



# Building Safe & Efficient Rosters

A Practical Airline Experience



# Building Safe & Efficient Rosters

## What we want to contribute ...



**It is NOT the objective of this presentation to display the functionalities of the TUI fly IT rostering system**

- Because there are numerous off-the-shelf IT platforms available on the market that all do this job fairly well!



**We want to share with you principles, attitudes and practises of how we build rosters in our airline and that we believe are safe and efficient**

- However, these are neither meant to be universal nor exclusive, they are our experiences that we like to contribute to this workshop

# Building Safe & Efficient Rosters

## About **TUI fly** (very briefly)



German airline branch of the TUI Group – the world's largest leisure, travel & tourism operator (similar airlines exist in UK, SW, NL, BE)



Operating 35+ Boeing 737NG (-700, -800, MAX to come in 2019)



Short & medium haul to typical tourist destinations in the Mediterranean, the Canary Islands, Cabo Verde, North Africa, Egypt, and the Gulf region



7 A/C are operated as ACMIO-subcharter for Eurowings on domestic and short haul routes



Seasonal long haul operations to the Caribbean existed with Boeing B767 until 2017



Approved FRM



# Building Safe & Efficient Rosters

## The Operational Context

### ORO.FTL.125(a)

*Operators shall establish, implement and maintain flight time specification schemes that are **appropriate for the type(s) of operation performed** and that comply with Regulation (EC) No 216/2008, this Subpart and other applicable legislation, including Directive 2000/79/EC.*

# Building Safe & Efficient Rosters

## The Operational Context

ORO.FTL.125(a)

... or more simple:

*Operators shall establish, implement and maintain flight time specification schemes that are appropriate to the nature of the operation performed and that comply with Regulation (EC) No 216/2000 and other applicable legislation including Directive 2000/79/EC.*



What do you do in your operation?

And what are the typical fatigue risks inherent in this operation that your FTSS has to manage?



# Building Safe & Efficient Rosters

## The Operational Context



# Building Safe & Efficient Rosters

## The Operational Context – in Crew Rostering

ORO.FTL.125(a)

*Operators shall establish, implement and maintain flight time specification schemes that are appropriate to the nature and (s) of operation performed and that comply with Regulation (EC) No 216/2003 and other applicable legislation, including Directive 2000/79/EC.*



How do you roster your crews?

What are the typical threats to the efficiency and stability of your crew rosters?

# Building Safe & Efficient Rosters

## The Operational Context of **TUI fly**

### Safety Impact

### Efficiency Impact

#### Tour operator driven



- Seasonally changing maximum hours
- Unequal work distribution

- A/C patterns follow tour operator business
- Unequal work distribution

#### Short & medium haul



- Disruptive schedules
- FDP's of 6 to 14 hours incl. extended FDP's w/o InFR

- Delays can increase rest due to more disruption
- Less operational buffer at maximum FDP's

#### ACMIO subcharter



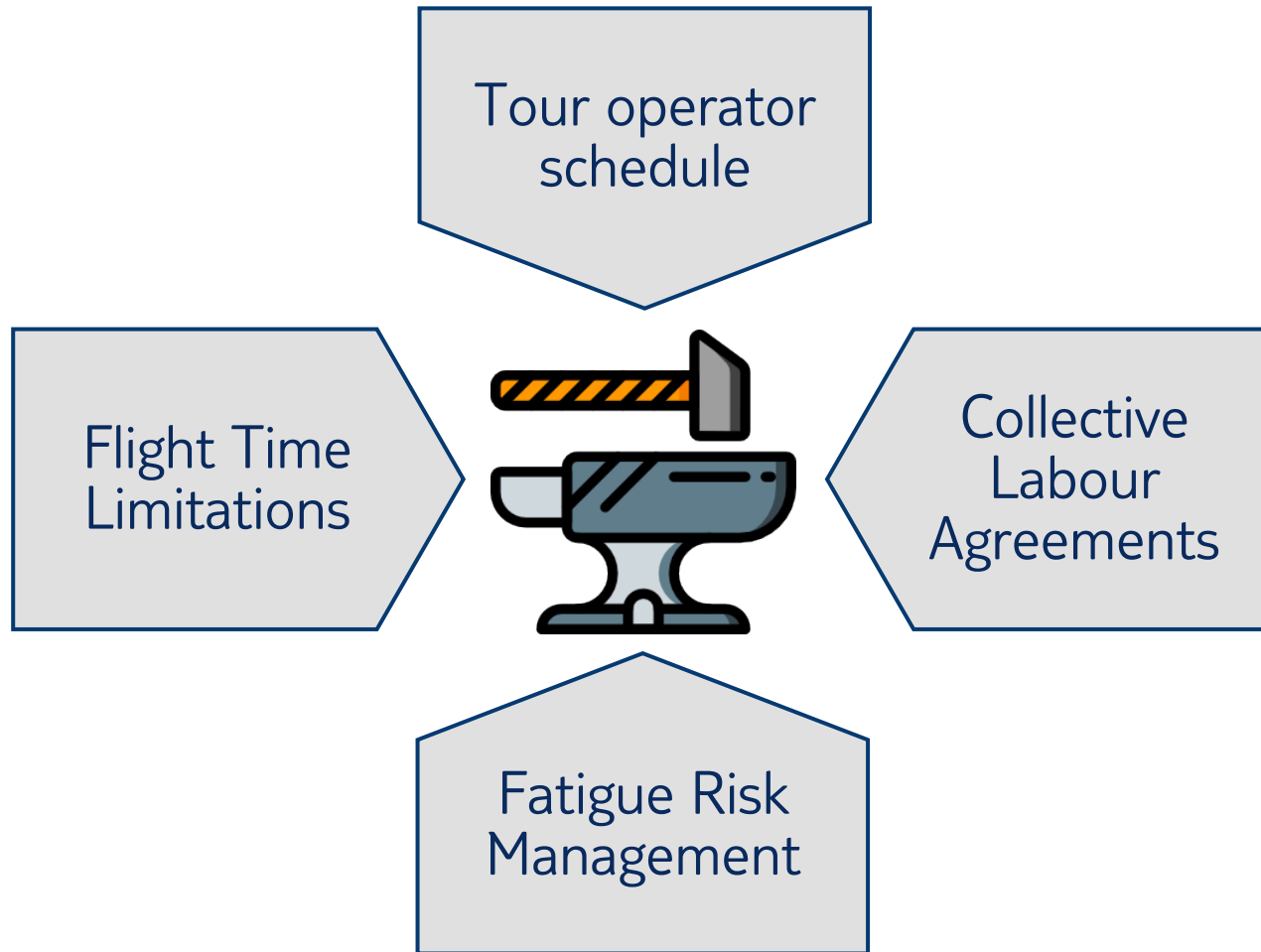
- External charter demands with short-term notice
- Multi-sector flying

- Interference with published rosters
- Re-planning may require monetary compensation



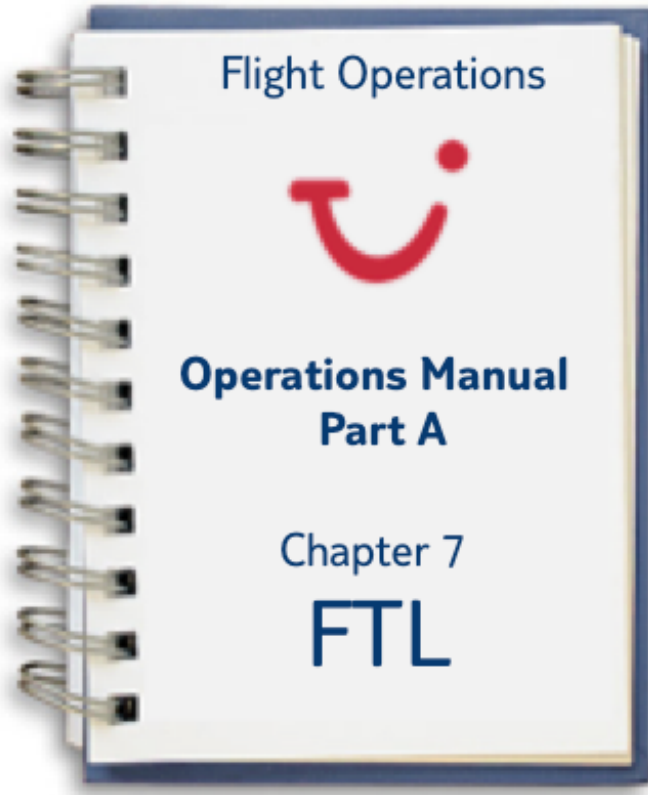
# Building Safe & Efficient Rosters

## Planning Variables at **TUI fly**



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## The **TUI fly** Flight Time Specification Scheme



- FTSS on 41 Pages
- Specific rules tailored to the TUI fly operation
- Concise & transparent for crew planners and crew members
- Far above *'copy & paste'* of EASA FTL regulations

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## FTL versus CLA at **TUI fly**

### Flight Time Limitations

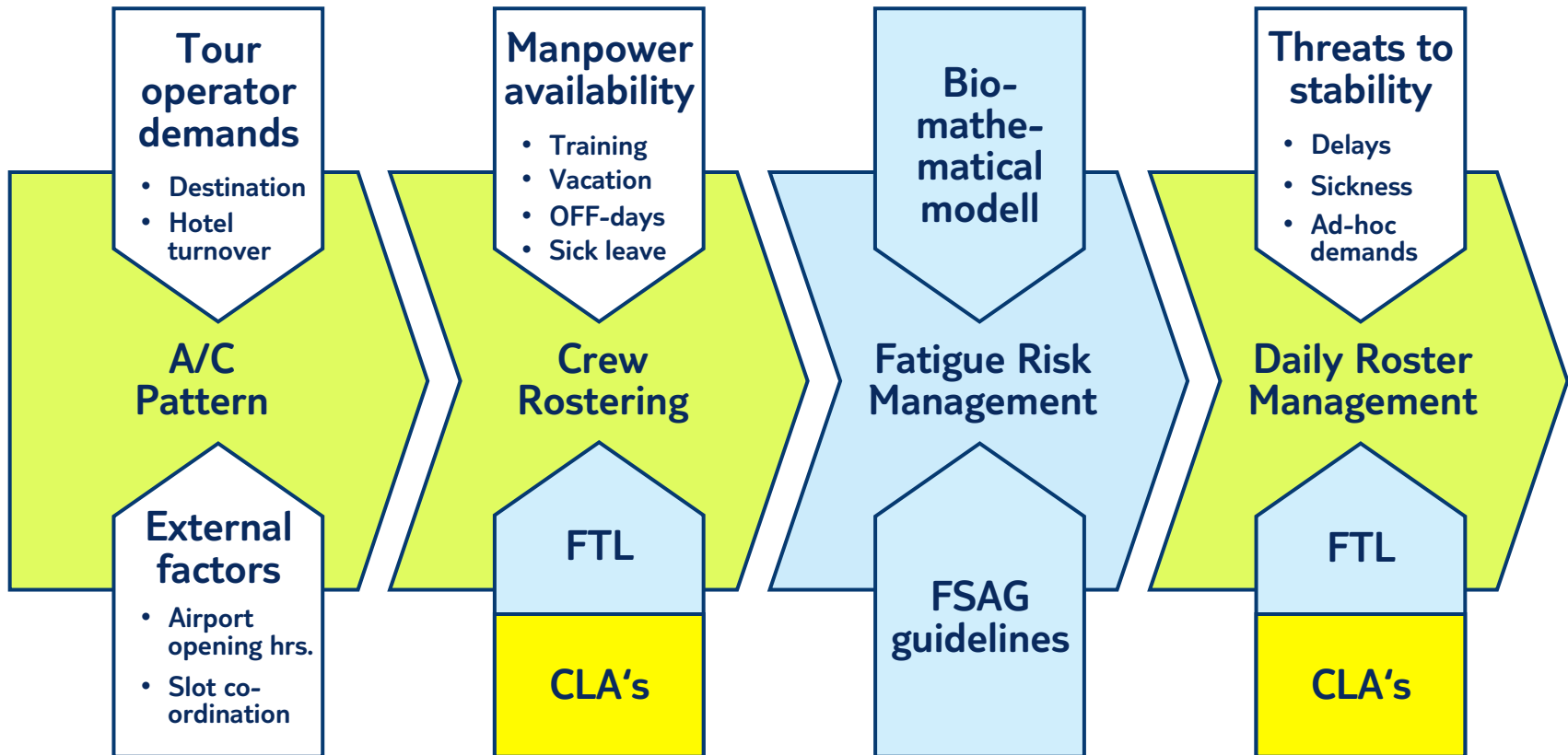
- Prescriptive standard for safe crewing operations
- Only little consideration for social needs of crew members (as in Directive 2000/79/EG)

### Collective Labour Agreements

- Long history and mutual acceptance
- Mainly driven by social needs of crew members
- Often not in line or contrary to current FTL standards

# Building Safe & Efficient Rosters

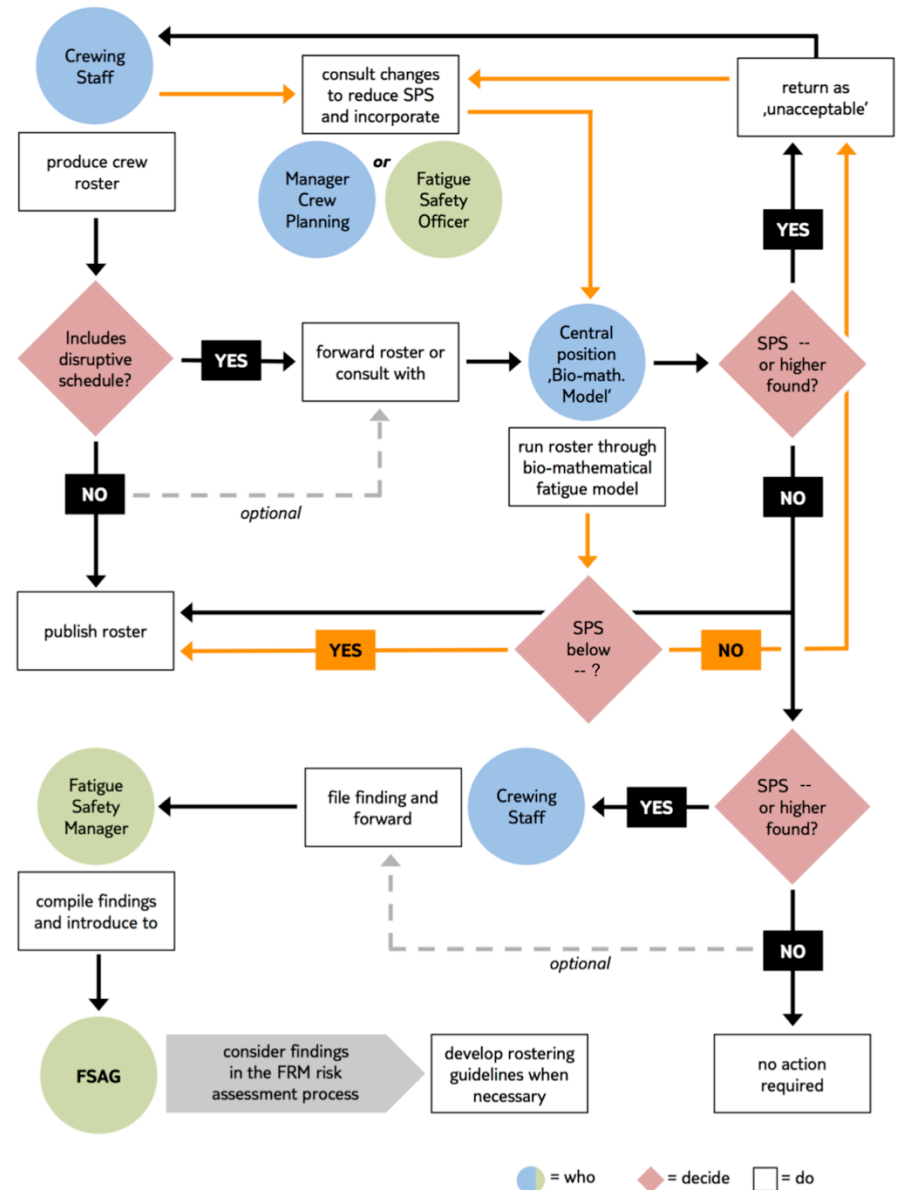
## The **TUI fly** Rostering Process



# Building Safe & Efficient Rosters

## TUI fly FRM in Crew Rostering

- All rosters including at least one disruptive schedule element are run through a defined FRM process prior to their publication
- FRM evaluation by bio-mathematical modell
- Rosters with a certain fatigue score are unacceptable and require re-rostering
- Rosters above a certain (acceptable) fatigue score are compiled for FSAG review





# Building Safe & Efficient Rosters

## Roster Stability

Roster stability is about one simple question:



Always go to  
the limit?

Or better work  
with a buffer?

# Building Safe & Efficient Rosters

## Roster Stability

### AMC1 & GM1 ORO.FTL.110(a)

*The operator should establish and monitor performance indicators for operational robustness of rosters.*

*Performance indicators for operational robustness of rosters should support the operator in **the assessment of the stability of its rostering system.** [...]*

# Building Safe & Efficient Rosters

## Roster Stability

AMC1 & GM1 ORO.FTL.110(a)

Rostering KPI's can answer this question for you!



For example: at TUI fly

- 97,6 % of all actual flight times maintain the planned flight time
- 93,4 % maintain the planned flight time by 10 minutes and more!

# Building Safe & Efficient Rosters

## Roster Stability

AMC1 & GM1 ORO.FTL.110(a)

Rostering KPI's can answer this question for you!

The operator shall establish and maintain a robustness

Performance ratio for operational stability of the ass

For example: at TUI fly

- 97,6 % of all actual flight times maintain the planned operator in

Hey cool, so there's still some efficiency to raise!



# Building Safe & Efficient Rosters

## Roster Stability

AMC1 & GM1 ORO.FTL.110(a)

Rostering KPI's can answer this question for you!

The operator shall establish and maintain a robustness

Performance ratio for operator in the assessment of stability

For example: at TUI fly

- 97,6 % of all actual flight times maintain the planned flight time

Or we just leave it like it is and keep the instability away from our rosters and crews!



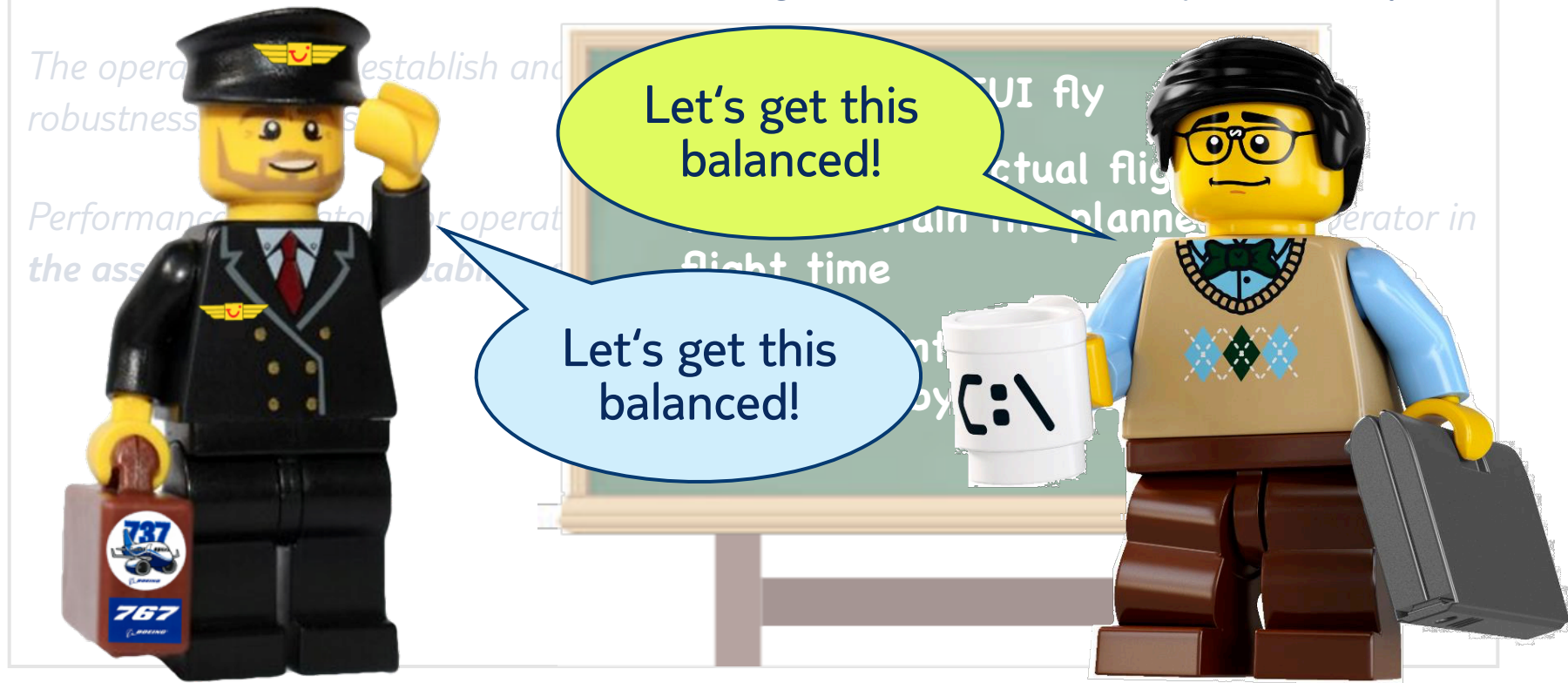


# Building Safe & Efficient Rosters

## Roster Stability

AMC1 & GM1 ORO.FTL.110(a)

Rostering KPI's can answer this question for you!



# Building Safe & Efficient Rosters

## Maintaining Roster Efficiency in Actual Operations

### ORO.FTL.110(a)

An operator shall publish duty rosters sufficiently in advance to provide the opportunity for crew members to plan adequate rest.

# Building Safe & Efficient Rosters

## Maintaining Roster Efficiency in Actual Operations

ORO.FTL.110(a)



Hmmm... Not very much detail, isn't it?

# Building Safe & Efficient Rosters

## Maintaining Roster Efficiency in Actual Operations

ORO.FTL.110(a)



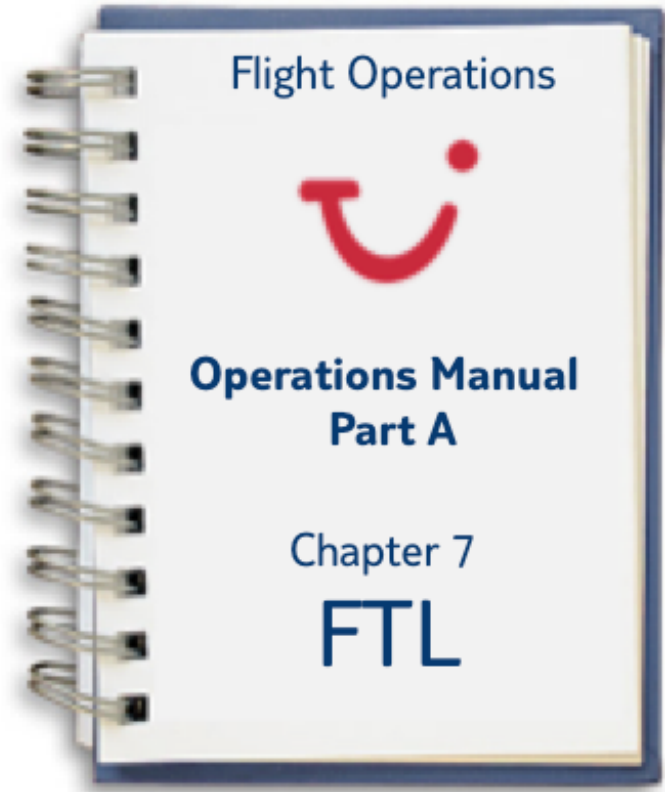
So ... what are the roster changes that you need in order to maintain a high roster efficiency?

And what are your rules for roster changes to manage the fatigue risks that might evolve from these changes?

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## Maintaining Roster Efficiency in Actual Operations

- Rules for roster changes cover two pages of the FTSS
- Rules are aligned along fatigue risks of each roster change
- Main mitigating measures are minimum periods of notice
- Clear and foreseeable instructions to crew members how to cater for roster changes





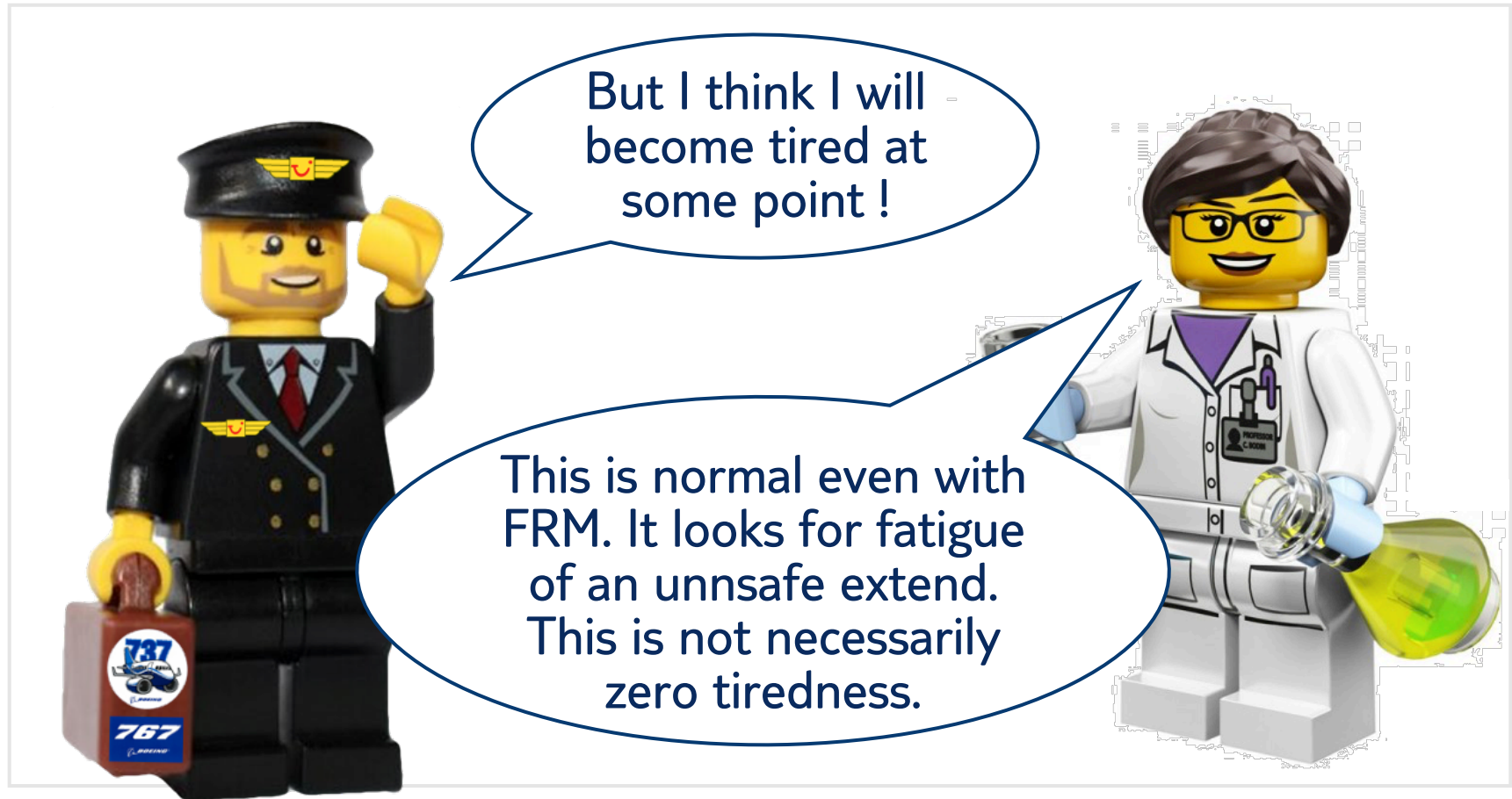
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## A Word about FRM ...



# Building Safe & Efficient Rosters

## A Word about FRM ...



# Building Safe & Efficient Rosters

## A Word about FRM ...

### The Dilemma with FRM

When your FRM does not show any findings, does it mean:

Your rosters  
are safe and  
you do the  
job right

?

You don't do  
it right. FRM  
means that  
you will  
always find  
something



# Thank you very much.



For further questions:

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