



Adding Human Physiology to the Airline Crew Scheduling Process

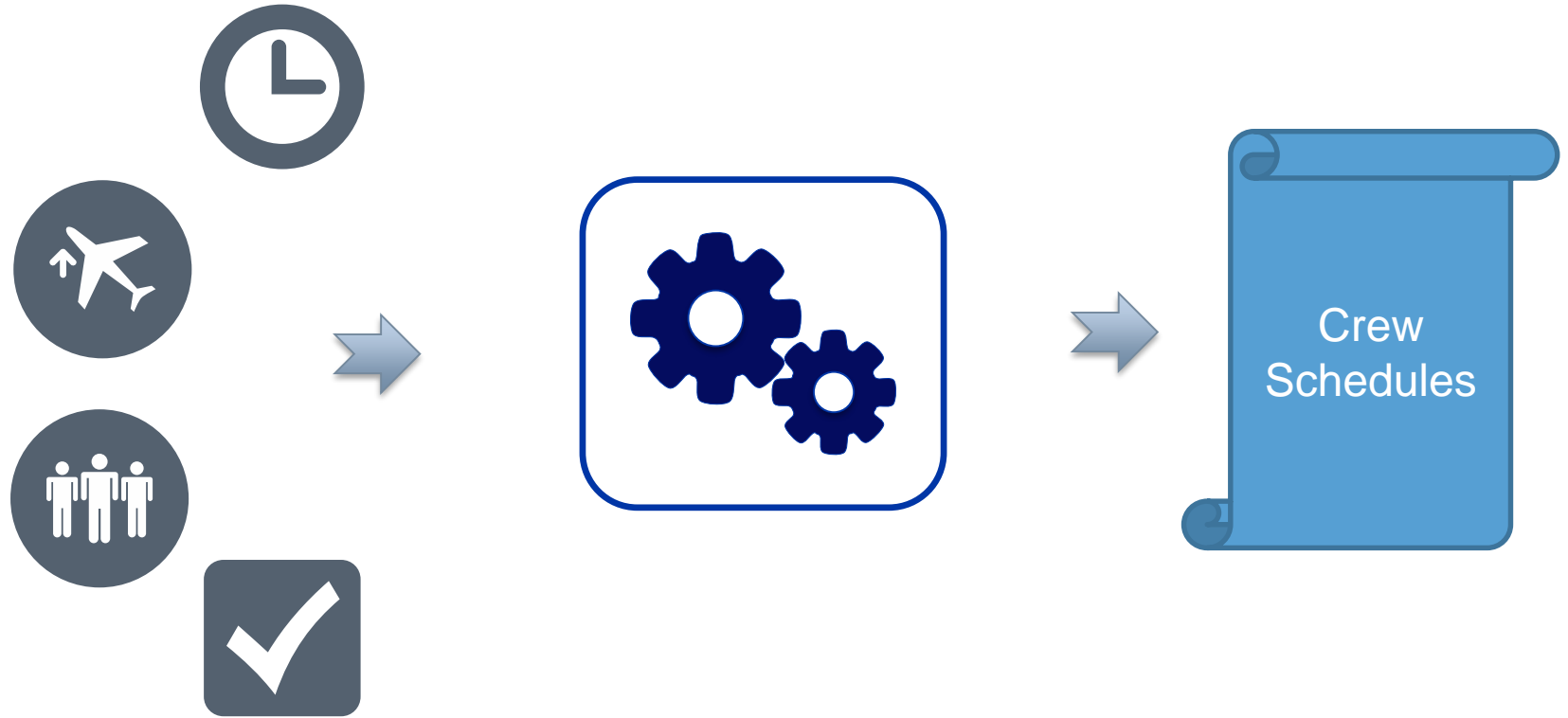
*Managing Fatigue 2017,
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Crew Scheduling 101



Managing fatigue in the scheduling process

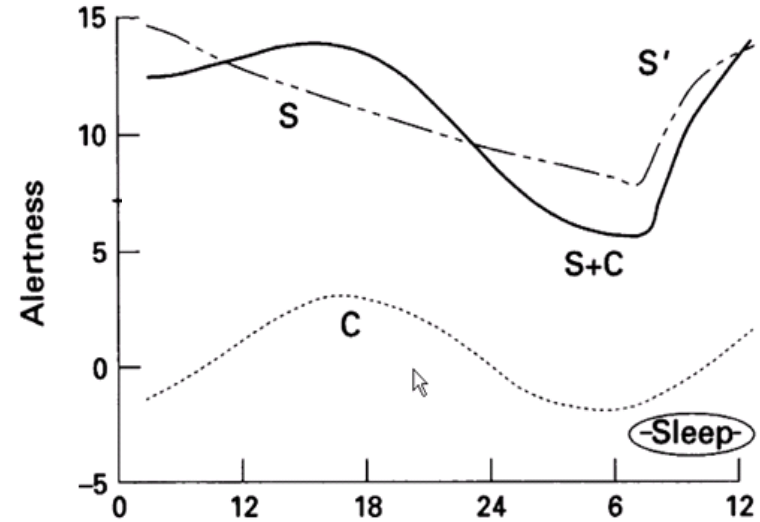
1. Prescriptive rules forbidding undesired work patterns

- EASA FTL, FAR117 etc.
- Airline specific rules

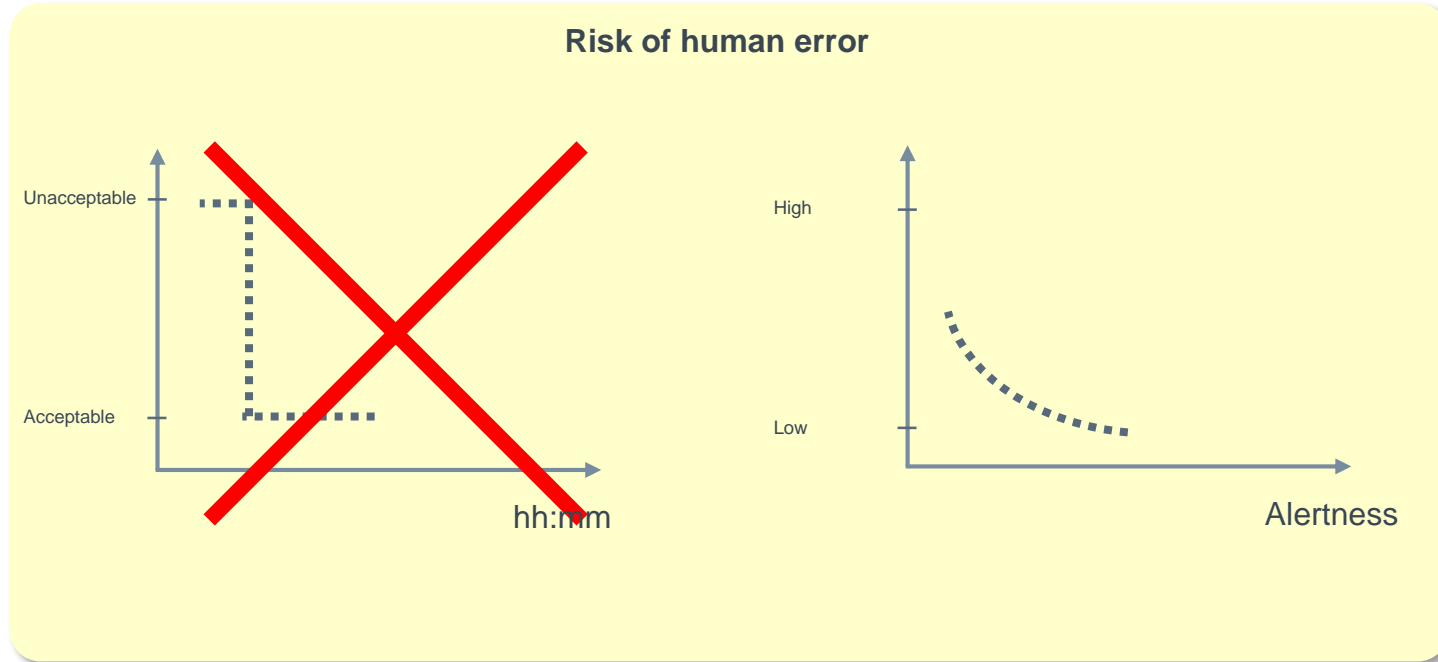
2. Post-planning assessment of rosters using a Fatigue Model

- Manual replanning of selected "worst trips"
- Input to creation of new rules

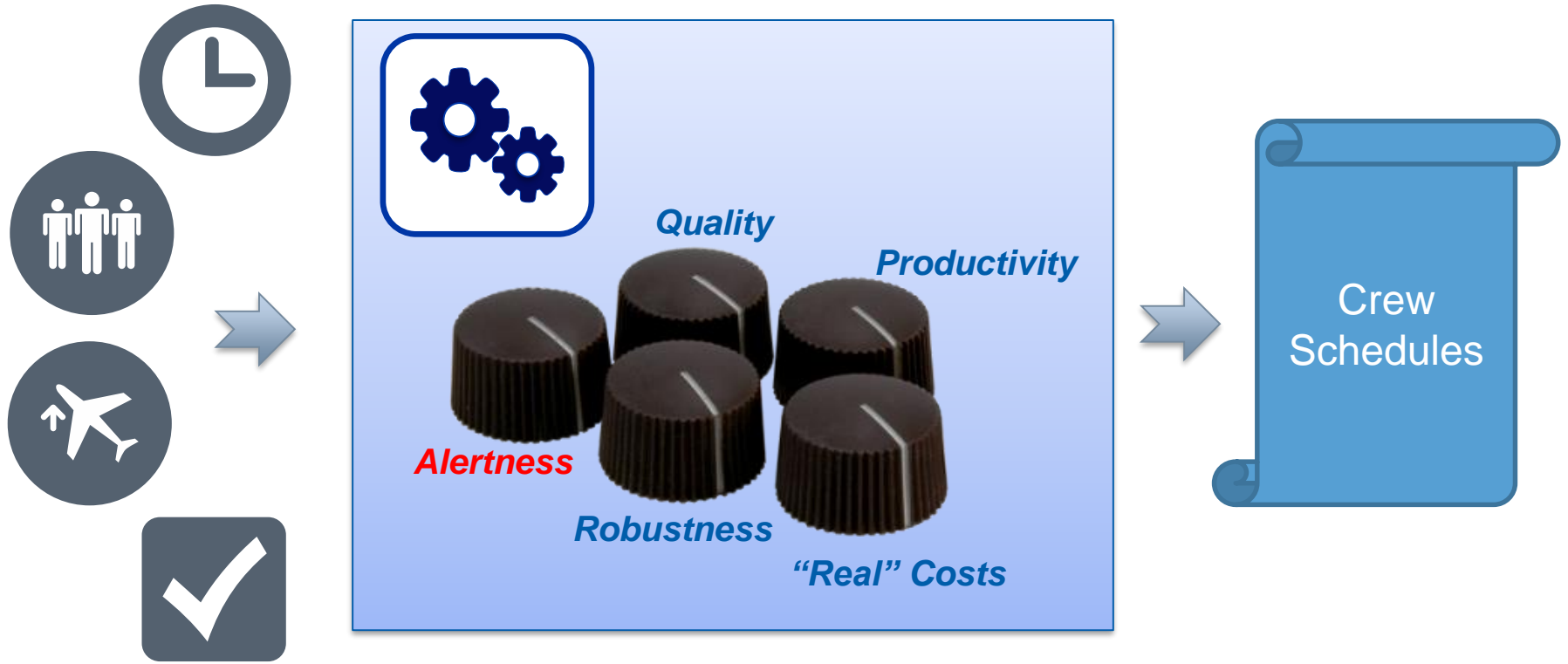
On rules and models



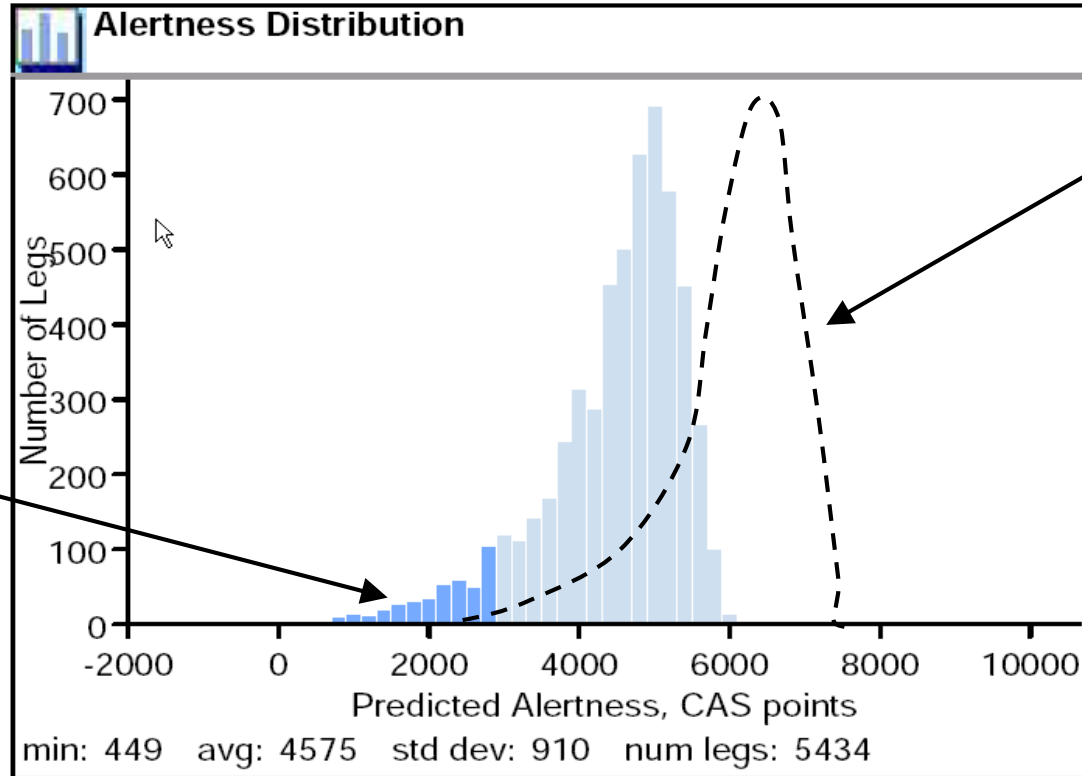
Quantification of risk?



Putting a price on fatigue



Consequences of pricing fatigue



Make the worst flights better

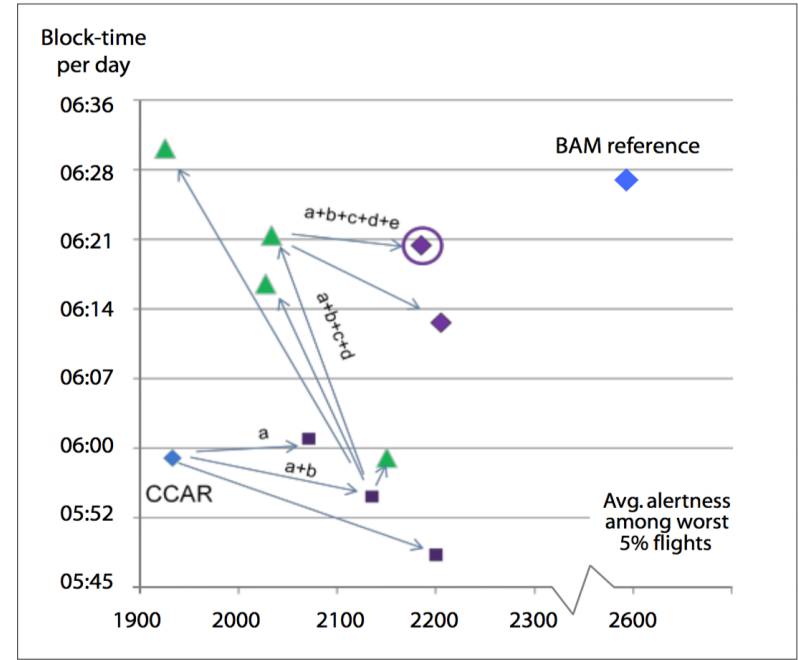
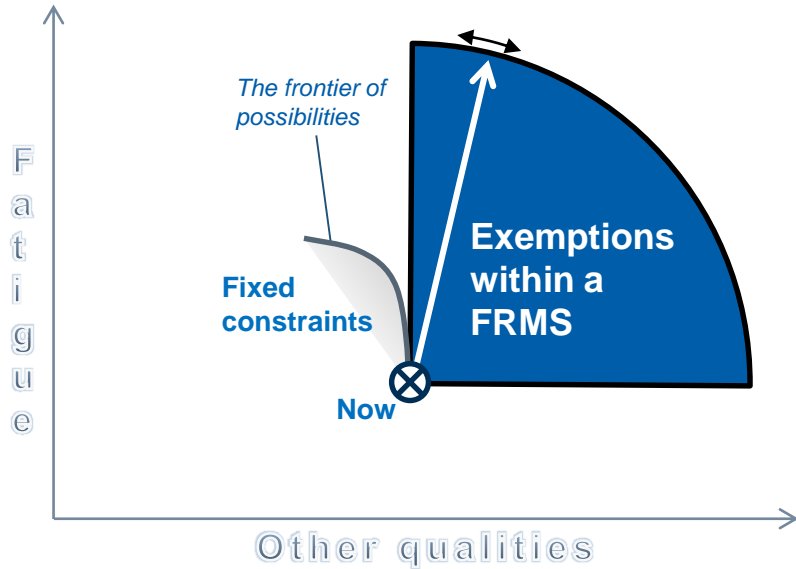
Shift the distribution



Accidents
Serious incidents

Minor incidents
Well-being
Sickness
Morale
Recruitment
Reputation
Industrial action
Productivity
Fuel efficiency

Leveraging Alternative Means of Compliance



Summary

- **Adding a model of human physiology to the airline crew scheduling process allows:**
 - Shifting the entire distribution of fatigue risk in the right direction
 - Reduce the complexity of the planning process:
 - Fewer and simpler rules
 - Fewer manual steps
 - Improve productivity, schedule robustness and crew satisfaction with maintained or improved levels of safety, via Alternative Means of Compliance.

