

# How the Federal Aviation Administration Uses Risk-Based Decision Making to Further Aviation Safety

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## **FAA risk-based decision making**

FAA's risk philosophy is to respond to threats to safety with a timeliness and manner in keeping with the severity and probability of the event.

The FAA has established specific processes and directives to incorporate risk evaluation into the decision process.

It is in the Public Interest to have an operating aviation system.

Applicants (manufacturers, airlines, repair facilities, etc.) are responsible for safety. The FAA is responsible for ensuring compliance to the regulations (oversight), along with assessing when rule changes are required to ensure intended levels of safety.

## Risk management

Order 8040.4B, Safety Risk Management Policy, supplemented by specific organizational processes, provides guidance to the FAA and applicants for the evaluation of the risk of operational events, compares the risk to allowable long-term and short-term guidelines, and indicates the desired timeliness of corrective action.

The FAA *manages* risk; this implies there is something to manage it *to* – that is, we need guidelines for what is acceptable (tolerable) risk.

Zero risk is unattainable without immediate intervention (grounding).

## **The benefits of risk management**

Ensures that continued operation is acceptable.

Allows for objective and consistent assessment of unsafe conditions.

Allows for mitigation of unsafe conditions with the most optimum use of resources within an individual problem or issue.

Helps to prioritize use of resources across problems or issues.

## **FAA uses risk management to determine how much oversight to provide**

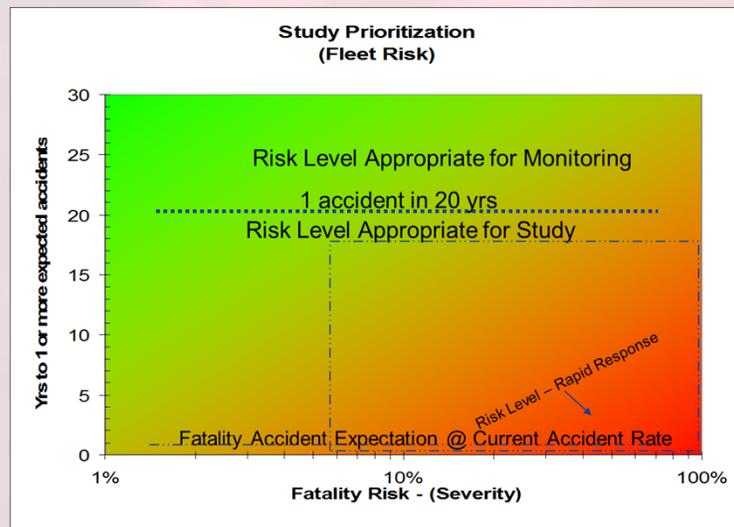
Order IR8110.102, Implementing Risk Based Resource Targeting (RBRT), allows delegation (approval) of certification requirements dependent on the complexity of the rule, the severity of potential consequences for non-compliance, and the technical maturity of the external organization.

FAA aviation safety offices are required to develop and implement a standardized safety management system based on risk management to ensure the most effective safety oversight of applicants and certificate holders. This includes identifying risk, and providing management options to mitigate that risk through targeted application of resources.

## **Joint FAA-industry safety efforts**

The FAA operates safety teams in collaboration with industry stakeholders to discover, analyze, and develop mitigations for systemic aviation safety issues. Vital aspects of these efforts are the prioritization of issues with the greatest risk and the choice of mitigations based on their estimated risk reduction and cost-effectiveness.

The continuous risk prioritization "matrix" used by the Commercial Aviation Safety Team (CAST) avoids many of the issues of the traditional RYG matrix.



## **Organizational risk**

Procurement and project management in the FAA rely on risk assessment to help ensure timely and effective deployment and implementation.

## **Contact information**

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Questions/Comments?