CAA Performance Based Regulation industry conference

October 29th 2015, 10:00 – 16:00
Royal Aeronautical Society, W1J 7BQ
CAA Performance Based Regulation industry conference

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Welcome

Mark Swan
Director of Safety and Airspace Regulation Group (SARG) – CAA
Conference objectives

1. Update on CAA’s transformation to Performance Based Regulation.

2. Gather feedback on the PBR approach and on how it may be improved.

3. Review the activities of the PBR Industry Group, working with CAA to tackle some of the key PBR implementation challenges.

4. Capture and share the industry’s perspectives on the top safety risks facing different sectors and the options to address them.

5. Consider an international perspective on the adoption of Performance Based Regulation in other regions.
# Morning agenda

<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
<th>Time</th>
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<tr>
<td>09.15</td>
<td>Registration and refreshments</td>
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<tr>
<td>10.00</td>
<td>Welcome</td>
<td>Mark Swan</td>
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<tr>
<td>10.10</td>
<td>Key note speech on the CAA's strategic plan to 2020</td>
<td>Dame Deirdre Hutton</td>
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<td>10.25</td>
<td>CAA Performance Based Regulation programme update</td>
<td>Ben Alcott</td>
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<td>10.40</td>
<td>Transformation programme update</td>
<td>Peter Drissell</td>
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<td>Break 11.00 – 11.15</td>
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<tr>
<td>11.15</td>
<td>Panel Q&amp;A discussion with Dame Deirdre Hutton, Mark Swan, Ben Alcott and Peter Drissell</td>
<td>Facilitated by Mark Swan</td>
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<tr>
<td>11.45</td>
<td>UK PBR Industry Group (PBRIG) overview and interactive session</td>
<td>Derek Provan</td>
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<tr>
<td>12.45</td>
<td>Morning wrap up and set out afternoon objectives</td>
<td>Mark Swan</td>
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# Afternoon agenda

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<tr>
<td>13.00</td>
<td>Lunch 13.00 to 13.45</td>
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<td>09</td>
<td>Key note speech from the Chairman of EASA Management Board</td>
<td>Pekka Henttu</td>
<td>13.45</td>
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<td>10</td>
<td>Performance based approach in the United States</td>
<td>Steve Gottlieb</td>
<td>14.00</td>
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<td>11</td>
<td>International good practice #1: CANSO</td>
<td>Eugene Hoeven</td>
<td>14.15</td>
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<td>12</td>
<td>International good practice #2: Rolls-Royce</td>
<td>Belinda Swain</td>
<td>14.30</td>
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<td><strong>Break 14.45 to 15.00</strong></td>
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<tr>
<td>13</td>
<td>Panel Q&amp;A discussion with speakers</td>
<td>Facilitated by Mark Swan</td>
<td>15.00</td>
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<td>14</td>
<td>PBRIG feedback from the interactive session</td>
<td>PBRIG</td>
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<td>15</td>
<td>Closing presentation, conclusions, outcomes, next steps, final questions and answers</td>
<td>Mark Swan</td>
<td>15.30</td>
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Live questions and feedback

Email: PBR@caa.co.uk

Subject: PBR conference
Keynote

Dame Deirdre Hutton
Chair of the CAA
CAA Performance Based Regulation programme update

Ben Alcott
PBR Programme Director – CAA
Our vision

To transform the CAA into a Performance Based Regulator, working with industry to demonstrably reduce safety risk across the total aviation system and develop the capabilities required for future regulators.
As well as giving you our vision, I told you that this is what PBR would mean for you...

- A holistic, “entity” based approach
- Targeted, consistent, and proportionate oversight
- New conversations based on risk and performance
Performance Based Oversight (PBO) forms the foundation of PBR
The Regulatory SMS will drive the sector and system wide decisions, combining our PBO knowledge with other intelligence to create rich risk pictures.
Qpulse and EPT – key tools for delivery
People – helping our colleagues deliver PBR

- Hard skills training
- Soft Skills training
- Role specific competency framework
- Described the culture that underpins PBR and how to get there
- Embedding PBR into our HR systems and processes
Are we getting the benefits?

PBO
- Colleagues report IRMs add significant value
- Simplified SARG-wide tools and processes
- Better Regulation principles embedded by design
- Accountable Manager meetings delivering higher value
- EASA support for approach

RSMS
- Theory sound and has EASA support
- Phase 1 (present and suitable) test met

Some benefits already beginning to be realised – more to come in increased safety and efficiency
Challenges ahead

- Embedding the changes we’ve made
- Encouraging PBR to grow and flourish
- Your ongoing engagement
Our vision

To transform the CAA into a Performance Based Regulator, working with industry to demonstrably reduce safety risk across the total aviation system and develop the capabilities required for future regulators.
Our engagement with you

- Performance Based Regulation Industry Group (PBRIG)

- Business Engagement Assessment – [www.caa.co.uk/PBR](http://www.caa.co.uk/PBR)
CAA Performance Based Regulation programme update

Peter Drissell
Director of Aviation Security and Director of the Transformation Programme – CAA
Changing the CAA

Online services

Shared services

PBR
Customer/stakeholder experience

- Online services
- Shared services
- Customer Focus
- PBR
Shared services – the story so far

We moved 300 staff

From seven departments

Into four new teams

Aviation Services

Business Intelligence

Business Management

Technical Services

It has been a bumpy road…
What we’re doing now

- Align services with customer needs
- Establishing best practice operations management
- Technology integration
- Optimising operational practices

Driving service improvement
What we’re doing next

- Technology improvements
- Process consolidation
- Further service introduction
- Service improvement
Service improvements, future priorities

Early digital enablement
- Interactive online forms
- CAA customer portal
- Exams
- Website upgrade

Delivering service excellence
- Easier to transact with
- Ability to track applications
- Reduced processing time
- Improved data quality
Delivering service excellence

Our strategic goals

Working together

Your need for a CAA that’s easy to do business with
Help shape our customer journeys

Harry Simmons – Complex Operator - Audit Scheduling
As Head of Operations this is really something my team get involved in rather than something I engage with directly myself, but I’m very aware when things impact operations and delighted when we can do things more easily...

Key take-outs:
- CAA are organised and can help me minimise costs
- I can see how info I give the CAA helps me – I want to do it more
- CAA respect me and value me as a customer

Needs
- AOC Renewed
- Accountable Mgr Meeting
- Desk Based Audit
- AOC Variation
- Audit Approaches
- AOC Audit

CAA - Portal
1. My updated Portal account shows notifications, applications in progress, priority forms and upcoming inspections. I can update my own key dates and key personnel so the schedule can be built around my needs.
2. Check summary AOC info and key details.
3. Entity risk picture reviewed – proposed Audit Schedule and Audit Priorities determined.
4. Email alert to let me know Audit proposals updated and to check Portal for updates.

CAA - Audit App
5. My updated Portal account shows the pre-meeting proposals and summary of EPT info. After the meeting, the schedule is updated to reflect what was agreed. I feel consulted, listened to and informed.
6. Continue meeting dates and attended.
7. Risk consultation held with Harry – discuss and agree audit schedule and priorities.
8. Email alert – describing information required, and request use of Portal to provide.

CAA - PBR
9. Inspector raises request for documentation from Maiden to support desk-based work. Updates system so request on Portal.
10. Inspector visits location to evaluate and approve application for AOC variation.

CAA - Inspector
11. My updated Portal account shows new AOC details and revised Audit schedule.
12. I see the CAA have proposed dates for the Audit inspection – I let the relevant dept know to confirm dates. Delegates go ahead and confirm dates.
13. Check confirmed audit inspection date.
15. Email to inform of proposed Audit date.
16. Inspection carried out – audit findings completed and uploaded to Portal for responses.

Email
17. Shortly after the Audit – on time and well prepared – audit findings are uploaded to my Portal account so I can respond.

Benefits to CAA:
- More efficient scheduling
- Fewer queries and contacts
- High customer satisfaction

Key differences from as-is customer journey:
A. Fully informed from start to finish and in control of the scheduling
B. Ongoing visibility of history, status and calendar of events
C. Pre-populated data about organisation and task when completing forms.
D. Templated forms to initiate and confirm actions (reduces error and information gaps).
E. App-enabled interaction shortcuts (swipe, tap, etc) to reduce email admin and improve usability.
F. Visibility of risks, findings and oversight activities for all privileges.
G. Online appointment booking.
Getting involved

We need to prioritise

We want to make decisions based on stakeholder feedback

Please help us engage with your organisations as we move forward
Panel Q&A discussion
UK PBR Industry Group (PBRIG) overview

Derek Provan
Airside and Expansion Operations Director of the Transformation Programme – Heathrow Airport
May-14 PBR Conference gave CAA and Industry the mandate to establish a PBR Industry Group.

- PBRIG is comprised of c.20 industry delegates from:
  - Airports
  - Aircraft Operators
  - Air Navigation Service Providers
  - Air Worthiness Organisations
  - Ground Handling Organisations
  - CAA

- PBRIG meets once a quarter with chairmanship shared between CAA and industry.

- Group has met three times this year, a forth meeting is planned for Nov-15.

- Wider virtual team of c.60 industry delegates engaged from Oct-15.
The PBRIG is focused on three main areas of scope

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 peoples skills and safety culture should evolve to support PBR.
The first three meetings have helped to shape the PBR implementation programme

1. Helped to shape the CAA’s approach to identifying and tracking PBR benefits.
2. Developed case studies to consider how safety data may be used to generate better outcomes in a PBR environment (e.g. LED Lights, Satellite Navigation).
3. Considered how best to retain the key features of prescriptive regulation that are valued in different ways across the industry.
4. Considered measures for tracking the reallocation of resources in the CAA and across industry to high priority risks.
5. Provided feedback on the size and nature of the capability / safety culture gap that must be tackled to embed PBR.
The feedback provided at this Conference will help shape PBRIG’s priorities for 2016

1. Renew the mandate from industry to maintain and grow PBRIG.
2. Create awareness and understanding of the PBR changes across industry.
3. Support implementation of the practical changes to processes, working practices and information sharing that are being prompted by the introduction of PBR.
4. Engage EASA with a UK industry voice to strengthen alignment and ensure European proposals are proportionate.
5. Coordinate the development of industry led Sector safety risk assessments to support and inform the regulator’s total system risk analysis.

Starting with the interactive session…
Mark Swan
Director of Safety and Airspace Regulation Group (SARG) – CAA
Morning Wrap Up

1. It’s all about relationships – trust is key across all industry sectors.
2. Industry support for the PBR approach is essential.
3. Industry delivers safety; CAA’s focus is on protecting the consumer.
4. CAA has new skills, toolsets, management approaches to deliver.
5. Online, digital and process efficiencies – enhance PBR.
6. Performance measurement is a key challenge to tackle.
7. EASA alignment / consistency: what more can be done?
8. Future mandate and focus for the PBR Industry Group...
Keynote

Pekka Henttu
Director General of Civil Aviation of the Finnish Transport Safety Agency – Trafi
EASA transition towards a Performance Based Environment (PBE)

Pekka Henttu

29 October 2015
EASA view: PBE = PBR + RBO

Published August 2014
Available [here](#)
Implementation of PBE

Recommendation from MB Sub-Group on the Future of the European Aviation Regulatory System

Review of the EASA Basic Regulation:
- transition to a risk and performance-based approach to regulation and oversight
- support the implementation of SMS and State Safety Programme through the enactment of the European Aviation Safety Plan (EASp)

EASA’s vision:
- proactively work on safety, supported by strong safety analysis capability
- proportionate and performance-based rules
- right mix between prescriptive rules and PBR
- integrated, data-driven, risk-based oversight
Expected benefits of Performance Based Rules

- Resilience of rules
- PBR
- Effective safety management
- Flexibility
Expected benefits of RBO in a growing industry

1) **Efficiency**: better knowledge and analysis will support targeted use of resources

2) **Effectiveness**: increased focus will improve safety
Next developments

Progressive introduction of Performance Based Regulation

The introduction of PBR shall be supported by agreed oversight methodologies

Management of safety information

Training and qualification of inspectors

Conduct of Audits within RBO

Information sharing with other Competent Authorities

Integration with SSP/EASp

Integration with cooperative oversight

Risk profiling

PBE

Progressive introduction of Performance Based Regulation

The introduction of PBR shall be supported by agreed oversight methodologies

Management of safety information

Training and qualification of inspectors

Conduct of Audits within RBO

Information sharing with other Competent Authorities

Integration with SSP/EASp

Integration with cooperative oversight

Risk profiling

PBE
The objective of PBR is to better focus on critical safety outcomes and to increase regulatory efficiency.

- Priority candidates (Implementing Rules) for the PBR approach should be: established through **Impact Assessment** or **Ex-Post evaluation** of Rules discussed and **agreed with stakeholders** on that basis formalised in the **Rulemaking Programme**.

- The introduction of Performance Based Regulations shall be supported by **agreed oversight methodologies**.

- The progressive introduction of Performance Based regulations will be **embedded in the Rulemaking Process** and will be effectively implemented through a robust, transparent and continuous action plan, the RMP.

- Implementation will start as a continuous process in **January 2016**.
Why is RBO interesting?

- Regulatory Effectiveness
- Regulatory Inefficiency
- Illegal
- Unsafe
- No Risk
- Common Cause
- Unique Cause
- Regulatory Ineffectiveness
- SMS Effectiveness

- Data driven
- Targeted use of resources
- Focus on safety
- Positive effect of prescriptive requirements is maintained

adapted from M. Sparrow, ‘The Regulatory Craft’
From RBO to PBO

- Compliance-based
- Risk-based
- Performance-based
Performance based approach in the United States

Steve Gottlieb
Deputy Director, Office of Accident Investigation and Prevention (AVP) – FAA
International good practice #1: CANSO

Eugene Hoeven
CANSO’s Director for ICAO and Industry Affairs
Performance-based Regulation: International Good Practice

Eugene Hoeven
Director ICAO & Industry Affairs
About CANSO

- **Vision**: to be the recognized leader in transforming global air traffic management (ATM) performance

- **Mission**: as the global voice of ATM, represents the views of ANSPs and creates value for its Members and stakeholders

- **Guided by** strategic framework to transform global ATM performance

- **CANSO Members** support over 85% of world air traffic – **88** Full Members; **81** Associate Members
Focus Area – Better Regulation

- Proportionate
- Accountable
- Consistent
- Transparent
- Targeted
Towards a Performance-based Approach

- International standards enhance safety, efficiency, interoperability and global harmonization in ATM
- Standards must be responsive to rapid technological change and, as much as possible, be performance-based
- CANSO supports Standards Roundtable for coordination among standards-making organisations (SMOs)
Prescriptive vs. Performance-based Regulations

**Prescriptive based environment**
- Regulations as administrative controls
- Rigid regulatory framework
  - Inspections
  - Audits
- **Objective: Regulatory compliance**

**Performance based environment**
- Regulations as safety risk controls
- Dynamic regulatory framework
  - Data driven identification
  - Prioritization of safety risks
- **Objective: Effective safety performance**

*Image: Prescriptive vs. Performance-based Regulations as administrative controls vs. safety risk controls.*
Performance-based Regulation

- CANSO has called on ICAO to assist States for effective and sustainable regulatory practices
- CANSO supports UK CAA’s transition to Performance Based Regulation (PBR)
- PBR is a key initiative that supports a Better Regulation approach
CANSO Strategy on Safety

- Implementing an Effective SMS
- Exchanging Safety Information
- Establishing Performance indicators
- Improving Incident Reporting
- Reducing Runway Safety Incidents
Implementing an Effective SMS

- Recent revision brings it in line with ICAO Annex 19
- CANSO Safety Management System Implementation Guide just released
- Offers a pathway to achieve higher levels of SMS maturity (40+ Members take part)
PBN Implementation – a High Priority

- Green RNP Approach
  - Benefits:
    - Lower Noise
    - Less Fuel Used
    - Reduced Emissions

- IDLE THRUST DESCENT = Less Noise

- Todays Vectored Step Down Approach

- Runway

- City

PBN IMPLEMENTATION

TRANSFORMING GLOBAL ATM PERFORMANCE
Continuous Climb Operations (CCO)

Savings per Departure:
70 – 160 kg of fuel
RNP Short Approach

"Short Approach"
RNP Aircraft
RF Leg to Final
Saves 10 miles

Published
95 RNP Procedures
22 Short Approach
The Benefits are Numerous

- Reduces infrastructure
- Improves operational efficiency
- Increases airspace capacity
- Reduces environmental impact
- Improves safety
PBN Implementation Challenges

- States have to develop and publish their PBN Implementation plans
- Implementation is complex and involves many stakeholders
- Involves airspace and procedure design, pilot and ATCO training, aircraft operational approval and aircraft equipment certification
- Regulatory hurdles are a key concern
- To assist, CANSO published a *PBN Best Practice Guide for ANSPs*
How PBR can make a Difference

- Policy must promote a positive reporting culture, a just culture, and robust safety management practices
- Oversight must allocate resources to achieve greatest effect and remain flexible to deal with different levels of safety maturity
- Approvals process could shift great responsibility and accountability to industry to demonstrate the robustness of SMS
- Under PBR, PBN implementation can be sped up by making some adjustments to our respective roles and responsibilities
Questions & Answers

www.canso.org
International good practice #2: Rolls-Royce

Belinda Swain
Chief Airworthiness Engineer – Rolls-Royce Plc
Rolls-Royce and Performance Based Regulation – the story so far

Belinda Swain, Chief Airworthiness Engineer, Rolls-Royce Plc
One Safety Management System

Gas Turbines
- Design
- Manufacture
- Maintain

Global
- UK
- Germany
- USA
- Singapore
...

Not just Civil Aerospace
Nuclear
Marine
Power Systems

Rolls-Royce
Performance Based Oversight

**Challenges**
- Complexity
- Organisation risks
- Cultural change
- Making it simple
- Global/Local
- Choosing & aligning
- Getting the action level right

**Rolls-Royce**

**Do Already**
- Product Risks
- Safety Governance
- Robust occurrence management, root cause, and feedback
- Independent function
- Audit by risk

**Regulator**
- Requirements variation
- Overlap/duplication
- Sensitive information
- Subjective assessments

- Sharing data and actions with regulators
- External Independent oversight
- Governance ensuring action taken
- Independent oversight
- Data aligned with risks
- Understanding of risk areas
- Optimising the capture of risks
- Data aligned with risks
- Independent oversight
- Governance ensuring action taken
- External Independent oversight
- Sharing data and actions with regulators
- External Independent oversight
- Sharing data and actions with regulators
Performance Based Regulation

For Gas Turbines

- Endurance Test
- Vibration
- Birdstrike, Icing
- Open Rotor

For Propulsion Systems

- Address major architecture changes
- Not specific to gas turbines
- Equivalent certification rigor
- Regulators expertise
- Harmonisation
- Integration with other design areas
Conclusions

- On the PBO journey, part of SMS implementation
- Needs to be value added – harmonised approach
- Performance Based Regulation for Gas Turbines, evolution not revolution – at least in the short term
- Needs to be value added – harmonised approach
Panel Q&A discussion
Key Themes

c. 50 unique safety risks or concerns raised:

1. Financial and commercial pressures
2. Pace of change: new technology / regulatory frameworks
3. Remotely Piloted Aerial Systems (Drones)
4. Human factors - fatigue risk, performance of professionals in the system (e.g. mental health)
5. Cyber attack
6. Operations outside controlled airspace (mid air collisions)
7. Managing traffic growth with limited airspace / runway capacity
8. Management of third party contractors (e.g. Ground Handlers)
Outliers

- Volkswagen syndrome – corporate level deception.
- Regulatory shopping – exploitation of the open European Market.
- Influencing safety performance in other States.
- Third party employed professionals on zero hours contracts in safety critical roles.
Top 5 Operational Safety Risks

1. Because of the increased growth in use of RPAS, there is a risk of airborne conflict with commercial aircraft on approach / departure.

2. Because of the commercial pressures and lack of regulatory standards in the Ground Handling community, there is a risk that an aircraft departs in a non-airworthy state.

3. Because of the increased use of cloud based systems and tools, there is a risk of cyber attack.

4. Because of increased pace of technological change there is a risk that key operational staff are not sufficiently able to manage unforeseen emergencies.

5. Because of the increase in commercial operations outside controlled airspace and the pressure to release controlled airspace there is a risk of a loss of separation / mid air collision.
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<td><strong>RPAS</strong></td>
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<td>• Raise public awareness working with manufacturers.</td>
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<td>• Integrated enforcement.</td>
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<td>• Engage local authorities that own green spaces.</td>
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<td>• Geo fencing.</td>
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<td><strong>Ground Handling</strong></td>
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<td>• Expand the regulatory remit (licencing and standards).</td>
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<td>• Tackle commercial issues that add operational pressure.</td>
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<td><strong>Cyber Attack</strong></td>
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<tr>
<td>• Raise industry awareness of the issue and options for greater protection.</td>
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<td>• Build links with other key agencies.</td>
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Options / Action (owners)

Pace of Change
- Strengthen dependency management.
- Stronger focus on training / re-training.
- Engagement in automation good practice.
- Closer links between OEMs and Operators on the adoption of new technologies.

Operations outside controlled airspace
- Surveillance solutions.
- Collaborative engagement in airspace redesign across GA and commercial operations.
Conclusion

Mark Swan
Director of Safety and Airspace Regulation Group (SARG) – CAA
Survey feedback

To maximise the value of the conference –

your feedback is essential

www.surveymonkey.com/r/CAAPBR