International Civil Aviation Organization

WORKING PAPER

A42-WP/581[1]
TE/216
12/9/25
(Information paper)

ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

STUDY OF ICAO SARP ANNEX 6, PART 1 FATIGUE PREVENTION MEASURES IN AIRCREW FROM STATE APPLICATION OF THE SARP AND OPERATOR INTERPRETATION OF NATIONAL FATIGUE PREVENTION SCHEMES 2024

(Presented by the International Transport Workers' Federation (ITF))

EXECUTIVE SUMMARY

During global consultations on aircrew fatigue, the International Transport Workers' Federation (ITF) observed wide variation in airlines' fatigue-prevention measures. This appears linked to States' interpretations of the ICAO Standards and Recommended Practices (SARPs) (Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*) and to operators' own readings of national schemes. Elements moved from the SARP into the *Manual for the Oversight of Fatigue Management Approaches*(Doc 9966),, also do not seem consistently reflected in state or operator policies. In practice, fatigue mitigations not explicitly included in the SARP are often neglected.

In 2024 the ITF studied areas that states fail to mitigate because the SARP does not require them to do so; aircrew repeatedly cite these as fatigue-inducing. The ITF also found that protections for cabin crew are frequently weaker or absent compared with those for pilots.

Using multi-airline survey evidence, this paper situates aircrew fatigue within ICAO Annex 6, the *Safety Management Manual (SMM)* (Doc 9859) and Doc 9966 framework. Extended duties, limited breaks, roster volatility and eroded recovery plus low confidence in reporting mechanisms in delivery change signals SMS/FRMS assurance gaps. The analysis highlights the importance of a just culture for reporting, proactive fatigue hazard identification and the prudent, context-aware use of biomathematical models within an FRMS.

In April 2023, ILO held intensive tripartite discussions with States, Operators and Worker Organisations in Geneva on sustainable aviation. Two excerpts from point 20 of the meeting conclusions are particularly relevant:[2]

a) produce a compendium of best practices focused on policy coherence and efficiency, conduct evidence based research, in particular on occupational safety and health, collect data and statistics on opportunities and challenges, and undertake an analysis of the extent of

[1] English, Arabic, Chinese, French, Russian and Spanish versions provided by ITF.
[2] *Technical Meeting on a Green, Sustainable and Inclusive Economic Recovery for the Civil Aviation Sector* (Geneva, 24–28 April 2023), TMGCAS/2023/9.

	application of international standards to civil aviation. b) collaborate with ICAO, through consultation with tripartite constituents, and within the ILO-ICAO agreement, to work towards evaluating the need for effective labour and social standards specifically as it pertains to aviation, particularly on key occupational safety and health concerns, such as work and rest times.
Strategic Goals:	This working paper relates to the Strategic Goals *Every Flight is Safe and Secure*; and *No Country Left Behind*.
Financial implications:	None
References:	Annex 6, *Operation of Aircraft*; Doc 9859, *Safety Management Manual*; Doc 9966, *Fatigue Risk Management Systems Manual for Regulators and Operators*.; A42-WP/258 - *Fatigue Management Technical Meeting on a Green, Sustainable and inclusive Economic Recovery for the Civil Aviation Sect*or (Geneva, 24-28 April 2023) TMGCAS/2023/9

1. INTRODUCTION

1.1 In 2024 the International Transport Workers' Federation (ITF) conducted a survey of 46 airlines across 25 Contracting States to assess how the SARP (Annex 6, Part I) on fatigue prevention is being applied. The survey examined both State implementation of the SARP and how national schemes are applied by individual airlines, and it identified differences between pilots and cabin crew.

1.2 Where multiple responses were received from a single airline, only one response was counted unless additional responses concerned distinct fleet types (for example, short-haul only versus long-haul only). Percentages therefore refer to the proportion of operators, not of responses. The number of long-haul pilot responses was insufficient to draw conclusions. By contrast, the large number of short-haul pilot responses -notably from one European operator- together with respondents' evident eagerness, revealed significant indications of breaches of fatigue-mitigation legislation and a marked disregard for the rest periods and work-life balance of both pilots and cabin crew.

1.3 It should be noted that aircrew are often excluded from aspects of national social legislation that would otherwise offer more protective working conditions, particularly with respect to maximum weekly and monthly working hours and to time off (time-off-task) during a duty period.

1.4 Fatigue among safety-critical personnel remains a material operational risk. Annex 6 requires either prescriptive flight- and duty-time limits or an FRMS delivering an equivalent level of safety, embedded within the operator's SMS (Doc 9859), with Doc 9966 providing fatigue-specific implementation guidance. Evidence from the ITF's global cabin-crew survey highlights a policy–practice gap, notably, in closing the loop from fatigue reports to corrective action.

2. DISCUSSION

2.1 Because contemporary aircraft have much greater range, we are reaching a watershed in the history of aviation. These aircraft can often operate beyond the limits envisaged by current working-

period laws for aircrew. Most such rules are based on general science rather than aviation-specific evidence needed to evolve duty-time regulations for longer services. There are now flights of 24 hours and more that span much of the globe; an aircraft need only fly the other way round to serve virtually any route on earth. The in-flight rest durations and the facilities provided on these services must be scientifically evaluated to give aircrew the best possible chance of maintaining fatigue-free levels of alertness throughout their duty.

2.2 Short-haul types such as the Boeing 737 and Airbus A320 family typically operate short sectors, and low-cost business models favour flying more short sectors to sell more seats per day. Operational stability is vital because disruption to one service is likely to affect the remainder of the day's planned flights -and often beyond.

2.3 The industry's twenty-four-hour, seven-day-a-week, 365-day rolling operation means that short-notice changes to pre-planned working periods can have considerable impact.

2.4 On mid-range routes, operators increasingly choose single-aisle aircraft operating close to their maximum range instead of larger, longer-range twin-aisle types that burn substantially more fuel; this can save costs for operators that previously used larger aircraft on those routes. By contrast, these smaller aircraft -originally designed for much shorter flights- are often not equipped with facilities that allow cabin crew adequate respite away from the passenger cabin during duty days of 12 hours or more.

2.5 We also observe group airlines seeking interoperability of aircrew across several operating licences, which adds another dimension to aircrew experience.

2.6 These very different operating models have correspondingly varied impacts on the crews that operate them. The ITF fatigue study (2024) therefore sought to identify factors that increase aircrew fatigue and that affect health and safety, well-being and the attractiveness of aircrew work in the modern operating environment.

3. SURVEY

3.1 The survey was split into two sections, the first asking a series of questions about national legislation. Whilst the responses are informative, without closer examination of the nations' regulations provided we cannot be certain the data is completely accurate. Very few aircrew or union representatives are fully conversant with their national legislation, and provisions in collective labour agreements are often misunderstood. The data collected so far offers useful insights into state provisions for aircrew, which we can explore further in due course.

3.2 The second section asked about the operating practices of specific airlines and highlights areas where legislation is weak or non-existent and where, in the absence of regulatory requirements, airlines either ignore or adopt a lacklustre approach.

3.3 The questions were designed to expose operational areas that directly affect aircrew and that influence both fatigue and work-life balance. Fatigue is often treated solely as a safety risk to passengers and aircraft, while the long-term effects on crew health are overlooked. Contemporary science demonstrates

the serious effects that sleep deprivation, circadian disruption, increased workload and prolonged wakefulness have on human health and longevity.[3]

3.4 Biomathematical models are valuable for comparative risk assessment when used as part of a comprehensive FRMS. They do not, in themselves, establish the acceptability of fatigue risk for specific duties. A low modelled likelihood of fatigue at the duty level does not guarantee low realised risk when factors such as workload intensity, facility constraints, local transport arrangements, seasonal conditions, or disrupted recovery are material. Consistent with Annex 6 and Doc 9966, predictive indications should be integrated with reactive reports and objective trend analysis, with performance verification of controls and iterative correction of scheduling practices. For this reason, the ITF and its members wholeheartedly agree with and encourage the application of action items (b) and (c) found in A42-WP/258 titled “Fatigue Management” presented by Oman, Bolivia, IFALPA, ITF, IBAC and IFATCA.

3.5 These outcomes have implications for safety performance, service quality and retention. These outcomes are avoidable within existing ICAO frameworks when reporting is protected and acted upon, intra-duty rest is structured, and scheduling is corrected using combined predictive and reactive data.

4. CONCLUSION AND RECOMMENDATIONS

4.1 ICAO SARPs in Annex 6 do not require States to enact hard laws governing breaks within a single duty period that does not include in-flight rest. A clear definition of a 'break' is essential. The ITF asserts that a reasonable definition should be: a defined period within a duty where a crew member is free from all active safety and service-related duties to rest both physically and mentally. For a duty exceeding six hours and up to ten hours, a break should be no less than 30 minutes, with an additional 15 minutes required for each subsequent hour.

4.2 States are not required to regulate the frequency of changes to planned duties or the variance in start and finish times of amended duties. While the industry operates in a unique and demanding environment, the impact of necessary roster changes on aircrew must be mitigated. We call on ICAO to explore mechanisms to protect aircrew from current practices, such as being contacted at the operator's discretion, thereby safeguarding rest periods and respecting their ability to plan non-work-related activities.

4.3 We call on ICAO to assess the current absence of mandated limits on weekly cumulative duty hours, with a view to establishing a maximum weekly duty limit for all aircrew. Furthermore, we ask ICAO to review typical limits, which can be as high as 60 hours per week, and to develop a mechanism for reducing duty hours over specified periods. This would ensure aircrew duty hour expectations are better aligned with those of ground-based workers.

4.4 We call on ICAO to assess the lack of regulated standards for in-flight rest facilities and the absence of minimum durations for in-flight rest. It is important to note that service requirements for cabin crew must not be prioritised over acceptable in-flight rest durations and facilities.

4.5 We call on ICAO to assess the provisions for minimum rest post-flight where mixed-mode operations are employed. In these cases, the cumulative fatigue from operating long-duration short-haul duties without breaks, combined with frequent duty changes and disturbed rest periods, is exacerbated by

[3] Professor Matthew Walker, Director of UC Berkeley's Sleep and Neuroimaging Lab: https://www.youtube.com/watch?v=aXflBZXAucQ

the multiple time zone crossings of overnight long-haul flights and often questionable in-flight rest facilities.

4.6 Fatigue-related issues, both psychological and physical, as well as short- and long-term, transient and chronic, are increasing rather than diminishing among aircrew. Given the advancements in fatigue and circadian science, the ITF supports A42-WP/258, calling for a comprehensive review of Annex 6 and Doc 9966

4.7 Although not covered in this survey, we also identify a lack of technical guidance and regulation concerning minimum rest periods before a Flight Duty Period (FDP) is re-planned immediately after a previous rest period. This constitutes an unaddressed fatigue risk. A rest period cannot serve as an opportunity for recuperative sleep before a work period if it directly follows another sleep period. Human physiology requires a period of approximately 16 hours of wakefulness between major sleep periods.

4.8 These findings also draw attention to broader challenges of social dumping and exploitative labour practices in parts of the aviation sector, particularly among low-cost carriers. The use of multiple aircraft registrations and cross-border employment structures can obscure accountability, weaken regulatory oversight and make it harder for crew to access consistent protections. We wish to highlight the outcomes of the *Technical Meeting on a Green, Sustainable and Inclusive Economic Recovery for the Civil Aviation Sector* (TMGCAS/2023/9, Geneva, April 2023). We encourage collaboration with ICAO, through tripartite consultation and within the framework of the ILO-ICAO agreement, to evaluate the need for effective labour and social standards specific to aviation. This is particularly pertinent for key occupational safety and health concerns, such as work and rest times.

— — — — — — — —

APPENDIX A

QUESTIONS

The opening questions 1 to 6 cover some general housekeeping including details of who is responding and which union they represent and nation they are answering for. The state questions which required individual answers for both flight and cabin crew:

State questions on how the SARP has been interpreted for both pilots and cabin crew:

- Are there maximum duty hours? Weekly, monthly and annually.
- Are there minimum number of hours' rest between flight duties
- Are there a minimum number of days off per month
- Are there a maximum number of hours or days in a single block of work
- The quality of in-flight rest facilities
- Minimum in-flight rest durations for extending maximum flight duty periods
- Break periods within a duty period to eat and rest for a short period
- The maximum length of a single standby period
- Are maximum flight duty periods shortened after a certain number of hours spent on standby prior to the duty
- A freeform box gave the respondent an opportunity to comment and are in appendix to this report.

Twenty-five States had responded at the time of writing this draft report. We intend to keep the survey open for a while longer to ensure we gather as many national responses as possible. This will allow us to robustly assert our opinion that more legislation is required in the areas where we have identified weaknesses and fatigue risks.

Forty-six airlines responded, and their results highlight common areas where a lack of legislation or an apathetic approach to aircrew work-life balance is a concerning factor that needs to be addressed in the relevant forums.

We also inquired about the interoperability of our members across multiple Air Operator Certificates (AOCs). The impact of this practice is not yet fully understood, nor is how its anticipated growth will affect our members. However, we have grave concerns that, without adequate protection, aircrew could face further work-life balance issues.

A dedicated focus on this practice would be a prudent project. We are aware that EASA has now begun a rule-making task force to deal with the regulatory issues that require mitigation. EASA has offered to recognise the potential social impacts and consider them in their rule-making process. The European Transport Workers' Federation (ETF) -the European arm of the ITF- is taking a lead role in this task force.

Operator specific questions, *note; where multiple responses were found from a single airline, only one response was considered, unless the additional responses covered other areas of fleets i.e. short haul only versus long-haul only. Therefore, when noting the percentages, it is the percentage of operators not the percentage of responses.*

- In which country are aircraft registered
- Do your members operate on aircraft registered in multiple countries at this airline
- What other countries are aircraft registered
- What type of flying do the crew operate (Long-haul, short-haul, both)
- Do the crew operate duties of 10 hours or more
- During duties of 10 hours or more do the crew have an opportunity to eat and relax for a reasonable period of time (e.g. a block of at least 10 minutes, adding up to a least 30 minutes over the 10 hour duty period)
- How often are planned flights changed to another flight or series of flights
- Do the changes affect the planned start time by more than one hour (earlier or later)
- At home base, how do crew receive notification of changes
- When are the changes notified
- For changes notified on the day of the planed duty
- Are crew ever expected to attend training sessions, administrative meetings including sickness and career advancement interviews in their days off including on-line meetings
- Does a collective bargaining agreement cover flying schedules at this airline
- How seriously do you feel this airline takes fatigue and supports your members

FINDINGS

The survey identified five circumstances common to all, or a great many, States and operators. Notably, none of these five circumstances are mitigated by the provisions in Annex 6, Part I of the SARPs.

- **Minimum rest periods at home base:** These are calculated solely on trip duration and time zones crossed, following duties involving multiple time zones or a series of short-haul or ground duties

immediately prior to long-haul flights without an intervening day off. This calculation fails to account for the cumulative fatigue from the preceding short-haul duties.

- **In-flight rest facilities and duration for cabin crew:** A minimum standard for in-flight rest facilities -proven to allow for recuperative sleep- is not regulated in 42% of States for cabin crew and 30% for flight crew. Minimum durations of in-flight rest are also overlooked at similar rates. While the US regulates these standards for flight crew, it does not for cabin crew; a practice that also appeared common elsewhere.

- **Duty changes:** This refers to changes to the start or end of a duty period by an hour or more at late notice. This can occur prior to leaving suitable accommodation, at report, or even on days off or leave. 70% of respondents reported that operators use a variety of methods -including emails, phone calls, text messages, and roster updates- to notify aircrew of changes, often disturbing them during rest periods, with 29% reporting this can happen ‘at any time’. Furthermore, 40% of short-haul crew report frequent roster changes, and 26% report being contacted at any time during a rest period between duties.

- **Minimum awake period:** This occurs when an operator ends a planned duty several hours early and assigns the crew member to a new duty starting within what was originally the rest period. This practice begins a minimum rest period without sufficient time awake since the last 8-hour sleep opportunity, and with little chance of obtaining another 8-hour sleep before the new report time. It effectively increases total wakefulness, rendering the minimum rest period inadequate and undermining the reliability of post-duty rest rules. This is often utilised in stand-by duties, where ending a duty early has a reduced operational impact.

- **Breaks:** Currently, only the 2014 pan-European EASA rules attempt to address the need for a proper break to eat and rest. No other States prescribe a period that a ground-based worker would recognise as a 'break' for cabin crew or pilots. 52% of short-haul cabin crew operations reported only occasionally or rarely getting a break on duties of 10 hours or longer. This is significant as 90% of both long and short-haul cabin crew frequently operate duties exceeding 10 hours. It should be noted that short-haul crew can be scheduled for up to 22 days per month, with weekly working limits considerably higher than those of many ground-based professions.

- **Focus of traditional schemes:** Traditional fatigue prevention schemes have primarily focused on pilots, while cabin crew have often been required to work more hours daily and cumulatively. It is important to note that cabin crew fatigue mitigation has improved, although the survey still revealed disparities in State provisions. One State (Australia) has no prescriptive fatigue mitigation rules, relying instead on in-house fatigue management systems which cabin crew frequently report to be ineffective.

- **Duty hours:** Some States lack rules defining a maximum number of hours or days of continuous duty before mandatory days off for both flight and cabin crew. However, such provisions were missing more frequently for cabin crew.

- **Erroneous duty:** 75% of both flight and cabin crew are expected to attend meetings in their own time, including online. These meetings, which cover areas such as career advancement, administrative tasks, absence reviews, and disciplinary hearings, are typically uncompensated.

- **Short-haul – Extended duties without adequate breaks:** Crew are frequently assigned long duties without sufficient, scheduled opportunities to eat or take a meaningful rest.

- **Short-haul – Unpredictable and volatile working patterns:** Schedules are highly unpredictable and subject to frequent, last-minute changes.

- **Impact on work-life balance:** The factors affecting short-haul operations reveal a widespread absence of work-life balance within the industry. Routinely, changes are notified at the operator's convenience with no regard for crew members' personal time. The persistent lack of proper breaks during long duties is unacceptable in 2025. We assert that the high attrition rates of cabin crew in many airlines are a direct result of operators abrogating responsibility for crew welfare, doing only the bare minimum required by law.

- **Outdated employment practices:** This is an industrial sector that operates the most sophisticated, modern machinery ever built by humans, yet it remains entrenched in outdated employment practices that it is profoundly reluctant to address.

- **Harmonisation of EASA FTL rules:** Since the introduction of the EASA Flight and Duty Time Limitations (FTL) rules in 2014 for EU Member States, it has been recognised that fundamental human limitations are universal. Consequently, and with only a few prescribed exceptions, cabin crew duty and rest times are now harmonised with those of flight crew.

- **Evolution of state schemes:** State fatigue prevention schemes have evolved over many years, often out of necessity to safely operate new aircraft and exploit their improved capabilities in speed, distance, and capacity. This has progressed to such a degree that aircraft limitations and minimum turn-around times now predominantly dictate the required human performance.

- **The ITF position on human performance:** The ITF supports EASA's stance, acknowledging that human performance and physiological needs are not defined by employment role; as human beings, we share similar limitations. The ITF believes more favourable provisions have historically been granted to pilots due to a traditional recognition that piloting an aircraft during an emergency requires them to be less impaired by reduced alertness from workload, wakefulness, circadian rhythm, and sleep loss. By contrast, the critical task of managing several hundred terrified passengers during an emergency and executing a potential evacuation -often in an unknown aircraft state- was traditionally considered feasible due to an assumed adrenaline response in cabin crew. Contemporary medical evidence, however, demonstrates that a person flooded with adrenaline does not make better decisions or perform more effectively.

- **The safety-critical role of cabin crew:** While the mental and physical workloads of flight and cabin crew differ across flight phases, the traditional approach often overlooked the safety-critical nature of every cabin crew task and interaction. Maintaining a safe cabin environment requires crew to manage behaviours amongst colleagues and passengers, all while remaining prepared to respond instantly to a myriad of incidents and emergencies. Situational awareness is paramount for ensuring continued safe flight and passenger management. Crucially, the first effects of fatigue are the degradation of decision-making and communication (ICAO Doc 9966), both of which are fundamental to maintaining competent situational awareness.

- **Contrasting operational environments:** It is therefore reasonable to conclude that cabin crew, as safety-critical staff, are constantly evaluating the cabin environment to maintain the safe operation of the flight. The cabin during service is a dynamic and physically demanding workspace, with crew frequently walking, bending, and reaching to attend to passengers in the galleys and aisles.

This contrasts with the flight deck, which is typically more tranquil and focused on systems analysis.

- **EASA's recognition:** EASA's recognition that cabin crew require alertness levels similar to those of pilots represents a positive evolution for aviation safety.

— — — — — — — —

APPENDIX B

RESULTS – OF 25 STATES

Table 1 – Question 7		
Cumulative Duty hours	YES	NO
Count of Cabin crew – weekly	22	14
Count of Flight crew – weekly	17	6

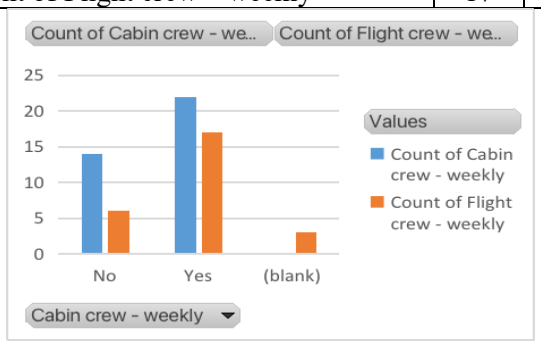


Table 2 – Question 7		
Cumulative Duty hours	YES	NO
Count of Cabin crew - monthly	30	7
Count of Flight crew - monthly	22	1

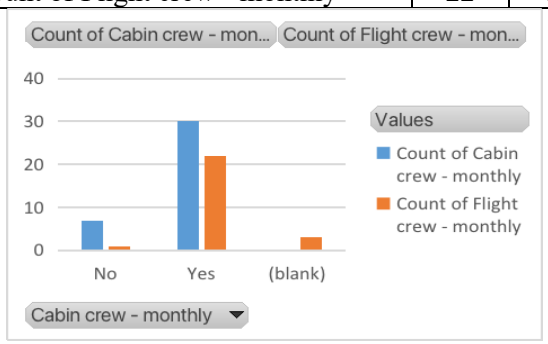


Table 3 – Question 7		
Cumulative Duty hours	YES	NO
Count of Cabin crew – annual	29	21
Count of Flight crew – annual	9	3

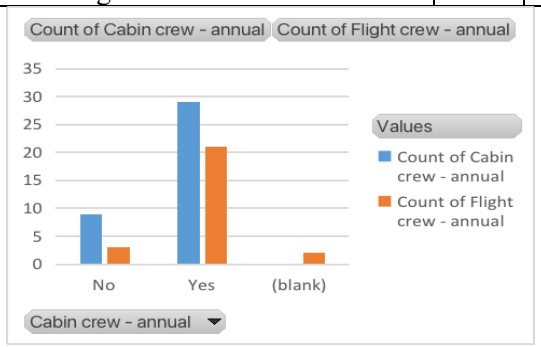


Table 3 – Question 8		
Minimum rest periods between duties	YES	NO
Cabin crew	39	4
Flight crew	28	1

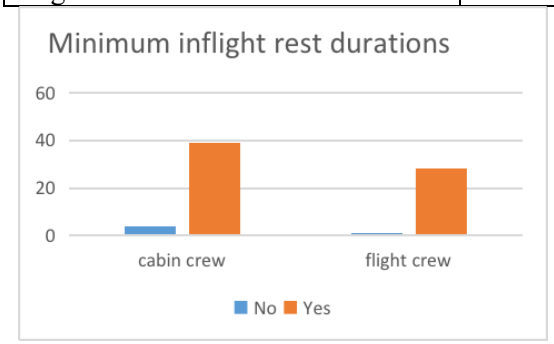


Table 4 – Question 9		
Minimum number of days off per month	YES	NO
Cabin crew	88%	11 %
Flight crew	75%	75 %

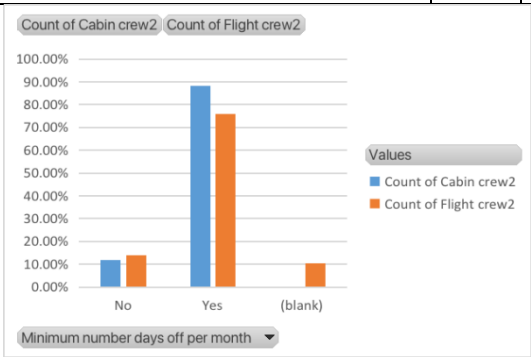


Table 5 – Question 10		
Maximum number of days or hours in a block of work	YES	NO
Cabin crew	80%	20%
Flight crew	85%	15%

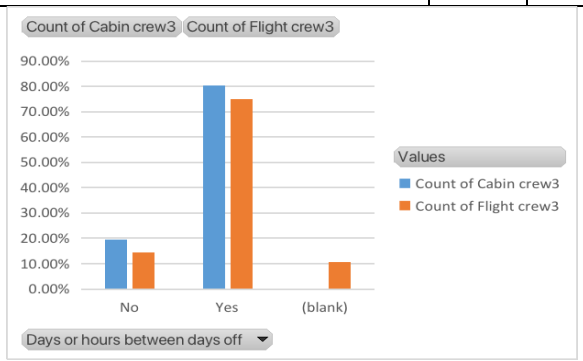


Table 6 – Question 11		
Quality of in-flight rest facilities	YES	NO
Cabin crew	57%	42%
Flight crew	70%	30%

Table 7 – Question 12		
Minimum inflight rest duration to extend a Max FDP	YES	NO
Cabin crew	35%	65%
Flight crew	35%	60%

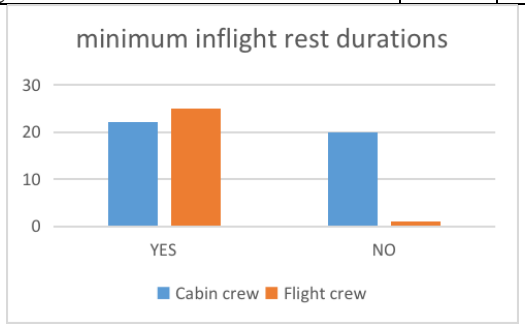


Table 8 – Question 13		
A break in a duty to eat and rest	YES	NO
Cabin crew	52%	47%
Flight crew	74%	26%

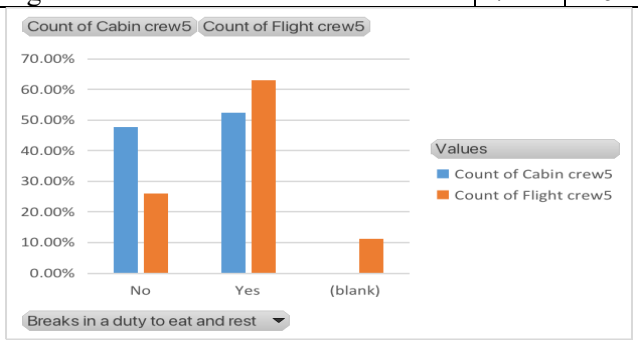


Table 9 – Question 14		
Is there a max limit to a single stand by period	YES	NO
Cabin crew	35%	65%
Flight crew	35%	60%

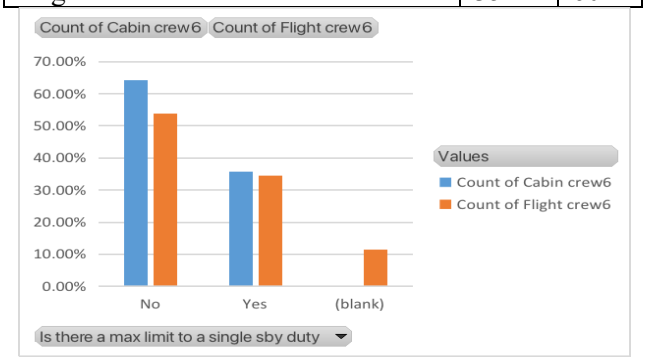
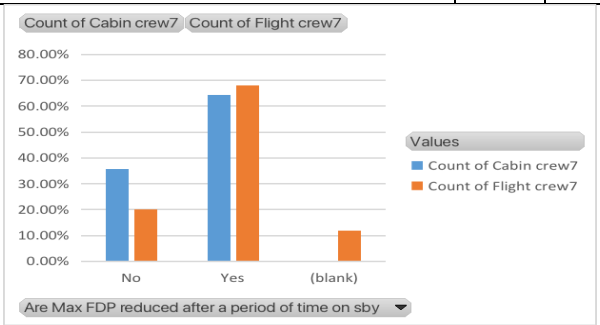


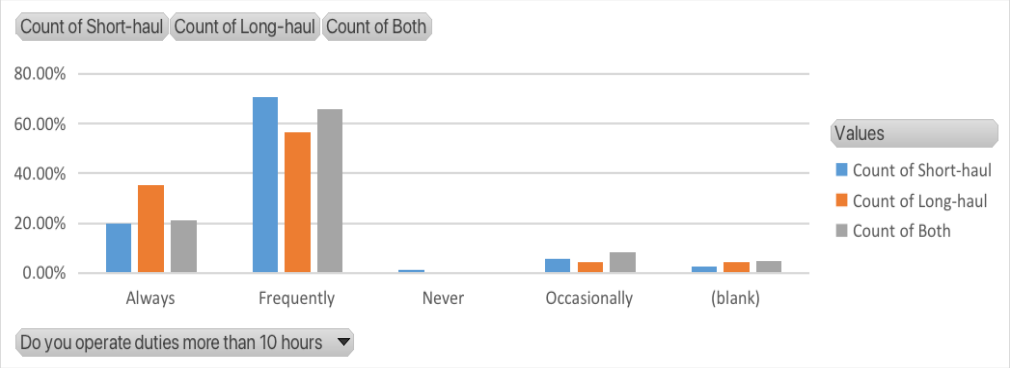
Table 10 – Question 15		
Are Max FDPs reduced after a period of time on standby	YES	NO
Cabin crew	65%	35%
Flight crew	68%	32%



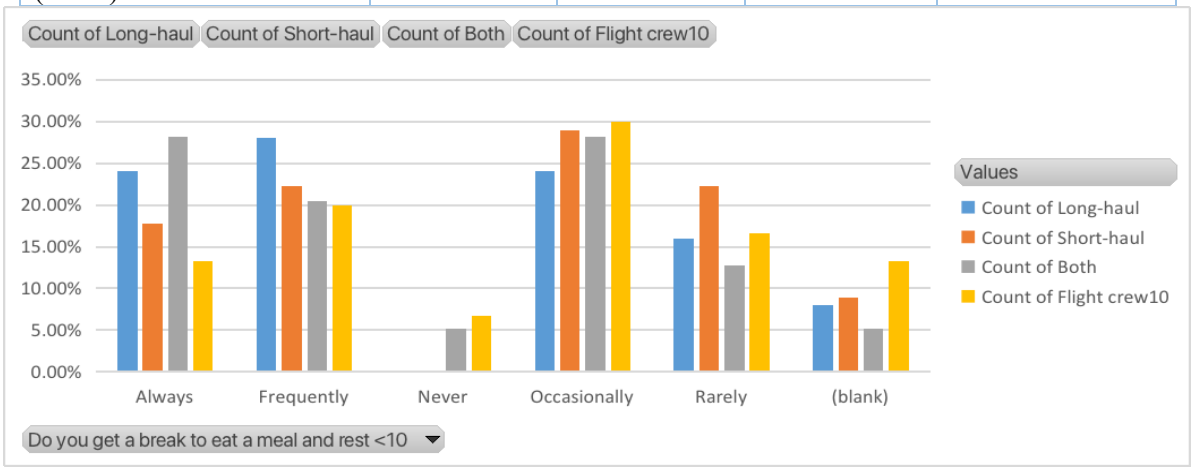
- Results – of 46 Airlines

Do you operate on more than 1 AOC?	YES	NO
Flight crew and Cabin crew	22%	78%

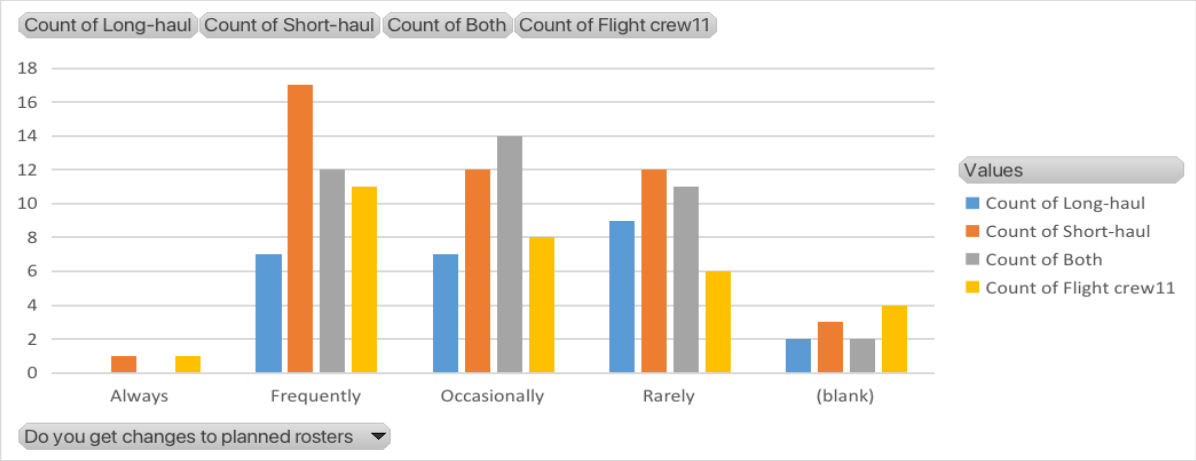
Do you operate duties more than 10 hours	Short-haul	Long-haul	Both
Always	19.72%	35.42%	21.31%
Frequently	70.42%	56.25%	65.57%
Never	1.41%	0.00%	0.00%
Occasionally	5.63%	4.17%	8.20%
(blank)	2.82%	4.17%	4.92%



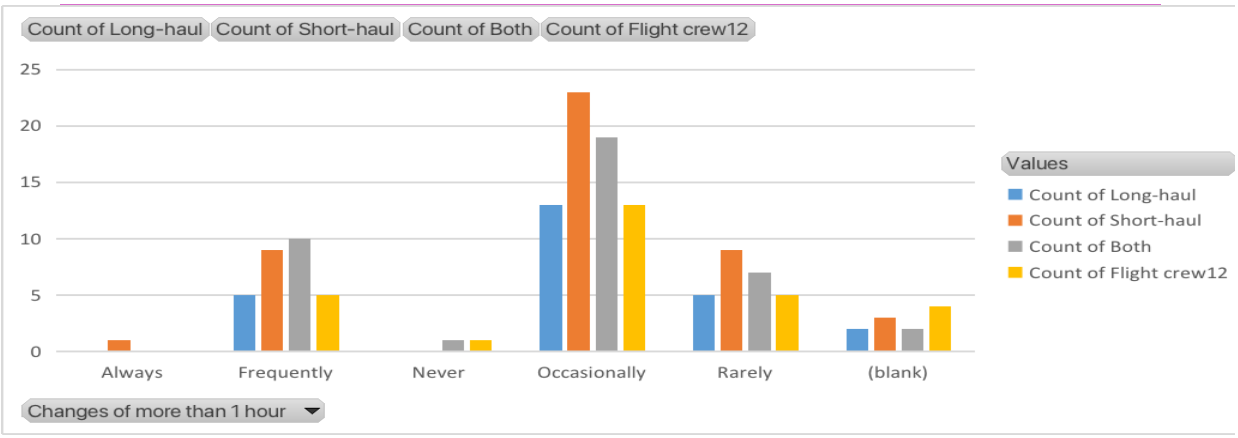
Do you get a break to eat a meal and rest <10	Long-haul	Short-haul	Both	Flight crew
Always	24.00%	17.78%	28.21%	13.33%
Frequently	28.00%	22.22%	20.51%	20.00%
Never	0.00%	0.00%	5.13%	6.67%
Occasionally	24.00%	28.89%	28.21%	30.00%
Rarely	16.00%	22.22%	12.82%	16.67%
(blank)	8.00%	8.89%	5.13%	13.33%



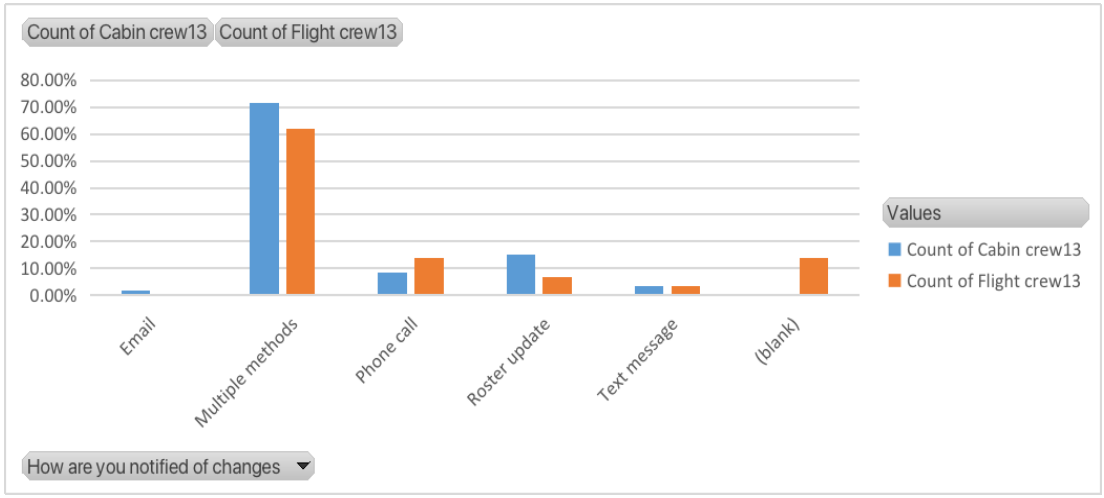
Do you get changes to planned rosters	Long-haul	Short-haul	Count of Both	Flight crew
Always		1		1
Frequently	7	17	12	11
Occasionally	7	12	14	8
Rarely	9	12	11	6
(blank)	2	3	2	4



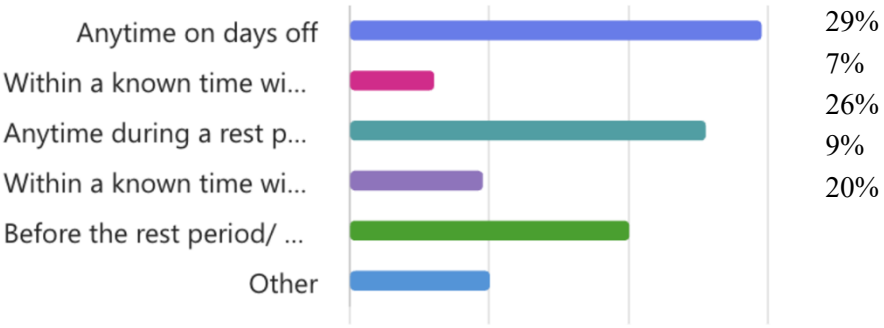
Changes of more than 1 hour	Long-haul	Short-haul	Both	Flight crew
Always		1		
Frequently	5	9	10	5
Never			1	1
Occasionally	13	23	19	13
Rarely	5	9	7	5
(blank)	2	3	2	4



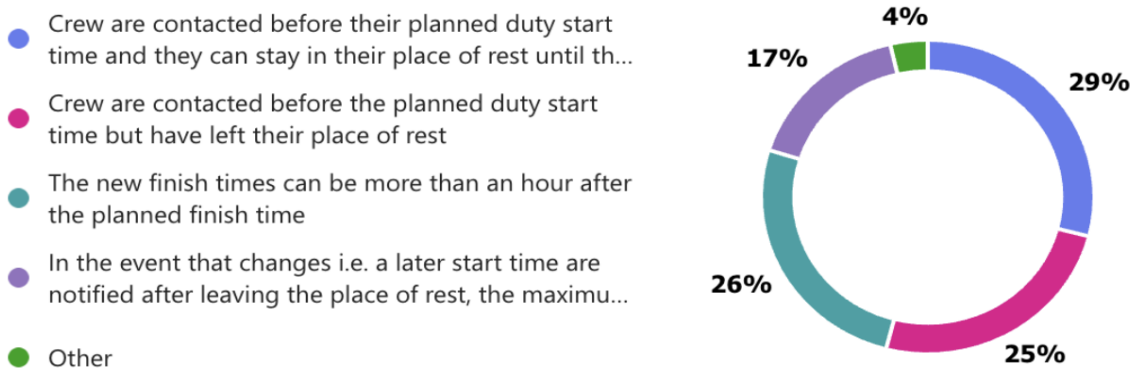
How are you notified of changes	Cabin crew	Flight crew
Email	1.67%	0.00%
Multiple methods	71.67%	62.07%
Phone call	8.33%	13.79%
Roster update	15.00%	6.90%
Text message	3.33%	3.45%
(blank)	0.00%	13.79%



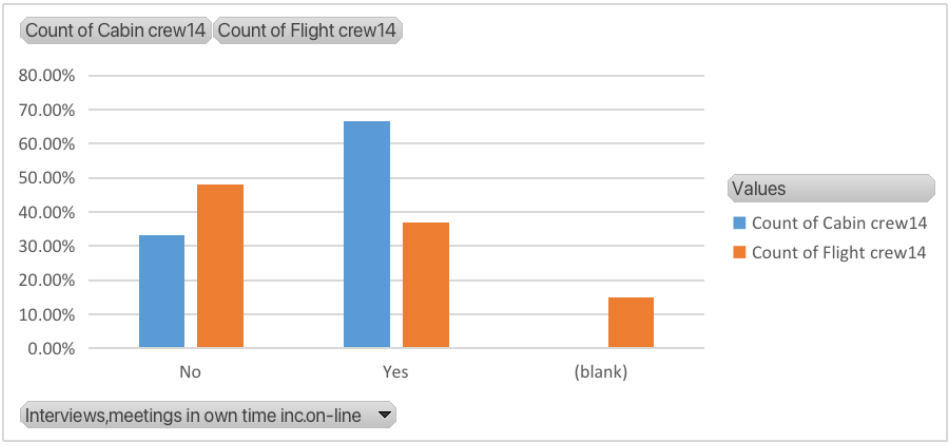
- Changes are notified when?



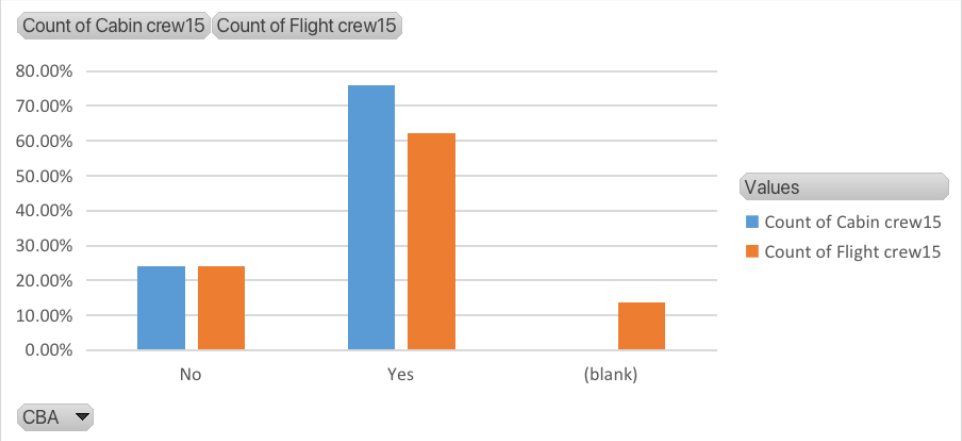
- Changes on the day



Interviews, meetings in own time including. on-line	Cabin crew	Flight crew
No	33.33%	48.15%
Yes	66.67%	37.04%
(blank)	0.00%	14.81%



CBA	Cabin crew	Flight crew
No	24.14%	24.14%
Yes	75.86%	62.07%
(blank)	0.00%	13.79%



STATES

(Argentina, Australia, Bahrain, Brazil, Columbia, Denmark, Fiji, Finland, Germany, Hong Kong, Indonesia, Japan, Jordan, Malaysia, Malta, Mauritius, Mexico, New Zealand, Norway, Qatar, South Korea, Sweden, Switzerland, Turkey, United Kingdom, and the United States)

- **Variation in State Implementation:** An examination of State provisions derived from ICAO's Standards and Recommended Practices (SARPs) reveals differences in their application. Divergences were observed both in how regulations are applied to flight crew versus cabin crew, and in how different States have implemented the SARPs.

- **Non-Prescriptive Approaches:** Among the 25 States from which we have responses, Australia (and potentially New Zealand, based on conflicting information) does not have prescriptive fatigue regulations for cabin crew. Instead, they rely solely on Fatigue Risk Management Systems (FRMS) to monitor and impose restrictions. This appears to be at odds with the SARPs, which mandate that States establish a prescriptive regulatory framework. The Australian cabin crew union (FAAA) has lobbied for years for the introduction of prescriptive regulations to address their serious concerns over unsafe fatigue levels amongst their members.

- **Calculation of Cumulative Duty Hours:** The methodology for calculating cumulative duty hours varies significantly. Some States, such as Egypt, Brazil, and South Korea, do not define maximum weekly duty hours. Others use flight hours as a cap, a metric which requires further examination to understand its relationship to total actual working hours.

- **Minimum Rest Periods:** Minimum rest periods between duties are typically around 12 hours. A notable exception is South Africa, where the minimum is only 8 hours.

- **Lack of Defined Breaks:** No State legislation contains provisions for a break during duty that would be recognised as meaningful by ground-based staff. Although EASA's scheme is the most progressive—mandating an opportunity for nourishment—this provision is frequently missed in practice.

- **In-Flight Rest Facilities and Duration:** A minimum standard for in-flight rest facilities (proven to allow recuperative sleep) is not regulated in 42% of States for cabin crew and 30% for flight crew. Minimum durations for in-flight rest are similarly overlooked at comparable rates.

- **Regulatory Influence on Aircraft Design:** The United States regulates in-flight rest standards and durations for flight crew but not for cabin crew (flight attendants). This may explain why aircraft like the Boeing 787-9 are standardly equipped with rest facilities only for the flight crew. This suggests that aircraft design is being directly influenced by the scope of fatigue prevention regulations.

- **Maximum Continuous Duty:** Rules defining a maximum number of hours or days of continuous duty before days off were lacking in some States for both crew groups but were absent more frequently for cabin crew.

- **Standby Provisions:** The maximum length of a standby period varied from 12 to 24 hours. The data was insufficient to assess how the length of standby duty influences subsequent reductions to the maximum permissible flight duty period.

- **Need for a Broader Review:** A larger survey sample would provide more compelling evidence for the need to review certain aspects of the SARPs. This could lead to the development of a charter, convention, or binding agreement through the ICAO/ILO mechanism to ensure better harmonisation.

- **The Root Cause of Operational Practices:** Ultimately, how airlines operate their aircrew is a direct result of what regulations permit, prohibit, or, at times, what they can ignore with impunity.

AIRLINES

(Aerolinas Argentinas, Aeromexico, Air Malta, Air New Zealand, AirAsia, Allegiant Air, Asiana Airlines, Atlas Air, Avianca, British Airways, Cathay Pacific, Commutair, Condor, EasyJet, Endevaor Air, Eurowinghs, Fiji Airways, Finnair, Garuda Indonesia, Gulf Air, Horizon Air, Japan Airlines, JetBlue Airways, Korean Air, Lufthansa, Malta Air, Norse Atlantic Airways, Norwegian, Omni Air International, PSA Airlines, Qantas, Qatar Airways, Royal Jordanian, Ryanair, SAS, SAS Connect, Silver Airways, Southwest Airlines, Spirit Airlines, Swiss, Turkish Airlines, United Airlines, Virgin Australia, and Wideroe)

- **Operational Differences: Long-Haul vs. Short-Haul:** It is necessary to acknowledge the significant operational differences for crew between the two primary flying modes: long-haul and short-haul. A common international definition distinguishing these modes does not exist. Typically, short-haul is considered a single sector of up to 6 or 7 hours, though most operations are under 2-3 hours, enabling a return to home base within a single duty period. Geographical factors and population density are key drivers; for instance, Europe's dense network of cities facilitates short-haul operations, whereas the vast, sparsely populated archipelagos of Australasia present a different operational model.

- **Long-Haul Fatigue Sources:** Long-haul crew typically operate 4 to 5 trips per month. The primary fatigue sources are jet lag/acclimatisation and insufficient recovery rest time down-route or at home to eliminate the accrued sleep debt. A significant factor is working during the Window of Circadian

Low (WOCL) – typically between 02:00 and 05:00 – when the body undergoes vital recuperative processes. Our scientific understanding of these processes and their critical importance to well-being is still evolving.

- **Short-Haul Fatigue Sources:** Short-haul crew can operate up to 22 days per month. Fatigue prevention schemes acknowledge the impact of cumulative sleep debt from frequent early starts. Preparatory sleep is ineffective at mitigating fatigue from a series of duties starting before 06:59. This is compounded by duties ending late in the evening.

- **Prevalence of Long Duties:** 90% of both long-haul and short-haul crew frequently operate duties of 10 hours or more.

- **Lack of Breaks:** 52% of short-haul crew only occasionally or rarely receive a break during these long duties.

- **Roster Volatility:** 40% of short-haul crew report frequent roster changes. 70% of all crew report changes to duty start or finish times by over an hour, occurring occasionally or frequently. For 40% of short-haul crew, this equates to over a week's worth of changes in a 4-week roster period, excluding standby duties. A previous Unite the Union survey (2015) found that 20-25% of monthly rosters were comprised of standby duties.

- **Intrusion into Free Time:** 29% reported being notified of changes at any time on days off, including in EU States under the EASA FTL scheme where regulations intend to protect this time. 26% were contacted anytime during a rest period between duties, and only 20% were notified before their days off or leave began.

- **Methods of Contact:** 70% were contacted via multiple methods (calls, texts, emails, roster updates), leading to disturbed rest and a reported "fear of the phone."

- **Core Issues:** The combination of long duties without adequate breaks and already unpredictable patterns being frequently changed creates significant fatigue risk.

- **Three Key Observations:**

    1. *Australia's Regulatory Gap:* Australia's lack of prescriptive rules for cabin crew is being used as a basis to plan new, untested ultra-long-range duty hours.

    2. *Erosion of Work-Life Balance (Short-Haul):* Practices in short-haul operations demonstrate a pervasive lack of work-life balance, with operators showing little respect for personal time. The absence of meaningful breaks is unacceptable, and high attrition rates are likely a direct result of operators neglecting crew welfare beyond the legal minimum.

    3. *Outdated Practices:* The industry remains entrenched in outdated employment practices despite operating the most sophisticated machinery.

- **The Critical Gap: Mixed-Mode Flying:** Perhaps the most significant finding concerns mixed-mode flying. No national fatigue prevention scheme offers specific rest mitigation for crews switching between short-haul and long-haul operations. Rest calculations typically consider only

the long-haul segment, ignoring the compounding fatigue from preceding short-haul duties affected by changes, lack of breaks, and intrusive contact.

- **Multiple AOC Operations:** 22% of respondents operate under more than one Air Operator Certificate (AOC). The social impact is not yet fully understood, but airline groups are looking to expand this model. A comprehensive review is needed. The European Transport Workers' Federation (ETF) has already established a rule-making group on this subject due to expressed interest from several EU operators.

- **Erroneous Duties:** 75% of both flight and cabin crew are expected to attend meetings in their own time (e.g., for career advancement or disciplinary hearings), which constitutes an uncompensated and intrusive work demand.

- **Perceived Seriousness of Fatigue:** Finally, respondents were asked to rate how seriously their airline treats fatigue on a scale of 1 (not at all) to 5 (very good):

  1 = 18% - 2 = 21% - 3 = 35% - 4 = 11% - 5 = 6%

The International Transport Workers' Federation concludes that this study fulfils the intent of the tri-partite discussions held in Geneva and can be used to instigate further work within ICAO to complete the tasks agreed;

f) produce a compendium of best practices focused on policy coherence and efficiency, conduct evidence based research, in particular on occupational safety and health, collect data and statistics on opportunities and challenges, and undertake an analysis of the extent of application of international standards to civil aviation.

g) collaborate with ICAO, through consultation with tripartite constituents, and within the ILO-ICAO agreement, to work towards evaluating the need for effective labour and social standards specifically as it pertains to aviation, particularly on key occupational safety and health concerns, such as work and rest times.

— END —