

Civil Aviation Authority
of Fiji



AVOIDANCE OF FATIGUE IN AIRCREW

PART 2 INTERNATIONAL OPERATIONS

Published by:
Civil Aviation Authority of Fiji
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Nadi International Airport
Fiji

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Standards Document

AVOIDANCE OF FATIGUE IN AIRCREW

SD – AFA – Part 2

Civil Aviation Authority of Fiji
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PREFACE

General

Fiji's National Aviation Law consists of a three tier or triple system regulatory system, comprising Acts, Regulations and Standards Documents; the purpose of which is to ensure, where deemed appropriate, compliance and conformance with ICAO Standards and Recommended Practices (SARPS).

The 'three tier' or 'triple system' regulatory system represents Fiji's Primary Legislation System and Specific Operating Regulations to meet Critical Elements CE1 and CE2 of ICAO's Eight Critical Element of a safety oversight system

Standards Documents (SD) are issued by the Civil Aviation Authority of Fiji under the provision of Section 14 (3) (b) of the Civil Aviation Authority Act 1979 (CAP 174A)

Where appropriate, the SD also contains technical guidance (Critical Element CE5) on standards, practices, and procedures that are acceptable to the Authority.

Notwithstanding the above, and where specifically indicated in this Standards Document that such a provision is available, consideration may be given to other methods of compliance that may be presented to the Authority provided they have compensating factors that can demonstrate a level of safety equivalent to or better than those prescribed herein. Accordingly, the Authority will consider each case based on its own merits holistically in the context of and relevancy of the alternative methods to the individual applicant.

When new standards, practices, or procedures are determined to be acceptable, they will be added to this document.

Purpose

This Standards Document on the Avoidance of Fatigue in Aircrew – Part 2 is hereby published pursuant to ANR 49 (4) of the ANRs and is intended for applicants for, and holders of, Air Operator Certificates and for their relevant staff.

Change Notice

This Standards Document is the original issue and replaces Minimum Requirements Document 9, which is cancelled on the effective date of this document, 1st October 2006. It has been developed to support regulation 49 (4) regarding the operator's obligation to comply with standards notified by the Authority and is the means by which such notification is given.



.....
THERESA LEVESTAM
ACTING CHIEF EXECUTIVE

AMENDMENT RECORD

The following space is provided to keep a record of all amendments.

Amendment No.	Effective Date	Entered By	Date Entered	Amendment No.	Effective Date	Entered By	Date Entered
1	27/09/10	CAAF	27/09/10	31			
2	24/01/11	CAAF	04/04/11	32			
3	20/08/19	FT	20/08/19	33			
4				34			
5				35			
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PART 2 - INTERNATIONAL OPERATIONS

1 APPLICATION AND RESPONSIBILITY

- 1.1 These Standards are applicable to all aircraft operations by organisations domiciled in Fiji conducted as public transport flights and aerial work, unless this oversight is retained by the State of Registry of a foreign registered aircraft.
- 1.2 As indicated earlier, this document will be provided in two Parts. Part 1 is applicable to domestic operations. Part 2 will be applicable to international operations.
- 1.3 The operator of an aircraft to whom these Standards apply shall not cause or permit that aircraft to fly unless a scheme, acceptable to the Authority, has been established for the management of the flight and duty times and rest periods of that aircraft's flight crew members.
- 1.4 A flight crew member shall not fly, and an operator shall not cause or permit that person to fly if the flight crew member is suffering from, or, considering the circumstances of the particular flight to be undertaken, is likely to suffer from, fatigue or illness which may affect judgment or performance to the extent that safety may be impaired.
- 1.5 A flight crew member shall not act, and an operator shall not cause that flight crew member to act in contravention of the approved scheme.
- 1.6 The operator is expected to plan their scheme in accordance with the requirements of this document. It is recognised that these Standard provisions will not necessarily be completely adaptable to every type of operation. Operators may, therefore, have variations from the Standard provisions included in their individual schemes. However, approval will only be granted where the operator can show that any proposed variation will ensure an equivalent level of protection against fatigue. Any variation from these Standards will be published in an amendment to this document as an Appendix that specifies the variation and the conditions under which it was found to be acceptable.
- 1.7 The definition of 'Rest' used in this document is the same as that used by ICAO in Annex 6 for 'Rest Period', that is 'Any period of time on the ground during which a flight crew member is relieved of all duties by the operator'.

But ICAO further 'defines' rest at *Annex 6 Attachment A Flight Time and Flight Duty Period Limitations* where paragraph 2.3 reads *The definition of rest period implies the absence of duty and is intended for the purpose of recovering from fatigue: the way in which this recovery is achieved is the responsibility of the individual.*

The Authority believes that this should be taken one step further in that, where a person is not required to carry out any duty before reporting for a flight duty period, then the individual has the responsibility of ensuring that that period is used to the best possible effect to prepare themselves for the forthcoming flight duty period and to do all that is appropriate to mitigate the likelihood of fatigue during the flight duty period from accumulating to the extent that the safety of flight could be jeopardized.

2 DEFINITIONS

Aerodrome - Airport

A defined area on land or water [including any buildings, installations and equipment] intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Authority

Means the Civil Aviation Authority of Fiji established under the Civil Aviation Authority of Fiji Act (as amended).

Base

Means a place designated by the operator and may be a permanent base, or a temporary location for a specified time.

Bunk

A sleeping berth, a horizontal shelf-like bed.

Cabin crew member

A crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

Crew

Means the persons employed or engaged in an aircraft in flight on the operation of the aircraft.

Duty Cycle

A rostered sequence of flights or flight starting at a base and ending at the same base.

Duty Period

A time during which a flight crew member carries out any duty required by their employer.

Flight crew member

A licensed flight crew member charged with duties essential to the operation of an aircraft during a flight duty period.

Flight Deck Duty

A pilot's flight deck duty time shall not include any periods of rostered rest during the flight.

Flight Duty Period

The total time from the moment a flight crew member commences duty, and prior to making a flight or a series of flights to the moment the flight crew member is relieved of all duties. An appropriate time acceptable to the Authority shall be allowed for pre-flight and post-flight duties.

Flight Time

The total time from the moment an aircraft first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight i.e. "chock to chock".

Local Day

A continuous period of 24 hours beginning at midnight local time.

Local Night

A period of 8 hours falling between 2000 and 0600 hours local time.

Local Time

Local standard time or local daylight saving time.

Night

Means the time between 15 minutes after sunset and 15 minutes before sunrise. Sunset and sunrise being determined at the surface. [Applicable to Fiji Islands. 15 min. varies with latitude].

Operator

A person, who exercises operational control over an aircraft.

Operational Control

The exercise by an individual or an organisation of authority over the initiation, continuation, diversion, termination or cancellation of a flight or series of flights in the interest of the safety of the aircraft and the regularity and efficiency of the flight(s).

Pilot-In-Command

The pilot designated by the operator, or in the case of general aviation, by the owner as being in command and charged with the safe conduct of a flight.

Positioning

The practice of transferring crew from one place to another as passengers in surface or air transport, either before or after a flight duty period.

Rest facilities

An adequate in-flight rest facility is a segregated area incorporating a bunk or equivalent, conducive to rest and acceptable to CAAF. Segregated First or Business class seats may be considered acceptable in certain circumstances.

A suitable ground rest facility is an area conducive to rest with comfortable seating, and toilet facilities available.

Rest Period

Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

Roster

A pre-planned pattern of work.

Roster Duration

The minimum published rostered period shall be for 14 days.

Split Flight Duty

Two duty periods separated by a rest period of less than 10 hours.

Suitable accommodation

Accommodation provided by the operator for flight crew members must be conducive to rest with control of heat and light and bathroom facilities available. In isolated circumstances where this standard is unavailable, the best available should be provided.

Standby Duty

A period of time when an operator places restraint on a flight crew member for a nominated period so that the flight crew member will be available for duty if required.

3 GENERAL RESTRICTIONS

- 3.1 When, during a particular duty period, a flight crew member is engaged in air operations that have differing flight time limitations, the most restrictive flight time will apply.
- 3.2 The operator shall consider the flight and duty times in this document as the maximum and further consideration may need to be given in multi – sector, single pilot IFR, time zone changes and or other than normal daytime work hour operations. The operator's scheme may need to show decreased duty times and/or increased rest periods if one or a combination of the above are included in their operations.
- 3.3 **Maximum Duty Times** – 100 hours in any 14 consecutive days and 190 hours in any 28 consecutive days.



- 3.4 Flight crew members not primarily engaged on flying duties are exempt from the limitations prescribed in 3.3 above other than for the 14 days prior to and during a Flight Duty Period or series of Flight Duty Periods.

4 TRAVELLING / DUTY TIME

- 4.1 When a flight crew member is transported by operator provided transport to and from operator provided accommodation the following apply:
- 1) Any travel time in excess of two hours before a flight duty period shall included that excess time in that flight duty period.
 - 2) Any travel time at the completion of a flight duty period shall not be included as any part of that flight duty period or rest period.

5 POSITIONING

- 5.1 When positioning precedes a flight duty period and they are not separated by a rest period, the total time should be subject to the limitations placed upon a single flight duty period. The time spent on positioning shall also be included in the cumulative total of duty hours.
- 5.2 When positioning follows a flight duty period and they are not separated by a rest period, only the time of the flight duty period shall be subject to the limitations placed upon a single flight duty period. The total time spent on duty shall also be included in the cumulative total of duty hours. If the total time on duty exceeds 18 hours in duration the ensuing rest period shall include one local night.
- 5.3 When positioning is separated from a flight duty period by a rest period, half of the time spent on positioning shall be included in the cumulative totals of duty hours. If the positioning exceeds 18 hours in duration the ensuing rest period shall include one local night.

6 PILOT-IN-COMMAND DISCRETION TO EXTEND FLIGHT DUTY PERIOD

Pilot in command discretion is not intended to be used when circumstances causing a delay are known before the “sign on” time. In this case the crew and flight should be re-scheduled.

The one-hour extension beyond that may be scheduled is to be used for problems that arise and delay the scheduled departure and thereby exceed the relevant maximum flight duty time.

Extension over one hour to a maximum of two is permitted after the flight has departed and encounters further delays or for diversion recovery.

- 6.1 A pilot-in-command is permitted, with the concurrence of his flight crew, to extend a flight duty period that has commenced, for up to 1 hour beyond the maximum that may be scheduled **provided circumstances warrant such action and the pilot in command is satisfied that the flight can be operated safely**. In all such cases where this is done the pilot-in-command shall report the circumstances to his employer. When the extension exceeds 1 hour due to circumstances beyond the control of the pilot-in-command and the operator, then both shall submit a written report to the Authority within 7 days. The operator’s scheme should include guidance to the pilot-in-command on the limits within which discretion to extend a flight duty period may be exercised. The provisions for the pilot-in-command of an augmented crew are specified at 13.2 and 13.3

An extension of 2 hours beyond the flight duty period normally permitted shall be the maximum except in cases of a serious threat to life.

6.2 A pilot-in-command may further extend a flight time and/or flight duty period if deemed necessary for **other than commercial reasons but must be assured that the circumstances warrant such action and he is satisfied that the risk of not doing so is greater than undertaking the extension.** Both the pilot-in-command and the operator shall submit a written report to the Authority within 7 days.

7. STANDBY DUTY

7.1 The operator shall:

- 1) apply the following limits on standby periods for flight crew members;

Nature of Duty	Maximum Standby Duty Period
Standby	12 Hours
Standby plus Flight Duty period	20 Hours

Table 1 – Standby Duty

- 2) ensure that suitable ground rest facilities are provided if:
 - i.) A flight crew member is required to be on standby away from base; or
 - ii.) Standby is undertaken at an airport.
- 3) ensure that if a flight crew member is assigned standby immediately after a duty period and without intervening rest, the duty and the subsequent time on standby are totalled and are included in:
 - i.) Any immediately subsequent flight duty period; or
 - ii.) Any immediately subsequent duty period.
- 4) ensure that when a flight crew member completes standby without being called for duty the crew member completes a rest period of at least 10 hours before commencing a subsequent duty or standby period.

7.2 When the standby is at the crew member’s home or suitable accommodation, only 50% of the standby time is to be counted towards the cumulative duty for calculating the following rest period and cumulative duty times.

8 SPLIT FLIGHT DUTY

8.1 When a flight duty period consists of 2 duties separated by a rest period, defined and notified to the flight crew member in advance, an operator may increase the allowable planned flight duty period prescribed as appropriate in accordance with Table 2 below, subject to the conditions prescribed in sub-paragraph 8.4 2), 3) and 4) below.

Consecutive Hours of Rest period	Increase in Flight Duty Period
0 – 2 hrs 59 mins.	NIL
3 – 6 hrs 59 mins.	½ length of rest period
7 – 9 hrs 59 mins.	2/3 length of rest period or 1½ length of rest period if at least 7 hours of the rest period fall between 2000 – 0800 local time where the rest period occurs

Table 2 – Split Duty



- 8.2 The operator shall ensure that the parts of the flight duty period before and after the rest period do not exceed 10 hours, and the total flight duty period, as increased in accordance with Table 2 above, does not exceed 20 hours.
- 8.3 The operator shall ensure that split duty is not combined with augmented flight crew.
- 8.4 The operator shall ensure that:
- 1) If the rest period is 4 hours or more or covers 3 hours or more of the period 2200 – 0600 local time of the place where it occurs, suitable accommodation is provided. In all other circumstances suitable ground rest facilities must be provided;
 - 2) With regard to the cumulative duty periods, if the rest period is less than 8 hours, the full period of the rest period is accountable. If the period is 8 hours or more, 50% of the rest period is accountable;
 - 3) Only one rest period is used within one flight duty period;
 - 4) If the total travelling time in both directions between the place of duty and the rest facility or suitable accommodation exceeds one hour, any traveling time in excess of the 1 hour is deducted from the period for the purposes of calculating the increased flight duty period; and
 - 5) The time difference between the place of the beginning of the duty and the place at which the rest period is taken is not greater than two hours, discounting crossing the International Date Line.

9 MINIMUM REST PERIODS

- 9.1 Minimum rest periods that shall be provided for flight crew members called upon to undertake a flight duty period shall be not less than 10 hours or not less than the preceding duty period which ever is the greater. The rest period shall be increased by 2 hours if any part of a duty period falls between 2200 and 0559 local time calculated from the initial departure port of that duty period.
- 9.2 The operator shall ensure that the minimum rest periods above are increased, if required to achieve not less than:
- 1) 8 local days in each 28 consecutive days free of all duty; and either
 - 2) One 24 hour period including a local night within 7 consecutive days, **or**
 - 3) One 36 hour period within 10 consecutive days which includes two periods between the hours of 2300 and 0400 local standard time.
- 9.3 The operator shall ensure that if any part of three consecutively planned flight duty periods in excess of 8 hours not separated by a day off or other duty in any 7 consecutive days, and any part falls within 2400 – 0559 local time at the reporting place, the subsequent rest period shall not be less than 48 hours.
- 9.4 When, at the end of a duty period, the requirements of two or more rest periods coincide, the longest rest period applicable in the particular circumstances shall be taken.

10 PILOT-IN-COMMAND DISCRETION TO REDUCE A REST PERIOD

- 10.1 A pilot-in-command is permitted, with the concurrence of the relevant flight crew members, to operate with a scheduled rest period reduced to below the minimum required **provided circumstances warrant such action and the pilot-in-command is satisfied the flight can be operated safely**. The exercise of such discretion however, shall be considered exceptional and shall not be used to reduce successive rest periods.

10.2 Any reduction in a rest period should however, allow flight crew members to obtain at least 10 hours at the accommodation where rest is taken. If a reduced rest period is initiated by the pilot-in-command, he or she shall submit a written report to the operator; and if the reduction exceeds two hours then both the operator and the pilot-in-command shall submit a written report to the Authority within 7 days. Except in cases of serious threat to life, a rest period should not be decreased if it immediately follows an extended duty period.

NOTE: "Discretion Reports" whether involving extension of a duty period or reduction of a rest period shall be submitted in the form of the example given in the Appendix to this document. The Authority will use these reports when assessing the realism of particular schedules.

11 REST FACILITIES

11.1 When at the end of a duty period, a rest period is given at any place other than the flight crew member's base; suitable accommodation shall be provided.

11.2

12 FLIGHT AND DUTY TIME LIMITATIONS

12.1A pilot shall not fly and an operator shall not roster a pilot to fly in excess of:

- a) 40 hours in any 7 consecutive days
- b) 100 hours in any 28 consecutive days:
- c) 1000 hours in any 365 consecutive days.

12.2 Flight Duty Period

LOCAL TIME REPORT FOR FLIGHT DUTY	MAXIMUM FLIGHT DUTY PERIOD					
	SECTOR	SECTOR	SECTOR	SECTOR	SECTOR	SECTOR
	1	2	3	4	5	6
0600-1359	12:30	12:30	12	12	12	12
1400-2159	11:30	11:30	11	11	10:30	10
2200-0559	11	10:30	10:30	10:30	10	10

Table 3 - Flight Duty Period

12.3 The maximum sector limit does not apply to pilots of aircraft up to a maximum weight of 5700Kg. The six-sector column duty time limits are applicable.

12.4 A flight duty period is the total time from the moment a flight crew member commences duty, and prior to making a flight or a series of flights to the moment the flight crew member is relieved of all duties. An appropriate time acceptable to the Authority shall be allowed for pre-flight and post-flight duties.

13 AUGMENTED CREW (THREE PILOTS)

13.1 Crew Composition

A minimum of one pilot to act as pilot-in-command and two pilots possessing qualifications approved by the Authority for the operation.

13.2 Flight duty period Single – Sector

The maximum planned flight duty period of 16.00 hours may be extended by 1 hour under the provisions of 6.1.

13.3 Flight Duty Period Two - Sector

The maximum planned flight duty period of 14 hours may be extended by 1 hour under the provisions of 6.1. The maximum of two scheduled sectors may be increased to three sectors if required by operational necessity after that duty has commenced.

13.4 Rest Requirements Augmented Crew

Within each flight time duty period the pilot-in-command shall establish a roster of periods of rest for each pilot that may only be varied at the discretion of the pilot-in-command. The operator shall ensure adequate rest facilities are provided on the aircraft. A reduction in the planned flight duty period may be required if horizontal rest facilities are not provided.

Where any part of a two sector duty falls between 2200 and 0559 local time the subsequent rest period shall include a local night.

Flight duty periods in excess of 15 hours require the following rest period to include one local night.

13.5 Flight Deck Duty

A pilot's flight deck duty time shall not include any periods of rostered rest during the flight.

14 FLIGHT CREW MEMBERS OTHER THAN PILOTS

14.1 Flight engineers, flight navigators, flight radio operators when assigned duty on an aircraft engaged in air operations shall operate to the flight and duty time limitations and rest period requirements applicable to the pilot or pilots of that aircraft.

14.2

15 RECORD KEEPING

15.1 The operator of an aircraft performing air operations shall keep an accurate record of flight and duty times of each flight crew member flying in the aircraft and retain these records for a period of 12 months from the date of the flights referred to therein. The flight and duty time records shall consist of:

- 1) Duration of each duty period and function performed during the period;
- 2) Duration of each duty period whether or not it included a flight duty period;
- 3) Duration of each rest period prior to a duty or standby duty period;
- 4) Cumulative duty times.

APPENDIX 1

PILOT-IN-COMMANDS' DISCRETION REPORT - EXTENSION OF FDP / REDUCTION OF REST PERIOD*

* Deleted as required

Complete as follows :

- (1) Use six figure date/time group throughout expressed in both GMT and Local Time
- (2) For extension of DP - Pilot-in-command to complete parts A, B & D; Operator to complete part E
- (3) For reduction of rest period - Pilot-in-command to complete parts A, C & D; Operator part E
- (4) If necessary use separate reports for Flight Deck and Cabin Crew

NOTE: DISCRETIONARY EXTENSIONS OF DUTY AND REDUCTION OF PRE-FLIGHT REST OF LESS THAN 30 MINUTES SHOULD BE RECORDED ON THE PILOT-IN-COMMANDS' FLIGHT REPORT.

PART A	Operator :	A/C Type	FLT Numbers :	Date(s) :
	Crew:			
PART B	Planned Schedule			Actual
	Place	GMT	Local	Place GMT Local
	On Duty (Sign On)			Duty started
	Depart			Departed
	Arrive			Arrived
	Depart			Departed
	Arrive			Arrived
	Depart			Departed
	Arrive			Arrived
	Depart			Departed
	Arrive			Arrived
	Scheduled DP	hrs mins		Actual DP
	Max allowable DP	hrs mins		Extension
				hrs mins
PART C	Place	GMT	Local	
	Last duty started			
	Last duty ended			
	Actual start of next DP	hrs		
	Rest period reduced by			
PART D	Pilot -in-Commands' Report/Justification			PART E
	1 Crew acclimatized to time zone YES/NO			
	2 (If relevant) Length of preceding rest HOURS			Signed
	Signed			Status
	Date			Date
				Operators Remarks and Action

Distribution - Forward original to Controller Air Safety, Civil Aviation Authority of Fiji, Private Mail Bag, Nadi Airport.

APPENDIX 2
PILOT-IN-COMMAND'S DISCRETION REPORT
(To be completed in DUPLICATE)

NOTE: All times to be recorded as date/time six-figure groups, expressed in both GMT and Local Time.

Part A Operator Aircraft Type

Date:

Crew: Flight Number:

Part B Extension of Flight Duty Period (if appropriate)

VOYAGE DETAILS						
Schedule (Planned)				Actual		
	Place	GMT	Local		GMT	Local
Duty Start (Sign On)				Duty Started		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
FDP to end				FDP ended		
Sch. FDP*				Actual FDP		

Crew Affected:

*When scheduled (planned) flight duty period includes:

- a) In-flight relief, and/or
- b) Split Duty

Rest facilities and/or times rest begins and ends to be detailed in Part D of the form.

Part C Reduction of Pre-flight Rest Period (If appropriate)

Last Duty Started GMT/Local

Last duty Ended GMT/Local

Rest earned Hours

Calculated earliest next available GMT/Local

Actual start of next

Flight duty period (FDP)

Rest Period reduced by

Crew Affected

Part D Report of Circumstances

Signed:.....

Date:

Part E Operator’s Remarks and Action

Signed:

Status:

Date:

Forward original to:

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Civil Aviation Authority of Fiji
Private Mail Bag (NAP 0354)
Nadi Airport
Fiji**