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**Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives**

**MANAGING CHRONIC ANXIETY AND FATIGUE IN CONFLICT ZONES**

(Presented by Israel)

**EXECUTIVE SUMMARY**

ICAO recognizes the importance of fatigue management in Annex 6 — *Operation of Aircraft* and supporting guidance material. The effective management of crew anxiety and fatigue is essential for the preservation of operational aviation safety.

Chronic anxiety and fatigue are major threats to aviation safety, especially in regions affected by conflict zones. Pilots and air traffic controllers exposed to prolonged stress demonstrate reduced concentration, impaired decision-making, and increased risk of incidents. Existing regulations such as Flight Time Limitations (FTL) and Fatigue Risk Management Systems (FRMS) provide safeguards but are insufficient in high-stress environments.

This paper outlines a comprehensive resilience framework for airlines and air traffic control (ATC) organizations. Key measures include:

- a) policy & leadership commitment;
- b) monitoring tools;
- c) operational adjustments;
- d) support programs;
- e) education & training; and
- f) safety management integration.

Adopting these measurable strategies will enhance aviation resilience, protect personnel wellbeing, and strengthen safety margins in both conflict and non-conflict zones operations.

<i>Strategic Goals:</i>	This working paper relates to <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	The ICAO activities referred to in this paper are expected to be undertaken within the resources available in the 2026-2028 Regular Programme Budget and/or from extra budgetary contributions as guided by the ICAO Business Plan 2026-2028.
<i>References:</i>	Annex 6 — <i>Operation of Aircraft</i> , Part I — <i>International Commercial Air Transport — Aeroplanes</i> , Part II — <i>International General Aviation — Aeroplanes</i> and Part III — <i>International Operations — Helicopters</i> Annex 11 — <i>Air Traffic Services</i> Doc 9966, <i>Manual for the Oversight of Fatigue Management Approaches</i>

## 1. INTRODUCTION

1.1 Chronic anxiety and fatigue are significant challenges to aviation safety, particularly in civil air transportation. These conditions impair the operational performance of airline pilots and air traffic controllers, thereby increasing the risk of accidents. Fatigue is a major human factor in aviation safety, and international aviation authorities recognize it as an unavoidable risk that must be actively managed (Federal Aviation Administration (FAA), 2024).

1.2 The need to manage fatigue risks is recognized in Annex 6 — *Operation of Aircraft*, Annex 11 — *Air Traffic Services*, the *Manual for the Oversight of Fatigue Management Approaches* (Doc. 9966) and the supporting sector specific fatigue management implementation guides. Both the prescriptive and performance-based approaches to fatigue management provided for in Annex 6 and Annex 11 require continuous improvement. Similarly, the Standard and Recommended Practices (SARPs) and guidance material require periodic review.

1.3 Ongoing regional conflicts have intensified stressors for aviation personnel. In recent years, the proportion of the world affected by armed conflict has expanded significantly, with both new and persistent hotspots emerging. Prolonged exposure to such environments is associated with heightened stress and fatigue among airline pilots and air traffic controllers, particularly when aerial attacks threaten airports and control zones. Significantly, the effects of stress and fatigue are not limited to flights operating directly in conflict areas but may also persist during subsequent flights in safer regions.

## 2. DISCUSSION

2.1 The Civil Aviation Authority of Israel has implemented a National Aviation Resilience Plan to address stress management in aviation personnel. Surveys under this plan indicate that Israeli airline pilots identify fatigue as one of the leading safety risks.

2.2 Global reports include cases of pilots declaring themselves “Not Fit to Fly.” Although some regulatory bodies encourage disclosure of mental health conditions and note that most treated conditions do not result in disqualification, studies suggest that many pilots avoid seeking medical or psychological support due to fear of professional consequences. This reluctance to seek care poses risks to both safety and individual wellbeing.

2.3 Fatigue remains a systemic concern in aviation. Increased duties during peak seasons often exacerbate sleep disruptions, reduce concentration, and contribute to irritability and anxiety. The resulting cycle of stress and underperformance can lead to long-term mental exhaustion. Empirical research has found that fatigue in pilots is widespread—one study found that more than 60 per cent of civil aviation pilots believe fatigue occurs frequently during flights.

2.4 Assistance programs that offer confidential counselling and resources are valuable in supporting aviation personnel in managing stressors that impact their professional performance. Studies consistently show that fatigue, anxiety, and burnout are prevalent among pilots and controllers. Concerns related to excessive working hours, limited rest, particularly in regions affected by conflict.

2.5 Although regulatory frameworks such as flight time limitations (FTL) and Fatigue Risk Management Systems (FRMS) provide important safeguards, evidence indicates that these measures alone may be insufficient in high-stress environments.

### 3. CONCLUSION

3.1 Chronic anxiety and fatigue present substantial risks to aviation safety and to the long-term health of aviation personnel. Contributing factors include sleep loss, extended periods of wakefulness, disruption of the circadian rhythm, and high workload. Existing regulations mitigate but cannot entirely prevent these risks. Therefore, proactive strategies are required, including toolkit for Airlines and ATC organizations.

#### 3.2 Policy and commitment

- a) Formal declaration: Establish corporate anxiety, fatigue, and mental health in conflict zones policy signed by senior management.
- b) Scope: Cover both pilots and air traffic controllers in company operations, with specific provisions for conflict-zone operations.
- c) Zero-stigma approach: Clear communication that seeking help for anxiety and fatigue will not automatically disqualify from duty.

#### 3.3 Monitoring and assessment tools

- a) Fatigue risk assessment forms (before and after duty, confidential).
- b) Anonymous reporting more advance channels for fatigue, stress, or “Not Fit to Fly” declarations.
- c) Fatigue biometrics: Optional use of actigraphy watches, eye tracking, sleep diaries, and validated Sleepiness scales and innovative technologies.

#### 3.4 Operational adjustments in conflict zones

- a) Roster flexibility: adjust if needed maximum duty hours and rest in conflict-affected operations. adjust schedules to fit personal live balance.
- b) Better rotation limits: Cap the number of consecutive flights per pilot.
- c) Standby reserves: Maintain additional standby crew for short-notice replacements.

#### 3.5 Support programs

- a) Peer support networks: Trained peer pilots are available 24/7.
- b) Employee Assistance Program (EAP): Confidential counselling (telephone, virtual, and in-person).
- c) Critical incident stress management (CISM): Structured debriefs after exposure to conflict events.
- d) Wellness and resilience training: Stress inoculation and coping strategies.

### 3.6 **Education and training**

- a) Crew resource management (CRM) with stress and fatigue module.
- b) Training: Identifying early signs of burnout and anxiety.
- c) Conflict-zone briefings: Psychological preparation and scenario-based stress training.

### 3.7 **Safety Management Plan (SMP)**

#### 3.7.1 *Safety policy*

- a) Integrate chronic anxiety and fatigue management into the safety management system (SMS).
- b) Explicitly recognize mental health and fatigue as safety hazards.
- c) Adopt ICAO's Just Culture principles to encourage self-reporting.

#### 3.7.2 *Safety risk management*

- a) Hazard identification
  - 1) Conflict-zone flight schedules.
  - 2) Night operations, irregular duty rosters.
  - 3) Psychological strain from news, family safety concerns, or hostile environments.
- b) Risk assessment
  - 1) Rate likelihood and severity (using ICAO's risk matrix).
  - 2) Track cumulative fatigue scores by fleet and base.
- c) Mitigation measures
  - 1) Adjust rostering in conflict regions.
  - 2) Provide mental health hotlines and resilience resources.
  - 3) Enforce "Not Fit to Fly" declarations without penalty.

#### 3.7.3 *Safety assurance*

- a) Performance indicators (SPIs):
  - 1) Percentage of flights operated with reported fatigue,/ "Not Fit to Fly" reports submitted.

2) Utilization rates of EAP/peer-support.

- b) Audits and reviews: Regular FRMS or other management system audits, psychological safety culture surveys, regulatory oversight.
- c) Feedback loop: Review operational data, adapt measures before high-risk seasons or escalations.

#### 3.7.4

##### *Safety promotion*

- a) Awareness campaigns: Posters, intranet, briefings, official slogans in electronic official communication.
- b) Workshops: Resilience and fatigue seminars.
- c) Sharing best practices: Collaborate with other airlines and civil aviation authorities in the region.

3.8 Adopting these strategies will enhance aviation resilience, protect personnel wellbeing, and strengthen safety margins in both conflict and non-conflict operations.

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