



SCAA

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**Fatigue Management Guidance for
Air Traffic Service Providers**

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SUDAN CIVIL AVIATION AUTHORITY
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Title: Fatigue Management-Guidance for Air Traffic Service Providers

1.0 Purpose:

This Advisory Circular provides Fatigue Management guidance materials with duty time limits as defined by the Authority for the Air Traffic Service Providers.

2.0 Reference

- 2.1 SUCAR_PART 11 (Air Traffic Management).
- 2.2 ICAO Annex 11(Air Traffic Management).
- 2.3 ICAO Doc.9966 (Manual for the Oversight of Fatigue Management Approaches).

3.0 Guidance Information

- 3.1 The aviation industry provides one of the safest modes of transportation in the world. Nevertheless, a safety-critical industry must actively manage hazards with the potential to impact safety. Fatigue is now acknowledged as a hazard that predictably degrades various types of human performance, and can contribute to aviation accidents or incidents. Fatigue is inevitable in a 24 / 7 industry because the human brain and body function optimally with unrestricted sleep at night. Therefore, as fatigue cannot be eliminated, it must be managed.
- 3.2 Fatigue management refers to the methods by which ATS providers and ATS personnel address the safety implications of fatigue. ICAO Annex 11 Standards and Recommended Practices (SARPs) support two distinct methods for managing fatigue:
 - 3.2.1 a prescriptive approach that requires the ATS provider to comply with duty time limits as defined by the SCAA, while managing fatigue hazards using the SMS processes that are in place for managing safety hazards; and or
 - 3.2.2 a performance-based approach that requires the service provider to implement a Fatigue Risk Management System (FRMS) that is approved by the SCAA.
- 3.3 These approaches share two important basic features. First, they are based on scientific principles and knowledge and operational experience. Both should take into account:
 - 3.3.1 the need for adequate sleep (not just resting while awake) to restore and maintain all aspects of waking function (including alertness, physical and mental performance, and mood);
 - 3.3.2 daily rhythms in the ability to perform mental and physical work, and in sleep



- propensity (the ability to fall asleep and stay asleep), that are driven by the circadian clock in the brain;
- 3.3.3 interactions between fatigue and workload in their effects on physical and mental performance; and
- 3.3.4 the operational context and the safety risk that a fatigue-impaired individual represents in that context.
- 3.4 Second, because fatigue is affected by all waking activities (not only work demands), fatigue management has to be a shared responsibility between the SCAA, ANS Providers and ATS individuals:
- 3.5 The SCAA is responsible for providing a regulatory framework that enables fatigue management and ensuring that the ATS Provider is managing fatigue-related risks to achieve an acceptable level of safety performance.
- 3.6 ATS Providers are responsible for providing fatigue-management education, implementing work schedules that enable individuals to perform their duties safely, and having processes for monitoring and managing fatigue hazards.
- 3.7 ATS personnel are responsible for arriving fit for duty, including making appropriate use of non-work periods to obtain sleep, and for reporting fatigue hazards.

4.0 The ATS Provider's Responsibilities

- 4.1 Duty rosters should be prepared and published sufficiently in advance to provide ATS Personnel the opportunity to plan adequate rest. Consideration should be given to the cumulative effects of undertaking long duty hours interspersed with minimum non-work periods, and of avoiding rosters that result in the serious disruption of an established pattern of working and sleeping. Rosters should cover a period of at least [30] days.
- 4.2 Minimum non-work periods need to provide adequate rest such that the ATS Personnel can achieve a suitable sleep period, as well as allowing for consideration of other physiological requirements and any associated travelling or commuting time.
- 4.3 In order to avoid any detriment to an ATS Personnel's performance, opportunities to consume a meal must be arranged when the duty period exceeds [8] hours.
- 4.4 The ATS Provider should not require an ATS Personnel to undertake any safety related task if it is known or suspected that the ATS Personnel is fatigued to the extent that safety may be adversely affected.
- 4.5 To provide evidence of compliance with prescriptive limits, records shall be



kept for [3] months of the duties performed and non-duty periods achieved so as to facilitate inspection by the service's authorized personnel and audit by the SCAA

5.0 ATS Personnel's Responsibilities

- 5.1 An ATS Personnel should not perform any safety relevant tasks when he or she knows that he or she is fatigued or feels unfit to the extent that safety may be adversely affected.
- 5.2 ATS Personnel should make best use of the facilities and opportunities that are provided for rest and for the consumption of meals. They should plan and use rest periods to ensure that they are fully rested.

6.0 Duty Limitation Parameters

- 6.1 Duty Period
 - 6.1.1 The duty period shall not exceed [12] hours
 - 6.1.2 The aggregate of duty period hours shall not exceed [200] hours within a defined period of [720] consecutive hours or [30] consecutive days
 - 6.1.3 There must be at least [12] hours between the end of one duty period and the beginning of the next.
 - 6.1.4 No more than [6] consecutive days of duty shall be worked
 - 6.1.5 If the maximum number of consecutive days of duty is rostered, there shall be a minimum interval of [60] hours between the end of one consecutive period of duty days and the next.

Scientific and operational factors for consideration: There may be variable limits of duty period throughout the day which reflect task complexity and workload requirements as well as time of day and circadian disruption. There must be sufficient time between duty periods for suitable sleep. The cumulative effects of fatigue over a period of days should be considered.

- 6.2 Operational Duty
 - 6.2.1 No period of operational duty shall exceed [2] hours.
 - 6.2.2 No operational duty shall exceed [2] hours without there being a break taken during or at the end of that period.
 - 6.2.3 A break should total not less than [30] minutes.

Scientific and operational factors for consideration: Time in the controlling position should be limited based on complexity of task and workload. Breaks should provide sufficient time away from tasks to allow individuals to resume work with a sufficient level of performance. Breaks could be structured to



allow napping or sleeping opportunities if appropriate.

6.3 Night Duties

6.3.1 A period of night duty shall be defined as starting at [0130] local] and ending at [0529 local].

6.3.2 A duty which covers all or part of the period of night duty shall not exceed [10] hours.

6.3.3 No more than [3] consecutive duties shall be worked which cover all or part of the period of night duty.

6.3.4 A minimum period of [54] hours shall occur between the end of duties which cover all or part of the period of night duty and the commencement of the next period of duty.

Scientific and operational factors for consideration: A night duty shall be wholly or partly between the window of circadian low. Consideration should be given to the research with regard to shift length and night work. Recovery time from night duties should allow recovery from any sleep debt accumulated and reversion to normal sleep cycle rhythms.

6.4 On Call Duties

6.4.1 No more than [3] on-call duties shall be worked in a [7] day period

6.4.2 The maximum length of on call period of duty where the ATS Personnel does not attend the place of work shall be [20] hours.

Scientific and operational factors for consideration: Continuous hours of wakefulness and opportunities available to take sleep during the on-call period.

7.0 Fatigue Reporting

7.1 Fatigue management, whether by prescriptive approach or by an FRMS, relies on identification of fatigue hazards and effective safety reporting. It must be acceptable to raise legitimate issues about fatigue without fear of retribution or punishment from both within and outside the organization. The issues associated with fatigue are difficult to detect if people are unwilling or unable to report them.

7.2 To encourage an ongoing commitment by staff to reporting fatigue hazards voluntarily (as opposed to mandatory reports), the ATS Provider should:

- Have clear processes for fatigue hazard reporting.
- Be clear that the organization expects ATCs to report fatigue hazards;
- Establish a process for what to do when an ATC considers themselves too fatigued to perform safety-critical tasks to an acceptable standard.
- Identify the implications for individuals of submitting a fatigue hazard report;



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- Identify how the ATSP will respond to reports of fatigue hazards, including acknowledging receipt of reports and providing feedback to ATCs who report.
- Take appropriate actions in response to fatigue reports consistent with stated policy.
- Maintain the integrity of the safety reporting system and reporter confidentiality.
- Provide feedback to ATCs on changes made in response to identified fatigue hazards.



Fakhreldein Osman Ahmed
Director General
Sudan Civil Aviation Authority
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