

# Freight Flight Fatigue

Cargo Pilots' perspective on FRM during COVID-19 time



# About



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- Member of EASA SAB FS.TEC FTL/FRM group
- Developer of [EU FTL Calculator](#) App
- Member of company FSAG
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- Union representative

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# Domestic Night and Long Haul Cargo Particularities

## Long Haul Cargo

- Long duty days
- **Long rotations**
- Extended wakefulness on duty days
- Circadian disruption
- Shorter sleep periods at wrong times in the circadian cycle
- Split sleep patterns and short sleep episodes on layovers
- Circadian disruption (due to crossing multiple time zones)
- **Circadian drift (changes in circadian pattern) following extended patterns**



# ASL Airlines Belgium Operations

- Cargo operator based at LGG (Belgium)
  - Entity of the [ASL Aviation Holdings](#)
- Short Haul (25 B737 - 2 B757):
  - Domestic night cargo on integrators' market
  - Take off from hub between 03:00 and 04:30
    - + Some additional early rotations around midnight
  - Sleep during the day
    - 10h15 to 14h of rest time
  - Back to LGG between 23:30 and 02:00
    - Back to home or continue duty after a break
- Long Haul (5 B747):
  - East China
  - East USA



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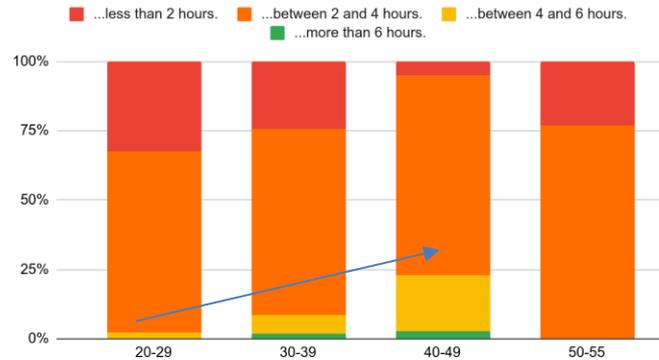


# Main Fatigue Factors

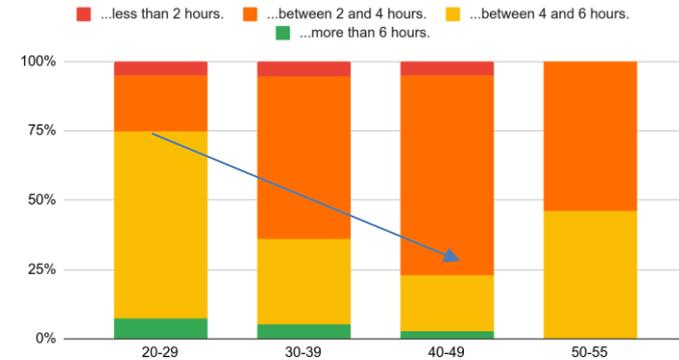
## Domestic Night Cargo

- High workload during WOCL
- Difficulty to rest before duty
- Cumulative sleep debt
- Instability of rosters
- Personal social constraints  
(children, long commuting)

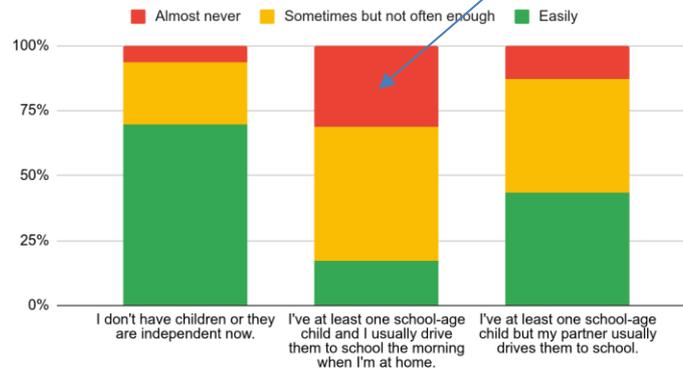
Sleep before departure from LGG on B737



Sleep ON LAYOVER on B737



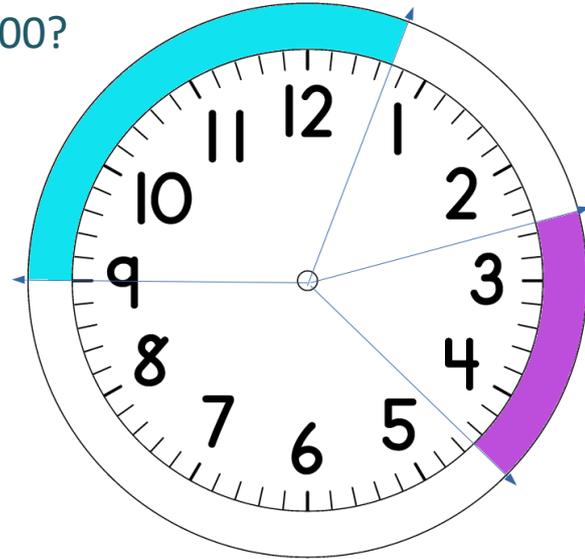
Children Vs Unrestricted nights



# Main Fatigue Factors - Standby

How to prepare your rest at home for a standby 18:00 to 06:00?

- Nap the afternoon?
- Forward your bedtime?
- Respect of the 18hrs awake time?
- Importance to adapt CS FTL.1.225 in your IFTSS!
- **A crew on standby is always a less well-prepared crew.**

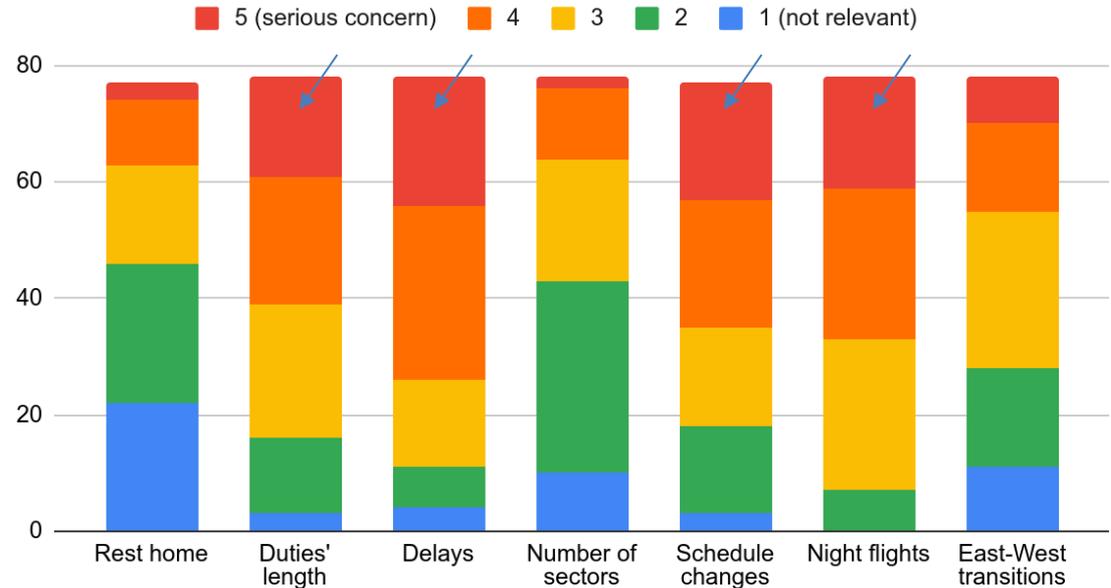


# Main fatigue factors

## Long Haul Cargo

- Length of duties
- Flights encroaching WOCL
- Delays
- Schedule changes
- Jet lag during long rotations
- East-West transitions

Fatigue Factors [B747]



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- FRM Policy + FSAG created in June 2015
- FSAG ToR:
  - 1 meeting per month (steering + full session)
  - Safety/Ops/Crewing/Rostering/Training/Pilot/H&S/Occupational Health
    - No Ops manager
  - Data-driven (Fatigue reports, Statistics, Survey, ...)
  - **Publish recommendations** to FOSAG  $\Leftrightarrow$  Approval  $\Rightarrow$  Binding procedures for operations
  - Communication & Education
  - No industrial issue allowed!!
- Implementation of FRM principles for all our operations



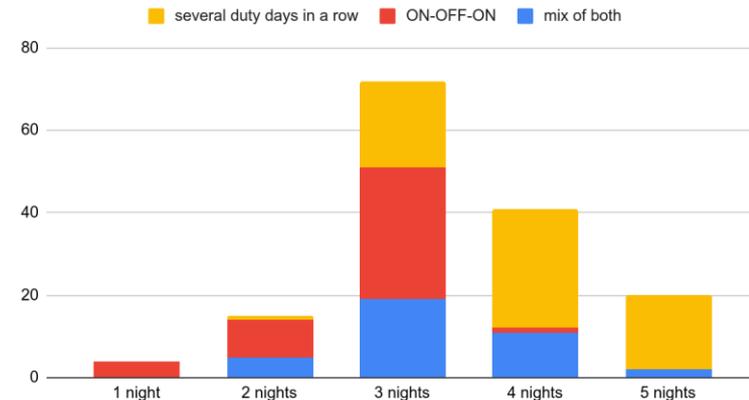
- Initial training to all staff members
- Continuous **learning** (presentation of scientific studies during FSAG)
- Development of **tools** (fatigue report, crewing statistics, annual survey, bio-mathematical models, ...) and **communication** channels (emails, blog, safety screen)
- Several operational **recommendations** (city pairings, standby design, individual duty pattern preference, ...)
- Development of additional training:
  - Sleep science (external expert)
  - Management of unexpected fatigue – CRM
- Implementation of **sleep facilities**



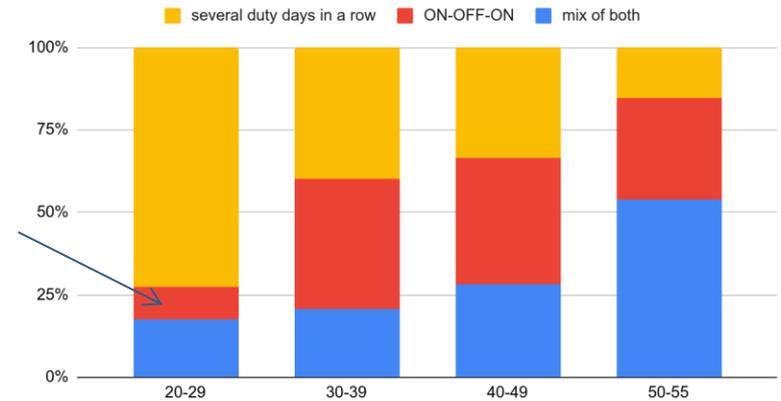
# ASLB FRM achievements

- Sleep pattern changes with age and experience
- Younger pilots prefer duty periods with multiple nights in a row

Number of consecutive night duties manageable Vs preference



Duty pattern preference [B737]



- Rostering tries to adapt duty with pilots' preferences
- Not efficient to assign 4 nights in row to a pilot who cannot cope with it! (higher risk of unfit report)

# Bio-Mathematical Model

- Just a tool among other tools.
- Need to validate the results with other data (reports, operational experience, ...)
- Models for domestic night flights are still **immature!**
  - Too many difference between the genotypes (younger vs older pilots)
- Very accurate to compare duties between them.
- **Don't start an FRM with just a bio-mathematical model!**
- **A bio-mathematical model is not an FRM.**



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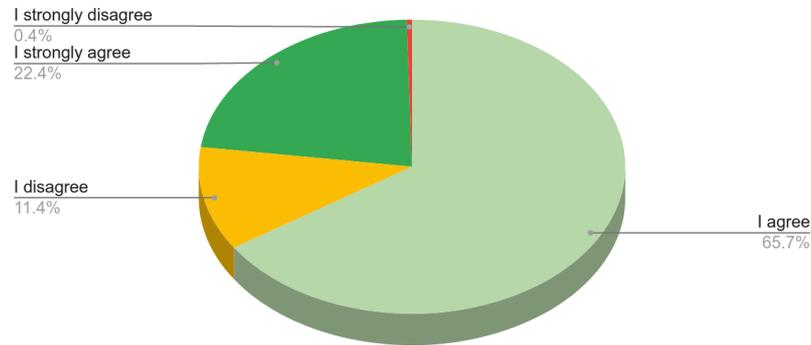
## Question yourself and your organization:

- Did you ever reply to a fatigue report *"Yes, but it's legal"*?
- *"A pilot should always be ready for a max duty at reporting time"*
- *"This duty is not fatiguing; I've done it myself and I was not fatigued"* or,
- *"This duty is not fatiguing; they had enough rest before."*

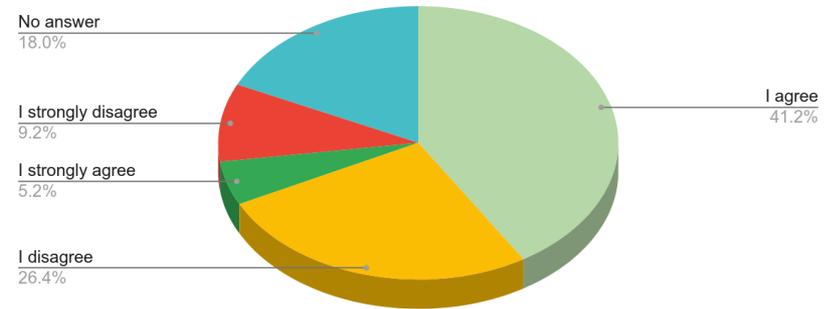


- Changing a culture takes time!
- Try to find a "*fatigue champion*" in the organization.
- Regularly assess your Safety Culture.

I feel encouraged to fill a fatigue report, if necessary



ASLB ensures that the fatigue risks are commensurate with our operations



- Ongoing effort to educate all staff members about fatigue and sleep.
- Never stop developing your expertise.

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# A year with COVID-19



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Piloting Safety

# A year with COVID-19



## Daily operational changes !!! 🙄

- **Sanitary measures:**
  - New measures everyday...
  - Last spring, where to find masks?
  - Crews put in quarantine for 14 days after high-risk contacts
  - Puzzles in the organisation of crew movements in Europe!
- **Imposed room lock-down**
  - China, Spain, Israel, Hungary, Malta, ...
- **Hotel's closures**
  - Quality standard for a daytime sleep? (noise, airco, ...)
  - In China, "Medical centres" iso standard hotels
- **Restaurant's closures**
  - Difficulty or impossibility to find food at some places
  - In China, food served at fix hours (sleep disruptions)





## **FTL Temporary exemptions under Article 71(1) of Regulation (EU) 2018/1139 (the Basic Regulation)**

Guidelines in relation to the COVID-19 pandemic

- Most of the cargo operators did not use the Article 71(1)



## Mitigation measures implemented

- Supply of masks, gel and gloves
- Keeping the same crew pairing for the whole week
- Daily disinfection of the cockpits
- Maximum 2 crew members by taxi in layover
- Quarantine stretching up to 5 days in case of a high-risk contacts
- ...



## Long Haul Cargo

- Stop layovers in high-risk areas
  - Augmented crews to cover the additional sector ⇒ **Much longer FDP !**
  - Intermediate stops (ex: OVB with rotations to China)
    - Initially 3 pilots. Recurrent delays imposed double crews.



## Consequences on Fatigue Management:

- Quarantines, increasing instability of rosters, back-lock in training from September negatively affected the number of crew available for duty.
  - Extra flexibility works only for a while !
- End of summer, FSAG analysed first signs of unusual fatigue reports.
- In the following months, continuous increase in:
  - 1) Number of fatigue reports,
  - 2) Number of unfits,
  - 3) Number of sickness days linked to chronic fatigue

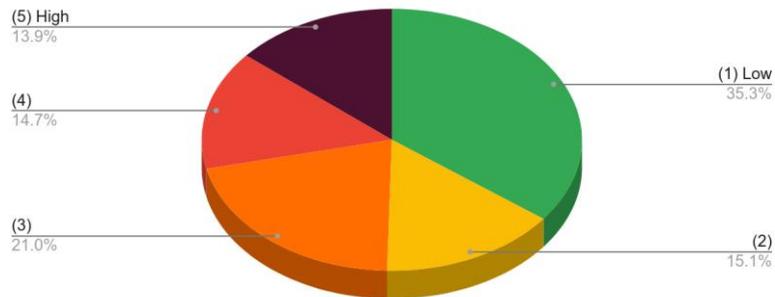


# A year with COVID-19

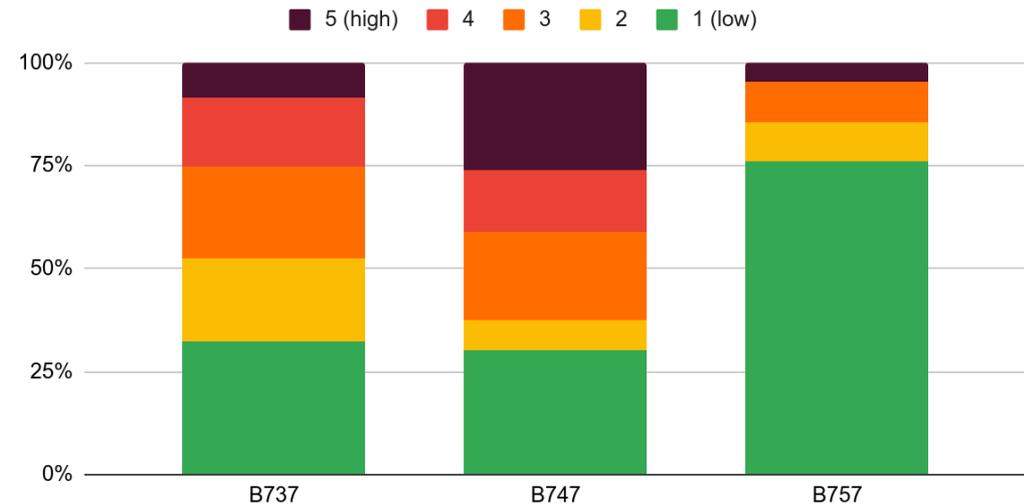
- For half ASLB pilots, COVID-19 had an impact on their fatigue management.
- Feeling of impact was more severe on LH
- Repetitive room confinements:

- **Call for volunteering on LH**

How would you rate the impact of COVID-19 on your fatigue management?



How would you rate the impact of COVID-19 on your fatigue management?



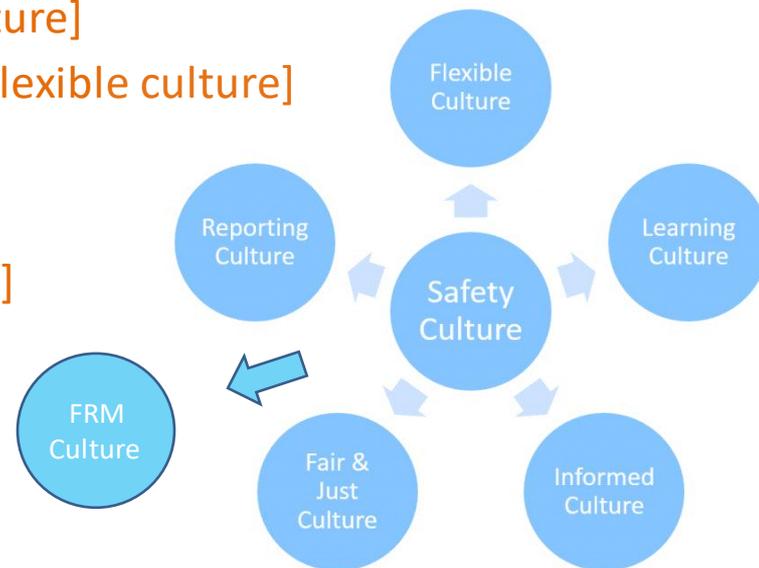
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The system has held up well !

- Daily **reporting** of problems by the crews [Reporting culture]
- Countless **meetings** to bring (or try to bring) **solutions** [Flexible culture]
- Fatigue Management remained **high in priority** (despite the other operational imperatives)
  - Some failures need to be analysed [Learning culture]
- Daily communication



We are now in a "new normal" mode... 😞

# Resilience of FRM/SMS Tools - Conclusions

- FRM is a **very effective tool** to identify an operator's specific risks and to mitigate them in a **targeted manner**.
- FRM does **not** need to be **costly** to be effective.
  - More a **culture** than a set of complex tools or documents
- A **well-trained staff** applies naturally the FRM principles.
  - Training and education are key!
  - Management, ground & crews staff
- FRM is valid for **all types of operations**.
  - Cargo & Pax, day & night, long-/medium-/short-haul
  - Also think about the ground staff (shift workers)
- No effective FRM without **support from top management**.



# Questions



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