

## Experts in Fatigue Risk Management

### Impact of fatigue



Situational awareness



Decision-making



Ability to communicate and interact



Omissions and errors



Ability to oversee unexpected situations

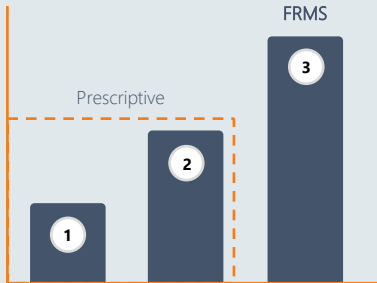
### Fatigue Risk Management approaches

#### Three-step process towards a Fatigue Risk Management System (FRMS)

**FRMS**  
Service providers meet additional requirements to have flexibility outside of prescriptive limitation regulations

**SMS**  
Service providers manage fatigue risks using SMS processes within prescribed limits

**Basic**  
Service providers follow hard limits set by the regulator



#### FRMS benefits

- Comply with ICAO
- Improve employee alertness and general well-being
- Improve operational task performance and safety
- Gain operational flexibility

Based on ICAO Doc 9966 "Manual for the Oversight of Fatigue Management Approaches"

### Our solutions



Research

Data collection methods include: fatigue assessment (survey, log study), sleep assessment (sleep diary study, actigraphy), roster analysis (biomathematical models), as well as workload assessment (survey, site visits).



Solutions

Based on the outcomes of research, To70/Déhora can provide recommendations from setting the appropriate parameters for prescriptive limitations on working hours to the implementation of a Fatigue Risk Management System.



Training

Training topics include: the working of the circadian body clock, sleep and sleep hygiene, alertness during the night, as well as strategies to deal with fatigue, including promoting a healthy lifestyle.





### Asian CAA

Commissioned by an Asian Civil Aviation Authority, a study regarding fatigue management of Air Traffic Controllers was conducted. The study consisted of a benchmark and a fatigue hazard identification. Based on the results, regulation drafts for the management of fatigue were provided as well as supporting measures.

### European ANSP

For a European ANSP, the organization and staffing of (standby) night shifts was analysed. Based on the results of questionnaires, logs, group interviews and roster analysis, a report was delivered with the most important findings, including concrete and hands-on recommendations.



### European airline

For a European airline, the work and rest time patterns of both planned and actual flight assignments were analysed using biomathematical models. In addition, a retrospective survey among crew members was conducted. Based on the results, new limitations on working hours were implemented.



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*As aviation consultants, To70 delivers high-quality consulting and research services to the global aviation community.*

*Déhora Consultancy Group has been the leading specialist worldwide in the area of workforce planning and management since 1987.*

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Fatigue & Roster expert

