



ECA
Piloting Safety

Fatigue Risk Management in Europe

Essential Requirements for its Successful Implementation

Since 28 October 2014, *Safety Management System* (SMS) and *Fatigue Risk Management* (FRM) are expected to be reality in every European airline. No doubt this will be a change of paradigm. From the rostering and safety department's point of view, it will not be sufficient anymore to schedule a flight duty by simply sticking to the prescriptive limits, set by EU legislation. In addition to that, a risk assessment on fatigue will have to be performed for the flight duties in accordance with the Safety Management System procedures.

SMS and FRM have to be seen as the premises of a future EASA *Performance-based environment*. Performance-based regulation and oversight can be understood as a regulatory and oversight approach that focuses on desired, measurable safety outcomes, rather than only mechanic compliance with prescriptive limits or procedures¹. However, to grant flexibility to the operators, EASA has refrained from clearly defining detailed guidelines for the implementation of a mature SMS and FRM, providing instead a rather general framework of guidance. This lack of detail could fuel improper understanding of FRM (and SMS) objectives and the way they are to be implemented. More detailed guidance is likely to be required in the near future to direct not only the operators but also the National Aviation Authorities (NAAs) who have to oversee the implementation and application of SMS and FRM.

This position paper outlines the essential basic requirements and principles that shall be present in any Fatigue Risk Management.

SMS versus EASA FTL Fatigue Risk Management

There tends to be a general misunderstanding that Fatigue Risk Management will only be required with the application of the forthcoming EASA FTL rules (Reg. 83/2014) in February 2016. However, fatigue is to be considered as a safety risk like any other operational risk. This means that fatigue risks must be evaluated and managed under the SMS procedures that every operator is obliged to have introduced since Oct. 2014, according to 'Air Ops' Reg. 965/2012 (ORO.GEN.200). A SMS that omits to mitigate crew fatigue as a specific hazard is not compliant with the related EASA rules.

¹ See ECA's forthcoming position paper on Performance-based Regulation & Oversight, Dec. 2014.

In addition to this general requirement, a complete and mature FRM – as described in AMC1 ORO.FTL.120 – will be required for some provisions in the new EASA FTL regulations (Reg. 83/2014 and related Certification Specifications, AMCs and GM), as well as for any deviation or derogation from these regulations.

An effective Just Safety Culture

Weaknesses in safety culture undermine the global performance of any SMS and FRM. Building a strong, positive safety culture takes deliberate, concerted and continuous effort, based on ‘Just Culture’ principles² and a trust-based partnership between management and operational staff. It is only in such an environment that air crew will feel confident and encouraged to report incidents, including fatigue.

Unfortunately, destroying a safety culture is a lot easier, than building it. It should therefore become a must to periodically audit the effectiveness of the safety culture by an external entity. To achieve truly non-biased objectivity requires an external entity.

At the beginning of the development phase, i.e. before the FRM is actually being set up – such an external audit is an absolute necessity, to ensure the company’s safety culture foundation is mature and inclusive enough to ensure an effective FRM.

Initial & recurrent training

People involved in the development and implementation process must have received an initial training on fatigue management. Rostering, crewing, managers, and crew members will all come with their personal experience and perception of fatigue and how to mitigate it. It is very important to share a common understanding on fatigue issues and on its management before starting the implementation of a FRM. This is also true if fatigue risk is ‘only’ managed under the SMS.

In addition to such initial training, recurrent training of all relevant categories of staff is to be provided on a regular basis, as required by EASA rules, and in particular in organizations with a high turnover in air crew.

Active involvement of crew representatives

To avoid an excessive complexity on very small structures, EASA’s rules do not enforce the involvement of crew representatives, but instead mandates ‘only’ an “*on-going involvement of flight and cabin crew members*” (AMC2 ORO.FTL.120(b)[2]).

However, for any operator and in particular for medium-sized and large operators, the active involvement of the *crew representatives* is a must, both during the development phases, and thereafter on an ongoing basis, in the Safety Action Groups (SAG) and/or the Fatigue Safety Action Group (FSAG). Any operator with complex operations should

² For a ‘Just Culture’ definition, see EU Occurrence Reporting Regulation 376/2014, Art. 2(12): “ ‘just culture’ means a culture in which front-line operators or other persons are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but in which gross negligence, willful violations and destructive acts are not tolerated.” --- See: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0376&from=EN>

set up a permanent FSAG to allow for an appropriate management of the organization's fatigue risks. Specific Terms of References (ToR) should describe the composition, the responsibilities and duties of the (Fatigue) Safety Action Group, and detailed minutes should be kept of the meetings and the decisions taken.

It is noteworthy that the involvement of 'management pilots' in the development of a FRM and, subsequently, in a (F)SAG will not provide the same input from operational personnel as the involvement of crew representatives that are independent from management. Nor will management pilots be able to generate and maintain the same level of trust and buy-in among the air crew as will crew representatives.

At the same time it is crucial that crew representatives as well as management are focused on enhancing safety rather than promoting industrial considerations or using the FRM to pursue commercial/productivity objectives.

Avoiding a "Paper Tiger"

For the operators with a low or only a recent experience in risk management, implementing a mature FRM is a real challenge. Common sense has to lead the process, based on existing guidance and best practices. In 2011, ICAO published a FRMS Manual with Guidelines on the implementation for the operators that should be closely followed by all operators, and especially by less experienced operators.

Emergency brake

The (Fatigue) Safety Action Groups should ensure that safety actions are implemented within agreed timescales. In case of FTL deviations/derogations that have been granted based on the existence of a full and approved FRM, it is paramount that safety issues are corrected in a prompt time frame. Members of the (Fatigue) Safety Action Group must have the opportunity to stop the specific operation (which has been granted as a deviation/derogation, based on the FRM) if their recommendations are not implemented.

Regular contacts between the crew representatives and the National Aviation Authority in charge of oversight should be established to allow the reporting of weaknesses in the functioning of the FRM that should be corrected as a matter of urgency (rather than waiting until the next NAA audit of the operator).

Scientific knowledge & principles

Any management of fatigue risks – and especially under a dedicated FRM – must be based on state-of-the art and peer-reviewed scientific knowledge and principles. The company's FRM process should make provision for benchmarking operations against such knowledge and principles. In the case of deviations/derogations from the prescriptive FTL rules, external scientific and medical experts should be involved during the development phase, as well as later during the implementation of the FRM. These experts must have access to the operational staff, incl. staff representatives, and be encouraged to obtain their feedback. They should equally have access to (F)SAG meetings.

Peer-reviewed bio-mathematical models and related software to predict fatigue levels for specific operations can be a useful additional tool for the management and of fatigue risks, but they cannot be used in isolation, nor be the main driver of roster compliance, but rather help to identify potentially fatiguing rosters. Over-reliance on such models and software can promote complacency and constitute a hazard on its own.

Oversight by the Authorities

National Aviation Authorities (NAAs) need to grow rapidly their internal expertise to be ready to oversee and audit their operators' FRM. This requires a specific skills set, different from the one used to audit the compliance with prescriptive rules. Faced with a shortage of resources and growing flexibility demands of their operators, many NAAs may struggle to have the necessary ability to effectively oversee the adequate implementation of FRM by their AOC holders.

- This means: In countries where the NAA does not have such an ability, no operator should be allowed to obtain a deviation/derogation from the prescriptive FTL rules (based on the existence of a full FRM), until and unless the NAA can demonstrate to EASA such an ability;
- Active contacts with other NAAs have to be developed and facilitated by EASA. Information about the performance indicators created and used by the airlines should be disseminated among the NAAs to be properly assessed;
- Any NAA should make best use of the ICAO Manual for Regulators, which provides useful guidance. In addition, EASA should provide detailed guidance for NAAs to allow them to properly assess and oversee their AOC holders' management of fatigue risks.

For any FRM, and in particular regarding deviations/derogations that require a full FRM, a genuine *Tripartite Partnership approach* is required. This means that NAA staff must become closely involved during the development and the implementation of the FRM, as well as in the operational environment once the FRM is live. They should have an open invitation to all (F)SAG meetings and turn up (also unannounced) at such meetings, engage in dialogue with management and operational staff representatives, and mediate if needed. Crucially, NAA staff must be able and willing to intervene if there are serious doubts expressed by either side that the FRM is not functioning anymore. In case of deviations/derogations that have been granted subject to the existence of a properly functioning FRM, this must include that the NAA takes swift action – if necessary by temporarily withdrawing the authorization for the derogations/deviations that require FRM until all stakeholders are satisfied that the FRM is again able to deliver adequate safety management.

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References:

- Commission [Reg. 965/2012](#), especially ORO.GEN.200 (Safety Management Systems, SMS) and related AMC & GM;
- Commission [Reg. 83/2014](#), especially ORO.FTL.120, ORO.FTL.250 & related AMCs;
- ICAO FRMS Manual for Regulators (2012) – [link](#);
- ICAO-IATA-IFALPA FRMS Implementation Guide for Operators (2011) – [link](#);
- ICAO Annex 6, Part I, experts related to FRM – [link](#).

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