



EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT



Performance-based safety regulation

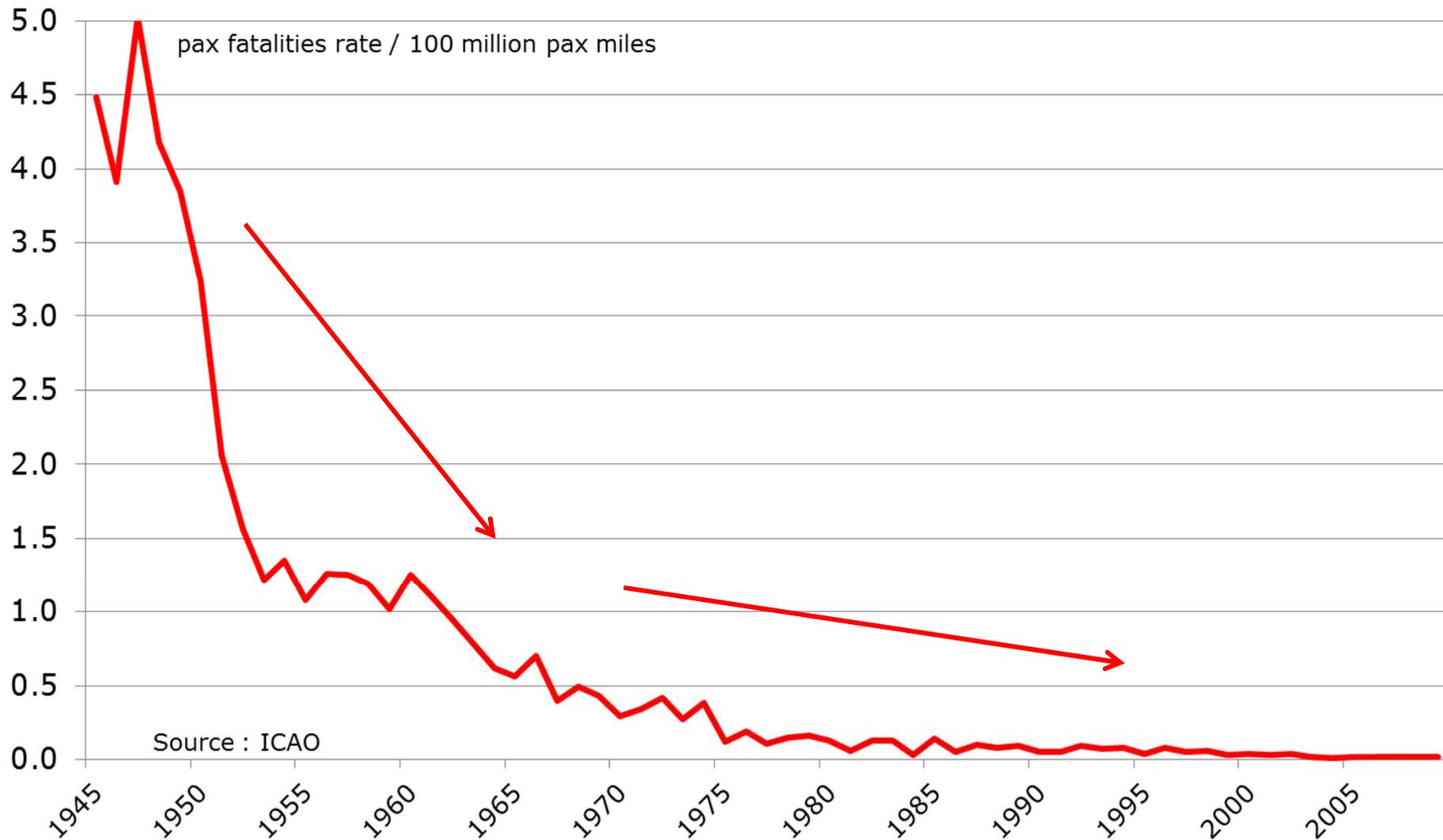
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Your safety is our mission.



Evolution of Safety





Definitions

- **Prescriptive Regulation:** A regulation that specifies requirements for mandatory methods of compliance.
 - *Associated key word: **Compliance***

- **Performance-Based Regulation (PBR):** A regulatory approach that focuses on desired, measurable outcomes.
 - *Associated key words:*
 - **Performance**
 - **Effective compliance**



To illustrate

- **Prescriptive rules** (design of large aeroplane):
 - *CS 25.807 / 813 / 815: emergency exists – dimension, number of exit doors and width of the aisle are given*
- **Performance-based rules**
 - *CS 25. 807 and 810: sliding chutes must deploy within 6s + emergency evacuation in less than 90s – compliance by actual demonstration*

- **Another example in the field of air navigation:**
 - ANS performance scheme - (EU) No 390/2013 – indicators and targets related to environment, capacity (traffic), navigation (ex: separation) and safety



What's new with PBR?

- ▶ **We are trying to extend the concept of “ safety performance” to:**
 - ▶ Complex systems and Organisations.
- ▶ **New ICAO Annex 19 – *Safety Management* – focuses on desired, measured outcomes for:**
 - ▶ Services providers (SMS) and States (SSP).

•A Performance –based environment (**PBE**) comprises:

- measurement of safety performance through SMSs and SSPs;
- Performance-based rules (PBR) and -oversight (PBO)

PBE

PERFORMANCE
BASED
REGULATIONS

RISK BASED
OVERSIGHT



Underlying concept to PBR / PBE

- Measurement of Safety (performance)
 - **“You can’t manage what you can’t measure”.**
 - Safety Performance Indicators (**SPIs**) associated with **targets** are the tools.
- **“What”** to measure and **“how”**
 - Must be Specific, Measurable, Achievable, Realistic, Sensitive to safety, Representative of the activity (usefulness), Cost-beneficial...;
 - Systems easy to capture reliable data;
 - Can be associated to the measurement of risks



PBE: Enablers and challenges

- Data collection - common terminology
- Open-reporting environment + protection of information and people
- Cooperation and sharing
- Mature SMSs and SSPs

- Responsibilities and Enforcement
- Data Driven Decision making based on SPIs (intelligence - big data)

- Resources, cultural change
- Oversight



Prescriptive Rules vs PBR = better rules

Prescriptive

- Simple (reactive) philosophy per domain
- Simple oversight: you comply or you don't
- Often: one fits all (no proportionality)



PBR

- No matter "how": only the outcomes count
- Improved understanding of risks and mitigations
- Flexibility and proportionality
- Better targeting of resources
- Address the regulatory gaps between domains (interoperability)





EASA and EC with PBR?

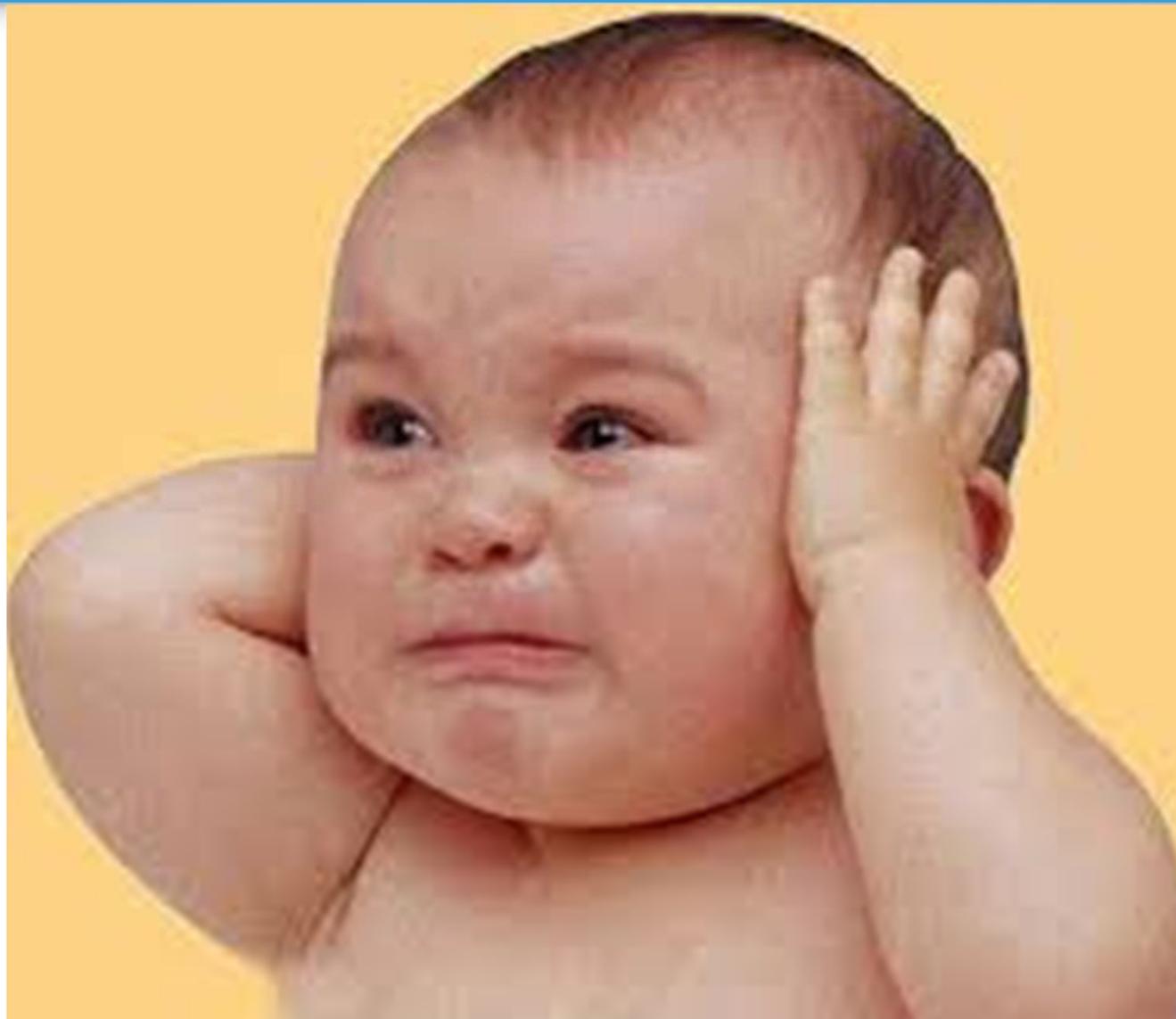
- **Currently efforts aim at modernizing the European rules:**
 - Better rules by assessing the limits, inconsistencies and differences of the current rules in all domains;
 - Introducing “proportionality” and “flexibility”;
 - EC Study launched on “how to introduce more PBR”
 - Reviewing the ANS performance scheme;
 - Considering any option how to move towards PBE.
 - Introduction of Annex 19 concept in all domains
 - including the concept of “Performance”, “Risks” and “PBO”.
 - The EASP coordinates and harmonizes the deployment of SPIs, SSPs by the European States;
 - With the help of a network of analysts and the use of ECCAIRS – identification of performance indicators



Conclusions

- Performance-based regulation (PBR) would:
 1. not replace prescriptive rules but rather complement it.
 2. continue to improve or maintain safety
 3. give flexibility how to achieve it but is not a relaxation of the rules
 4. take time to implement and mature
 5. Be a game changer for oversight

- PBR is central to EASAs future plans.
 - With the help of our partners.





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Thank you for your attention



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easa.europa.eu



Literature

- Managing safety in a performance-based environment:
<http://easa.europa.eu/conferences/pbo/>
- EASA will post a paper on PBR on its website in the coming weeks.



Introduction of PBR: several options under scrutiny

1. SMS/SSP (already in motion – ICAO Annex 19)
 - Discretion left to the State and its service providers
2. Performance scheme
 - Better appropriate to organisations?
3. SPIs directly introduced into the rules
 - Better appropriate to systems?
4. Acceptable Means of Compliance versus Alternative MC
 - Only high level objectives in the hard rules - An approach to flexibility?



XXX

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