

# Monitoring With Few Events



## Problem

FOQA/FDM programmes normally gather large amounts of flight data for analysis, the objective being to identify and act upon trends in the data. This works well for the analysis of a large number of events, but for low event rates, statistical analysis is less effective. Small operators, especially corporate and privately owned aircraft, experience few events. Similarly, operators who have eliminated routine patterns of events will have only residual incidents. These operators require a new way of working that will provide flight safety benefits where event rates are low.

## Analysis

### Small operators

Not only do small operators have fewer flights to analyse but they may not have a routine pattern of operations.



For example, Flight Data Services (FDS) monitored a privately owned aircraft that flew to Dubai the day before the opening Formula 1 Grand Prix race of the 2006 season and returned the day after the race. We can be fairly sure the VIP on board will not fly to Dubai again until the next season.

In such cases, safety monitoring techniques that rely upon building statistically meaningful results, or worse still, that wait for a trend in the data, will fail to identify problems with this airport using data from this aircraft alone.

### Other operators with low event rates

An operator who has eliminated the causes of all routine events, and maintains an effective monitoring process to ensure no new patterns emerge, will have residual events with no clear statistical pattern.

These events will be random instances of aircrew making unpredictable errors, so patterns will be weaker. Furthermore, experience indicates that these errors may be more serious in nature and will require more investigation to identify the true cause.

## Discussion

Can FOQA/FDM be used by operators with low event rates? Yes. However, to maximise flight safety benefits, the operator needs to take a different approach to that used by a large operator. The difference is each event must be investigated separately. The Flight Safety Professional must be prepared to act upon lessons learnt from few or even individual cases, as well as using statistical patterns where they are available.

FOQA/FDM analysis will only tell you what happened, not why it happened. Thus, the emphasis shifts from using statistical patterns to learning from investigations of few cases. With few events, it becomes even more important to seek the assistance of the pilots to understand exactly what led to each event. Only by addressing the cause of the event can flight safety be improved.

## Case study

To find out how an airline was able to improve operating procedures following analysis of few events, please request Case Study 1.

FDS helps customers to identify safety issues in their operation and then achieve measurable reductions in event rate.

### How will you improve flight safety in your operation?

## Find out more

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