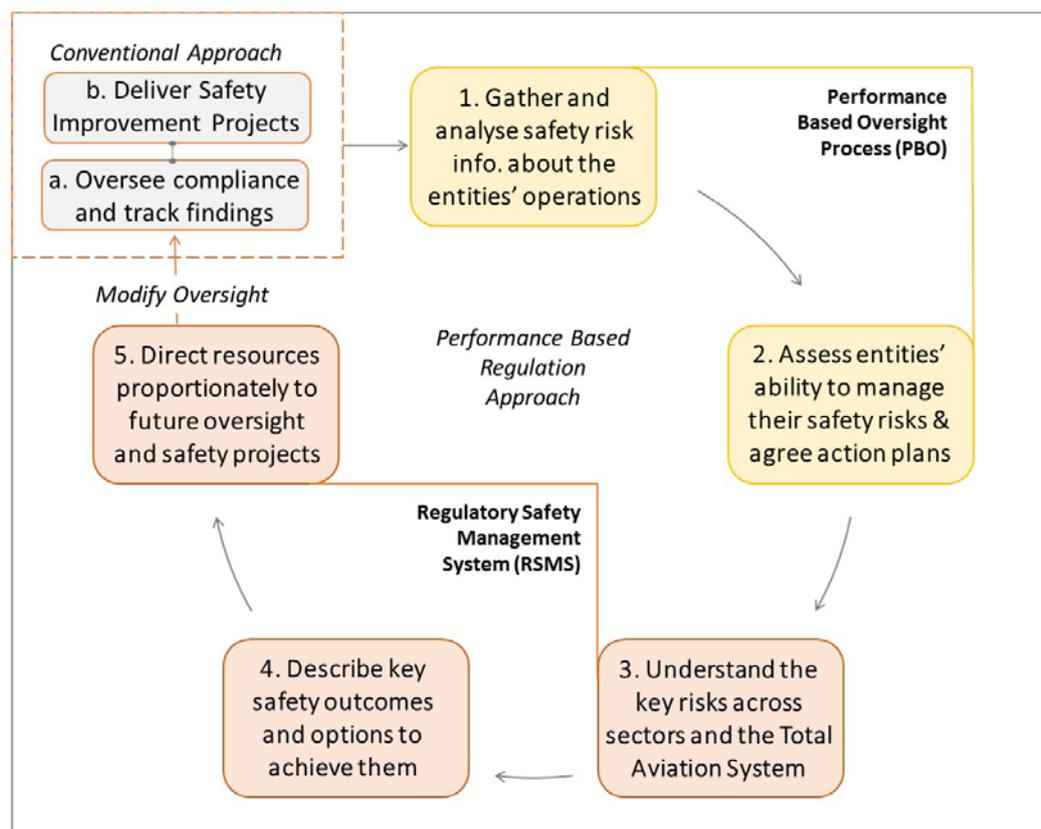
3. Description of the changes associated with the introduction of PBR

The introduction of PBR aims to strengthen and standardise SARG's approach to safety oversight and improvement. A wide range of regulatory processes and functions are affected including the way we assess risks, carry out oversight, prioritise resources and deliver safety improvement projects. The changes can be grouped into five new areas of activity for SARG:

1. Consistently gathering and analysing safety risk information about all parts of an organisation's operations and capturing them in one place. For example, looking at the organisation as a whole, a typical large airline operates aircraft, maintains aircraft and trains pilots and crew. PBR will collate the risks associated with each part of the organisation and analyse them together as a single regulated entity.
2. Assessing the performance of each regulated entity to manage its safety risks effectively and agreeing with the entity's Accountable Manager the actions that are needed to uphold standards and further enhance safety.
3. Grouping safety risk information about entities into sectors of the industry with similar types of operation (e.g. Small Aerodromes, Off Shore Helicopters, Large Airlines etc.) to create a better understanding of the top risks to UK passengers and the General Public posed by the total aviation system and good practice approaches to managing them.
4. Making more informed decisions about the safety outcomes that we and the industry should aim to deliver to better manage the top risks and setting out the actions required of different stakeholder groups (entities, sectors, EASA, ICAO etc.) to achieve them.
5. Directing regulatory resources proportionately to oversight activity and safety improvement projects that focus our attention on the entities and sectors where standards are not being upheld or there is the significant potential to enhance safety.

Some of these activities already take place in parts of the CAA, but they are not joined-up by consistently applied standard processes or controlled by a single management system. The relationship between the new activities, and our conventional regulatory approach, can be illustrated as a cycle (see figure 1). The first two activities in the cycle that focus on bringing together safety risk and performance assessments about individual regulated entities is known as Performance Based Oversight (PBO). Activities 3, 4 and 5 form part of the CAA's new Regulator Safety Management System (RSMS) that governs all of our safety related risk analysis, decision-making and resource allocation. Our compliance focused oversight (box a.) and current safety improvement projects (box b.) both feed information into the PBO process that in turn feeds the RSMS, ensuring that on-going oversight and safety project work is risk based, targeted and proportionate.

Figure 1: Performance Based Regulation strengthens and standardises the conventional regulatory approach



Summary of the oversight approach prior to the introduction of PBR

The CAA issues licences, certificates and approvals for organisations to provide aviation products and services that follow a prescribed set of rules. The conventional approach to oversight concentrates on checking each organisations' compliance with the rules. Organisations are instructed to address findings of non-compliance and observations of areas where their safety performance can be improved. Many organisations hold multiple licences, certificates and approvals for different types of operation, each overseen by a different capability area within SARG (e.g. Flight Operations, Air Worthiness, Aerodromes, Air Traffic Standards etc.). The capability areas carry out their oversight independently, even when overseeing different parts of the same organisation.

Prior to the introduction of PBR, any review of an organisations' safety risks and performance that may coincide with compliance oversight were ad-hoc, unstructured and confined to each inspector's/surveyor's specific area of expertise. Safety risks were not effectively challenged or moderated by a broader consideration of the performance across the sector. Making comparisons between the safety risks faced by similar organisations was difficult to coordinate and record because the information was captured in different systems. Oversight processes, reports and management were different in each capability area, creating inconsistencies that limited our ability to share information or increase efficiency by standardising and automating parts of the work. Future oversight plans

concentrated on further demonstrating compliance with the rules and were not informed by the latest understanding of an organisation's safety risks and performance.

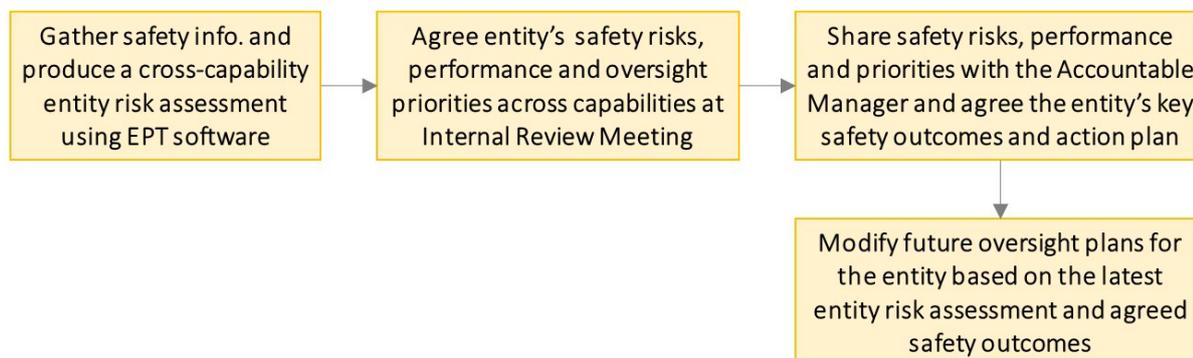
Safety improvement projects prior to the introduction of PBR

Prior to the introduction of PBR, safety improvement projects were typically launched by the individual capability areas, without a strong data driven assessment of their priority or safety value relative to other potential initiatives. The many pressures to deliver safety improvements in different sectors generated a high demand for regulatory resources to support the projects. However, there was no routine or comprehensive assessment of safety risks at a sector level upon which to make prioritisation decisions. The governance approach and management information used to track the success of our interventions was insufficient and fragmented, especially where the projects impacted multiple sectors of the industry. The effectiveness of regulatory decision making about safety improvements is directly related to the quality of the information it is based on. Prior to PBR, our safety data was reliant on compliance findings and mandatory occurrence reporting. Expert judgement will always play an important role in safety management and regulation, but is often limited by the availability of good data that can be captured, readily accessed and easily compared.

The Performance Based Oversight process

The PBO process is a standard methodology applied consistently to every regulated entity and is considered the first major component of PBR. The process allows inspectors/surveyors from each capability area to use the outputs of their oversight and other safety information to build a single cross-capability risk picture that covers all the operations of each regulated entity. Bespoke software developed by the CAA allows all capability areas to access and modify each entity's risk picture and share the updates immediately. The software, known as the Entity Performance Tool (EPT), creates standard reports and management information. The EPT provides a means for inspectors/surveyors to capture their confidence levels about specific parts of an entity's operations and measure trends over time. The EPT outputs are used at Internal Review Meetings (IRMs) to agree a joint cross-capability perspective of each entity's key risks, safety performance and oversight priorities. The IRM provides an opportunity for inspectors/surveyors specialising in different areas to combine intelligence and link their findings.

The IRM outputs, and supporting evidence, is shared in a meeting with the entity's Accountable Manager to agree the organisation's safety outcomes and action plan. The Accountable Manager meetings are considered an essential part of the PBO process, gaining commitment from the entity's leadership to deliver safety improvement actions against the identified risks. Our future oversight plans are informed by the latest entity risk picture and agreed safety outcomes to ensure they are targeted and proportionate. The tools deployed to support the PBO process help the capability areas to track the closure of audit findings, identify common themes and standardise audit outputs. Figure 2 sets out the key steps in the PBO process.

Figure 2: Performance Based Oversight Process applied consistently to each regulated entity

Regulatory Safety Management System

The Regulatory Safety Management System (RSMS) is the second major component of PBR. It brings together all technical capabilities and regulatory functions related to safety into a single governance structure. The main functions of the RSMS are described in table 1 below:

RSMS Function	Description
Safety risk management & decision making	The end to end safety risk management process by which we create risk pictures for entities (via PBO), sectors and the total aviation system and how this analysis is used to inform safety decision making.
Safety governance forums	Groups established to oversee safety risk analysis and decision making for regulated entities (IRMs), sectors (Safety Risk Panels) and the total aviation system (the SMS Leadership Group).
Safety role and responsibilities	Formal agreement on the accountabilities, tasks and expectations of the key individuals across the CAA (not just in SARG) who contribute to the day to day operation and effectiveness of the RSMS.
Safety Communications & Engagement	Ensuring that CAA colleagues, the industry and European / Global safety regulators are kept up to date on UK safety priorities and how they are being managed.
Safety education, awareness and training	Making sure all CAA colleagues understand the RSMS processes and decision making mechanisms and how to make best use of them.
Safety assurance, review & improvement	Our approach to assuring the RSMS is operating effectively, consistently and to the required levels of quality as the industry and regulator continue to evolve.

Table 1: Main functions of the CAA's Regulator Safety Management System

The functions outlined in table 1 aim to ensure that safety improvement projects are launched under pan-CAA governance with a focus on the top priority risks. The RSMS clearly separates our role to ensure that safety risk is effectively managed by industry from our other management activities such as business planning and corporate strategy. The outputs of the RSMS prompt other areas of management within the Regulator to, for example, allocate resources, adapt business plans or update aspects of the CAA's strategy. The implications for safety regulation of any major changes to our organisational structure will be considered and assured by the RSMS before they are sanctioned.

The breadth and quality of safety related information analysed by the CAA will be strengthened by the RSMS. Manual data gathering and analysis will be automated where possible to increase the scale of the assessments and reduce errors. Enhancing our knowledge base of aviation safety presents an opportunity to tackle risk factors proactively, before an incident or series of incidents draw attention to them. The processes for monitoring the impact of our safety decisions will be strengthened by a clear line of sight to our safety priorities and the creation of an expanded suite of Safety Performance Indicators (SPIs).

4. Costs associated with introducing PBR

There are no direct financial costs to the industry expected from the introduction or ongoing operation of the PBR approach as described in section 3.

The majority of the costs to the CAA associated with the introduction of PBR have been borne internally through the temporary re-allocation of people. Approximately 16 full time equivalent CAA resources have been re-allocated from their core roles to create a PBR Programme Implementation Team between Apr-14 and Mar-16. The team includes five senior managers, five business change managers, three analysts and three administrative support staff.

In addition, there are two main areas of direct financial cost to the CAA: 1) External programme management and change management resources, tasked to support the PBR Programme Team with defining, deploying and embedding PBR across the CAA and industry, and 2) The development and implementation of dedicated software tools that support the PBR approach. Table 2 sets out the direct financial costs in more detail.

#	Cost Description	Approx. cost Apr-14 to Mar-16 (£)
1.1	PBR Concept of Operations Development and Programme Definition	c. 60,000
1.2	External Programme Management and Change Management Support	c. 240,000
1.3	PBR Industry Conferences and External Engagements	c. 30,000
2.1	Development and Implementation of the Entity Performance Tool	c. 270,000

#	Cost Description	Approx. cost Apr-14 to Mar-16 (£)
2.2	Implementation of Standard Oversight Planning and Tracking Software	c.140,000
	Total	c. 740,000

Table 2: Direct financial costs to the CAA associated with the introduction of PBR

The ongoing costs associated with embedding and operating the PBR approach, following the completion of the PBR Programme in March 2016, will fall within the CAA's agreed scheme of fees and charges. PBR is expected to create cost efficiencies in some areas of our activity such as the planning and tracking of audits. Other areas, such as the collation and management of greater volumes of safety data, may attract new costs. In general the on-going costs associated with PBR are expected to be broadly cost neutral at first and fall over time. Conversely, the significant long term benefits expected from the introduction of PBR (outlined in section 5) are expected to increase over time.

5. Benefits associated with PBR

We expect that the benefits from the introduction of PBR will be generated in three main areas:

1. Improvements in the performance of industry and the CAA to manage and oversee safety risks, and the ability to demonstrate on-going improvements in safety.
2. Improvements in the CAA's ability to allocate resources to areas with the greatest potential to enhance safety (i.e. better management of resource capacity, competencies and workload against a prioritised set of safety risks).
3. Increased efficiency and effectiveness of the CAA's core oversight processes, generating the potential for the reallocation of capacity to higher priority areas of safety risk or reducing the amount of people needed to carry out tasks associated with traditional compliance activity.

Table 3 sets out each benefit area and describes the specific features of the PBR approach that are expected to generate the improvements. The PBR Programme Team is developing a set of metrics that can be used to quantify and track the achievement of improvements and benefits.

Benefit Area	Description of the features of PBR that generate benefits
<p>1. Improvements in the performance of the CAA and industry to manage the oversight of safety risks</p>	<ul style="list-style-type: none"> ▪ Gathering more, better safety risk and performance information through the PBO process and especially the EPT tool. ▪ Developing the analysis methodologies to create safety risk and performance insights across entities, sectors and the total aviation system. ▪ Strengthening safety improvement decision making, prioritisation and delivery through the RSMS. ▪ Establishing the ability to set and vary oversight levels by entity (i.e. maintain, increase or decrease oversight) based on robust evidence. ▪ Delivery of the safety outcomes and actions plans with agreed with Accountable Managers.
<p>2. Improvements in the CAA's ability to allocate resources to areas with the greatest potential to enhance safety</p>	<ul style="list-style-type: none"> ▪ Identifying the projects with the greatest potential to enhance safety. ▪ Expanding the sources of safety risk and performance information gathered. ▪ Providing opportunities for industry to work together, and work with CAA, to deliver joint safety outcomes. ▪ Strengthening safety improvement decision making, prioritisation and delivery through the RSMS.
<p>3. Increased efficiency and effectiveness of the CAA's safety regulation activity</p>	<ul style="list-style-type: none"> ▪ Standardising, and in part automating, oversight processes, outputs and tools through PBO. ▪ Standardising the governance arrangements for safety regulation through the RSMS. ▪ Removing legacy systems and tools. ▪ Reducing some areas of activity
<p><i>Table 3: PBR benefits areas and specific features that drive benefits</i></p>	

6. Your response

The questions set out below are included to prompt feedback to the Business Engagement Assessment. However we also invite you to provide comments on the introduction of the PBR approach in addition to (or instead of) responding these questions as you consider appropriate.

#	Question
1	Is the CAA correct in identifying a need to move from a compliance oversight regime to one that is performance focused?
2	Is PBR the right approach to deliver the anticipated safety improvements?
3	Do you recognise and believe that the high level benefit areas detailed at Table 3 are accurate and all inclusive?
4	What, if any inconsistencies or weaknesses can you foresee with the processes and approaches proposed by the introduction of PBR?
5	Given the broad range of regulations under which the UK aviation industry operates, can you foresee any conflicts with existing rules and requirements?

#	Question
6	How might the proposed approaches be strengthened or enhanced?
7	Do you agree that the introduction of PBR will have no direct financial cost to industry?
8	What measures of success would you expect to see to assure you that the CAA has delivered and embedded the PBR programme?
9	Please share any general comments on the introduction of the PBR approach:

Name:

Organisation:

Contact details:

Once you have completed the above questions and/or added in your own comments and feedback please email the document to PBR@caa.co.uk by 31 December 2015.

We really value your feedback and appreciate your input.