



# Australian Government

## Civil Aviation Safety Authority

I, JOHN FRANCIS McCORMICK, Director of Aviation Safety, on behalf of CASA, make this instrument under subregulations 5 (1), 5.55 (1) and 215 (3), and regulation 210A, of the *Civil Aviation Regulations 1988*, subregulation 11.068 (1) of the *Civil Aviation Safety Regulations 1998*, section 4 and subsection 33 (3) of the *Acts Interpretation Act 1901*, and paragraph 28BA (1) (b) and subsection 98 (4A) of the *Civil Aviation Act 1988*.

**[Signed John F. McCormick]**

John F. McCormick  
Director of Aviation Safety

28 March 2013

### Civil Aviation Order 48.1 Instrument 2013

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#### **PART 1      GENERAL**

##### **1      Name of instrument**

This instrument is the *Civil Aviation Order 48.1 Instrument 2013*.

##### **2      Commencement**

- 2.1 This instrument commences on 30 April 2013.
- 2.2 Despite paragraph 2.1, the provisions of this instrument take effect for an AOC holder and an FCM in accordance with subsection 4.

##### **3      Repeals**

- 3.1 On 30 April 2016, each of the following Civil Aviation Orders (**CAOs**) is repealed, namely CAO 48.0, CAO 48.1, CAO 48.2, CAO 48.3 and CAO 48.4.
- 3.2 To avoid doubt, on 30 April 2016, each of the following Civil Aviation Amendment Orders (**CAAOs**) is repealed, namely CAAO (No. R47) 2004, CAAO (No. R48) 2004, CAAO (No. R49) 2004, CAAO (No. R50) 2004 and CAAO (No. R51) 2004.
- 3.3 To avoid doubt, on 30 April 2016, each CAO mentioned in paragraph 3.1, and each CAAO mentioned in paragraph 3.2, as continued in force by subregulation 335 (2) of CAR 1988 as if it had been made on 4 December 2013 under regulation 210A of CAR 1988, is repealed.

##### **4      Delayed and transitional taking of effect**

- 4.1 This Order takes effect on 30 April 2013 for the following:
  - (a) a person who, on or after the commencement of this Order:
    - (i) applies to CASA for the issue of an AOC; and

- (ii) as a result of the application — becomes the holder of an AOC (an **AOC holder**);
  - (b) each FCM member of a person mentioned in subparagraph (a);
  - (c) for paragraph 16.1 — each person who:
    - (i) immediately before the commencement of this Order was the holder of a flight crew licence; or
    - (ii) on or after the commencement of this Order becomes the holder of a flight crew licence.
- 4.2 Despite subsection 3, on and after the commencement of this Order the Orders mentioned in a paragraph of subsection 3 are taken to no longer apply to the following:
- (a) a person mentioned in sub-subparagraph 4.1 (a) (i) — if, after the commencement of this Order, but before 30 April 2016, the person becomes an AOC holder mentioned in sub-subparagraph 4.1 (a) (ii);
  - (b) each flight crew member of a person mentioned in subparagraph (a).
- 4.3 Subject to paragraph 4.4, this Order applies to an AOC holder (a **transitional AOC holder**) on and from 30 April 2016 if the holder has held an AOC since immediately before the commencement of this Order.
- 4.4 At any time after commencement of this Order but before 30 April 2016, a transitional AOC holder may tell CASA in writing that the holder intends to comply with the requirements of this Order from a specified date that is before 30 April 2016, for all of the holder's operations or for specified operations only.
- 4.5 Where paragraph 4.4 applies, the requirements of this Order take effect, from the specified date, for:
- (a) the transitional AOC holder; and
  - (b) each of the holder's flight crew members.
- 4.6 If paragraph 4.5 applies then, despite subsection 3, from the date specified by the transitional AOC holder under paragraph 4.4:
- (a) the Orders mentioned in a paragraph of subsection 3; and
  - (b) any exemption issued to the transitional AOC holder under paragraph 4.1 of CAO 48.1 and in force;
- are each taken to no longer apply to:
- (c) the holder; or
  - (d) any flight crew member of the holder.
- 4.7 Paragraphs 4.4, 4.5 and 4.6 apply to a person:
- (a) who, before the commencement of this Order, applied to CASA for the issue of an AOC (a **relevant AOC**); and
  - (b) who, as a result of the application, was issued with a relevant AOC after the commencement of this Order;
- as if the person were a transitional AOC holder on and from the date of issue of the relevant AOC.

## 5 Application

- 5.1 Subject to paragraph 5.3, this Order applies, according to its terms, to:
- (a) each AOC authorising aerial work operations, charter operations or regular public transport operations; and
  - (b) each flight crew member employed by an AOC holder.
- 5.2 Subject to paragraph 5.3, this Order sets out according to its terms:
- (a) for paragraph 28BA (1) (b) of the Act — conditions on each AOC mentioned in subparagraph 5.1 (a); and
  - (b) for subregulation 11.068 (1) of CASR 1998 — conditions on the flight crew licence of each flight crew member mentioned in subparagraph 5.1 (b).
- 5.3 The condition set out in paragraph 16.1 applies to the holder of a flight crew licence whether or not the person is employed by an AOC holder.

*Note* Under regulation 11.077 of CASR 1998, it is an offence for a person holding a flight crew licence to contravene a condition of the licence.

## 6 Definitions

- 6.1 In this Order:

***access***, in a provision referring to 1 or more of the following (***necessities***):

- (a) a crew rest facility;
- (b) suitable sleeping accommodation;
- (c) suitable resting accommodation;
- (d) adequate sustenance;

means that there is no restriction on, or impediment to, a flight crew member's immediate and actual use of the necessity:

- (e) in accordance with the provision; or
- (f) if the provision is a definition — in accordance with a provision which uses the defined term.

***acclimatised*** has the meaning given in subsection 7.

***acclimatised time*** means local time at the location where an FCM is acclimatised.

***Act*** means the *Civil Aviation Act 1988*.

***adaptation period*** means a continuous off-duty period for an FCM to become acclimatised to a particular location.

***adequate sustenance*** means food and drink, including clean drinking water, in quantities sufficient to reasonably sustain a person in the person's circumstances.

***AOC*** means an Air Operator's Certificate.

***AOC holder***, or ***holder***, means the holder of an Air Operator's Certificate issued under Part III, Division 2, of the Act.

***approval*** means approval in writing.

***assigned*** means assigned by the AOC holder to his or her FCM.

*Note* For example, the AOC holder ***assigns*** to the FCM ***duty***, ***standby***, a ***home base***, a ***flight duty period***, a ***reporting time***.

**augmented crew operation** means an aircraft operation in which 1 or more FCMs, additional to the minimum required number of FCMs, are engaged in a flight to allow 1 or more FCMs to be relieved of duty during flight time.

**bed**, for suitable sleeping accommodation, includes at least 1 pillow, clean bed linen, and bed covering appropriate for the temperature of the accommodation.

**call out** means being required by an AOC holder to commence a duty period during a standby.

**CAR 1988** means the *Civil Aviation Regulations 1988*.

**CASR 1998** means the *Civil Aviation Safety Regulations 1998*.

**Chief Executive Officer** means the person who is:

- (a) if the AOC holder is an individual — that individual; or
- (b) if the AOC holder is a corporation — the person (however described) whom CASA was satisfied, for subparagraph 28 (1) (b) (iv) of the Act (and the definition of **key personnel** in subsection 28 (3) of the Act), could hold or carry out the duties of the AOC holder's chief executive officer.

**complex operation** means an operation which involves 1 or more of the following:

- (a) an FDP with a displacement time of 2 hours or more;
- (b) an augmented crew operation;
- (c) an FDP that commences when the FCM is:
  - (i) in an unknown state of acclimatisation; or
  - (ii) acclimatised to a location other than the location where the FDP commences.

*Note* AOC holders should consider the impact of Daylight Saving Time on local time differences for relevant locations because Daylight Saving Time may have an impact on whether or not an operation is complex.

**consecutive**, in relation to the hours or days of a period of time mentioned in a provision of this Order, means a continuous, unbroken, period of time for the duration of the hours or days mentioned.

**crew member** has the same meaning as in the Regulations.

*Note* Under regulation 2 of CAR 1988, **crew member** means a person assigned by an operator for duty on an aircraft during flight time, and any reference to **crew** has a corresponding meaning.

**crew rest facility** means a facility on board an aircraft available to an FCM for the FCM to obtain rest or sleep, and classified as follows:

- (a) **class 1** means a bunk or other surface that:
  - (i) allows for a horizontal sleeping position; and
  - (ii) is located separate from both the flight deck and passenger compartment in an area that:
    - (A) is temperature-controlled; and
    - (B) allows the FCM to control light; and
    - (C) provides isolation from noise and disturbance;
- (b) **class 2** means a seat in an aircraft cabin that:
  - (i) allows for a horizontal or near-horizontal sleeping position; and

- (ii) is separated from passengers by at least a curtain that provides darkness and some noise mitigation, and
- (iii) is reasonably free from disturbance by passengers or crew members;
- (c) **class 3** means a seat in an aircraft cabin or flight deck that:
  - (i) reclines at least 40 degrees from the vertical plane; and
  - (ii) provides leg and foot support in the reclined position.

**cruise** means the period of a flight from not less than 30 minutes after take-off until not less than 60 minutes before the estimated time of landing.

**cumulative duty** means the progressive sum of duty periods.

**cumulative flight time** means the progressive sum of flight time, excluding flight time accrued during recreational private operations.

**day** means the period between local midnight at home base and the subsequent local midnight at home base.

**displacement time** means the difference in local time between:

- (a) the place where an FCM commenced an FDP; and
- (b) the place where the FCM undertakes an off-duty period following the FDP.

**duty** means any task that a person who is employed as an FCM is required to carry out associated with the business of an AOC holder.

**duty period** means a period of time which starts when an FCM is required by an AOC holder to report for duty, and ends when the FCM is free of all duties.

**employment** includes employment under a contract for services.

**fatigue**, for an FCM, means a physiological state of reduced alertness or capability to perform mental or physical tasks, which:

- (a) may impair the ability of the FCM to safely operate an aircraft; and
- (b) is caused by 1 or more of the following:
  - (i) the FCM's lack of sleep;
  - (ii) the FCM's extended wakefulness;
  - (iii) the FCM's circadian phase at any relevant time;
  - (iv) the FCM's workload of mental activities, or physical activities, or mental and physical activities at any relevant time.

**fatigue risk management system** (or **FRMS**) means a comprehensive system for managing fatigue-related risks that:

- (a) includes all of the elements set out in Appendix 7; and
- (b) is approved for implementation by CASA.

**flight crew licence**:

- (a) until immediately before 4 December 2013 — has the meaning given in subregulation 2 (1) of CAR 1988; and
- (b) on and from 4 December 2013 — means a flight crew licence within the meaning of regulation 61.010 of CASR 1998.

**flight crew member** (or **FCM**) has the same meaning as in the Regulations. The abbreviation **FCMs** means more than 1 FCM.

*Note* Under subregulation 2 (1) of CAR 1988, **flight crew member** means a licensed **crew member** charged with duties essential to the operation of an aircraft during flight time, and any reference to **flight crew** has a corresponding meaning.

**flight duty period** (or **FDP**) means a period of time which:

- (a) starts when a person is required by an AOC holder to report for a duty period in which 1 or more flights as an FCM are undertaken; and
- (b) ends not less than 15 minutes after the end of the person's final flight as an FCM.

*Note* See also the definition of **positioning**.

**flight time** has the same meaning as in the Regulations.

*Note* Under subregulation 2 (1) of CAR 1988, **flight time** means:

- (a) in the case of a heavier-than-air aircraft — the total time from the moment at which the aircraft first moves under its own power for the purpose of taking-off, until the moment at which it comes to rest after landing; and
- (b) in the case of a lighter-than-air aircraft — the total time from the moment at which the aircraft first becomes airborne until it comes to rest on the ground, excluding any time during which the aircraft is moored.

**flying training** means an aerial work operation for the commercial purpose prescribed in subparagraph 206 (1) (a) (vi) of CAR 1988.

**FRMS Manager** means the person in an AOC holder's organisation who is appointed by the Chief Executive Officer to be responsible for the day-to-day implementation, management and continuing effectiveness of the AOC holder's FRMS.

**home base** means the location, assigned by the AOC holder to the FCM, from where the FCM normally starts and ends a duty period or a series of duty periods.

**in-flight rest** means, in an augmented crew operation, the period of time, or periods of time, during which an FCM has access to a crew rest facility.

**late night operation** means an operation where an FDP includes more than 30 minutes between the hours of 2300 and 0530 local time at the location where the FCM is acclimatised.

*Note* If an FCM is in an unknown state of acclimatisation, an operation in the time frame mentioned in the definition is not considered to be a late night operation.

**local night** means a period of 8 consecutive hours which includes the hours between 2200 and 0500 local time.

**multi-pilot operation** means an aircraft operation conducted under multi-pilot procedures contained in the AOC holder's operations manual.

**off-duty period** means a period of time during which an FCM is free of all duties and standby associated with his or her employment.

**positioning** is defined in paragraph 6.2.

**public transport service** has the same meaning as in the Regulations.

*Note* Under subregulation 2 (1) of CAR 1988, **public transport service** means a service for the carriage of persons or cargo for hire or reward.

**reassign** means to assign to an FCM in a modified form that which had previously been assigned to the FCM.

**recreational private operation** means flying conducted by an FCM in a personal capacity, and at and for the FCM's leisure.

*Note* A flight conducted by an FCM as a private operation is not a recreational private operation if it is conducted for, or on behalf of, an entity, regardless of whether or not the entity is an AOC holder.

**Regulations** means the *Civil Aviation Regulations 1988 (CAR 1988)* and the *Civil Aviation Safety Regulations 1998 (CASR 1998)* read together in accordance with regulation 2C of CAR 1988.

**reporting time** means the time assigned to an FCM to report for an FDP.

**roster** means a list made available to an FCM by an AOC holder setting out the times when the FCM is assigned to undertake duties or standby.

**sector**, for this Order, has the following meanings:

- (a) any flight consisting of a take-off and a landing;
- (b) each hour, or each part of an hour, the FCM spends flight training in a synthetic training device.

**sleep opportunity** means a period of time during an off-duty period when an FCM:

- (a) is not meeting the reasonable requirements of bodily functioning such as eating, drinking, toileting, washing and dressing; and
- (b) has access to suitable sleeping accommodation without, under normal circumstances, being interrupted by any requirement of the AOC holder.

*Note* When an FCM is interrupted during sleep opportunity, this may affect the FCM's fitness for duty before the commencement of, or during, the next FDP.

**SMS** means a safety management system approved by CASA.

**split duty** means an FDP which contains a split-duty rest period.

**split-duty rest period** means a predefined period of time (or, for Appendix 5, a period of time that may or may not be predefined) during which an FCM:

- (a) has access to suitable resting accommodation or suitable sleeping accommodation; and
- (b) is relieved of all duties associated with his or her employment by the AOC holder.

**standby** means a period of time during which an FCM:

- (a) is required by an AOC holder to hold himself or herself available for duties; and
- (b) has access to suitable sleeping accommodation.

**suitable resting accommodation** means a comfortable resting area:

- (a) which has a comfortable temperature and minimal noise levels; and
- (b) which contains at least a comfortable chair; and
- (c) at which the FCM has access to adequate sustenance at times appropriate to the duty requirements.

*Note* Suitable resting accommodation is solely for split-duty rest periods. Suitable sleeping accommodation may also be used for split-duty rest periods.

**suitable sleeping accommodation** means accommodation not within an aircraft, consisting of facilities conducive to sleep, including the following:

- (a) a comfortable self-contained room or compartment;
- (b) a single occupancy, at the discretion of the FCM;
- (c) clean, tidy and hygienic facilities;

- (d) a bed that is comfortable, flat and horizontal, allowing the occupant to sleep on his or her stomach, back or either side;
- (e) minimum noise levels, including low occurrence of random noise;
- (f) facilities to control light, temperature and ventilation;
- (g) access to adequate sustenance.

*Note* A person's home or residence is considered to meet the requirements of **suitable sleeping accommodation**.

**synthetic training device** has the same meaning as in the Regulations.

*Note* Under the dictionary in CASR 1998, **synthetic training device** means a flight simulator, a flight training device, or a basic instrument flight trainer.

**time zone** means a defined region of the earth with a uniform local time which differs by 1 hour, or by part of 1 hour, from the uniform local time of an adjoining region of the earth.

**unforeseen operational circumstance** means an unplanned exceptional event that becomes evident after the commencement of the FDP, such as unforecast weather, equipment malfunction, or air traffic delay.

*Note* Guidance on the application of **unforeseen operational circumstances** is contained in CAAP 48-1.

**written application**, for an approval, means the written application of the AOC holder who is seeking the approval.

6.2 For this Order, **positioning**, for a person who is employed as an FCM:

- (a) means being transported, as a passenger, to a location, by any mode of transportation, as required by the AOC holder; and
- (b) does not include being transported to or from suitable accommodation after or before an FDP; and
- (c) if undertaken immediately before duty that includes the person flying an aircraft as an FCM (**flying duty**) — must be considered part of his or her FDP; and
- (d) if undertaken immediately after the person's flying duty and no other flying duty is to be conducted in the duty period — is not part of his or her FDP or off-duty period.

*Note* The time spent positioning following an FDP, as described in subparagraph 6.2 (d), is not part of the FDP or off-duty period. However, it is added to the FDP for calculating off-duty period requirements. See, for example, clause 9 in Appendix 2.

6.3 The expression, **the operations manual**, when used in a provision of this Order means the operations manual of the AOC holder to whom the provision applies.

## 7 Determination of acclimatisation

7.1 At the commencement of an FDP or an off-duty period at a location, an FCM must be considered to be acclimatised to the location if:

- (a) the location differs by less than 2 hours from the location where the FCM was last acclimatised; and
- (b) the FCM has remained in an acclimatised state since he or she was last acclimatised.

*Note* AOC holders and FCMs should be aware that a determination of acclimatisation under this definition may impact on an individual's body clock to a small degree. For guidance on acclimatisation, AOC holders and FCMs should refer to CAAP 48-1.



- 7.2 At the commencement of an FDP or an off-duty period (a *period*) at a new location which differs in time by 2 hours or more from the location where the FCM was last acclimatised (the *original location*), the FCM is considered to remain acclimatised to the original location if the period at the new location commences less than 36 hours after the FCM commenced a duty period at the original location.
- 7.3 At the commencement of an FDP or an off-duty period (a *period*) at a new location which differs in local time by 2 hours or more from the location where the FCM was last acclimatised (the *original location*), the FCM is considered to be in an unknown state of acclimatisation if the period at the new location commences 36 hours or more after the FCM commenced a duty period at the original location.
- 7.4 An FCM is considered to remain in his or her state of acclimatisation (whether acclimatised to a particular location, or in an unknown state of acclimatisation) until he or she has had:
- (a) an adaptation period in a location (the *adaptation location*) in accordance with Table 7.1 in this subsection; or
  - (b) an adaptation period that is:
    - (i) in a location other than home base; and
    - (ii) in accordance with subparagraph (a); and
    - (iii) reduced by 12 hours for each previous off-duty period that:
      - (A) immediately preceded the adaptation period; and
      - (B) was taken at an off-duty location which differs in local time by less than 2 hours from the adaptation location; and
      - (C) included an off-duty location local night.
- 7.5 In applying Table 7.1 to arrive at an adaptation period for paragraph 7.4:
- (a) determine the time zone displacement between:
    - (i) the location where the FCM was last acclimatised (the *original location*); and
    - (ii) each location where an FDP or off-duty period was commenced since last acclimatised (*later locations*); and
  - (b) then choose the time zone displacement between the original location and whichever of the later locations gives the greatest time zone displacement; and
  - (c) then choose the time zone change in the Table that corresponds to the greatest time zone displacement; and
  - (d) then choose the direction (west or east) in which the FCM travelled and in which, therefore, the greatest time zone displacement occurred under subparagraph (b); and
  - (e) then choose the number of hours west or east (as the case requires) that corresponds to the time zone change chosen under subparagraph (c).

**Table 7.1 Adaptation period to become acclimatised**

Time zone change (measured in time zones)	Adaptation period to become acclimatised to new location (hours)	
	<i>West</i>	<i>East</i>
<i>Note</i> See definition of <i>time zone</i>		
<b>2</b>	<b>24</b>	<b>30</b>
<b>3</b>	<b>36</b>	<b>45</b>
<b>4</b>	<b>48</b>	<b>60</b>
<b>5</b>	<b>48</b>	<b>60</b>
<b>6</b>	<b>48</b>	<b>60</b>
<b>7</b>	<b>72</b>	<b>90</b>
<b>8</b>	<b>72</b>	<b>90</b>
<b>9</b>	<b>72</b>	<b>90</b>
<b>10 or more</b>	<b>96</b>	<b>120</b>

*Note 1* **Adaptation period** means a continuous off-duty period for an FCM to become acclimatised to a particular location.

*Note 2* An adaptation period under paragraph 7.4 may commence before the time when an FCM comes to be in an unknown state of acclimatisation.

*Note 3* For guidance in determining acclimatisation, including examples of how an FCM becomes reacclimatised in accordance with paragraph 7.4, AOC holders and FCMs should refer to CAAP 48-1.

## **PART 2 CONDITIONS**

### **8 General condition on Air Operators' Certificates**

Each Air Operator's Certificate is subject to the condition that the AOC holder must:

- (a) comply with each requirement for the AOC holder as set out in this Order; and
- (b) comply with the limits and requirements for an FCM as provided for by each Appendix of this Order which the AOC holder applies to the FCM; and
- (c) ensure that each of the AOC holder's FCMs, when acting as such, complies with each requirement imposed by this Order on flight crew licences.

### **9 General conditions on flight crew licences**

- 9.1 The flight crew licence of an AOC holder's FCM is subject to the condition that the FCM must comply with each limit and requirement imposed on the FCM by this Order.
- 9.2 The flight crew licence of an FCM in a private operation is subject to the condition that the FCM must comply with the requirement imposed on the FCM by paragraph 16.1 of this Order.

*Note* Under regulation 11.077 of CASR 1998, breach of a flight crew licence condition is a strict liability offence.

## **PART 3 LIMITS and REQUIREMENTS**

### **10 Public transport services**

- 10.1 An AOC holder engaged in a public transport service must comply with the limits and requirements for FCMs mentioned in 1 or more of the following paragraphs, in accordance with this Order:
- (a) the limits and requirements specified in Appendix 1;
  - (b) if the AOC holder is engaged in a multi-pilot operation — the limits and requirements specified in Appendix 2;
  - (c) if the AOC holder is engaged in a multi-pilot operation, other than a complex operation — the limits and requirements specified in Appendix 3;
  - (d) if the AOC holder is engaged in a single-pilot operation — the limits and requirements specified in Appendix 4;
  - (e) if the AOC holder has an FRMS approved for implementation by CASA in accordance with Appendix 7 — the limits and requirements of the FRMS and Appendix 7.

*Note* Appendix 3 is the same as Appendix 2, except that it does not contain the requirements relevant to complex operations, that is, **augmented crew operations**, or operations involving FDPs finishing at a location which differs in local time by 2 or more hours from the location at which the FCM commenced the FDP.

- 10.2 Each FCM of an AOC holder mentioned in paragraph 10.1 must comply with the limits and requirements mentioned in the paragraph or paragraphs which the AOC holder has chosen to comply with under paragraph 10.1.

### **11 Aerial work operations**

- 11.1 An AOC holder engaged in an aerial work operation must comply with the limits and requirements for FCMs mentioned in 1 or more of the following subparagraphs in accordance with this Order:
- (a) the limits and requirements specified in Appendix 1;
  - (b) if the AOC holder is conducting aerial work operations other than flying training — the limits and requirements specified in Appendix 5;
  - (c) if the AOC holder is conducting aerial work operations in the form of flying training — the limits and requirements specified in Appendix 6;
  - (d) if the AOC holder has an FRMS approved for implementation by CASA in accordance with Appendix 7 — the limits and requirements of the FRMS and Appendix 7.

*Note* **Flying training** is specially defined for this Order in subsection 6, Definitions.

- 11.2 Each FCM of an AOC holder mentioned in paragraph 11.1 must comply with the limits and requirements mentioned in the paragraph or paragraphs which the AOC holder has chosen to comply with under paragraph 11.1.

### **12 Private operations**

#### **RESERVED**

*Note* The condition under paragraph 16.1 applies to FCMs whether or not they are employed by an AOC holder. Paragraph 16.1, therefore, applies to FCMs engaged in private operations

as well as FCMs engaged in operations under an AOC. Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1. CASA recommends that FCMs engaged in private operations consider this guidance in determining self-prescribed limits.

### **13 Operations under multiple appendices**

- 13.1 If, under subsection 10 or subsection 11, 2 or more Appendices apply to a single FDP of an FCM, the following rules apply for an operation undertaken at any particular time in the FDP:
- (a) the maximum FDP that an AOC holder and an FCM must comply with is the FDP limit contained in the Appendix under which the operation is being conducted at that particular time;
  - (b) the maximum flight time that an AOC holder and an FCM must comply with is the flight time limit contained in the Appendix under which the operation is being conducted at that particular time.
- 13.2 In determining the maximum FDP and flight time under paragraph 13.1, the limit determined from each Appendix must be based on the time of commencement of the FDP, and not on the time of commencement of operations under each Appendix.
- 13.3 At any particular time in an FDP, the AOC holder and FCM must each ensure that the FCM remains within the cumulative duty and cumulative flight time limits for the Appendix under which the operation is being conducted at that particular time.
- 13.4 Where operations under 2 or more Appendices are undertaken in a single FDP, the minimum off-duty period that the AOC holder and FCM must comply with following the FDP is that contained in the Appendix with the highest off-duty period as if the entire FDP was performed under that Appendix.
- 13.5 An AOC holder and an FCM must comply with the off-duty period requirements of the Appendix determined under paragraph 13.4 before the FCM commences another FDP.

### **14 AOC holder obligations**

#### **Fitness for duty**

- 14.1 In applying an Appendix mentioned in subsection 10 or subsection 11, an AOC holder must not require an FCM to operate an aircraft if, considering the circumstances of the flight to be undertaken, the holder has reason to believe that the FCM is suffering from, or is likely to suffer from, fatigue which may so impair the FCM's performance that the safety of the operation may be affected.

#### **Limits**

- 14.2 An AOC holder must determine for each FCM the limits and requirements that apply to the FCM in accordance with the Appendix that the holder has chosen to apply to the FCM.

*Note* The word "limit" in a provision refers expressly or impliedly to a quantity of time and, depending on the context and other language of the provision, is used to denote a maximum quantity of time that is not to be exceeded except in accordance with this Order, or a minimum quantity of time that is not to be reduced except in accordance with this Order.

## Operations manual

14.3 The AOC holder must include in the operations manual:

- (a) the limits arising from compliance with each applicable Appendix of this Order that the holder has chosen to apply to an FCM, showing:
  - (i) each maximum limit under the Appendix which must not be exceeded; and
  - (ii) each minimum limit under the Appendix which must not be reduced; and

*Note 1* For example, taking into account the provisions of an applicable Appendix, a *flight time limit* must not be exceeded, and an *off-duty period* must not be reduced.

*Note 2* An AOC holder with an FRMS implementation approval must include relevant limits in the operations manual (see subclauses 3.2 and 3.5 in Appendix 7).

- (b) for FCMs conducting a particular operation — each limit mentioned in subparagraph (a) as modified by the AOC holder for the FCMs and the operation, but not so as to exceed a maximum limit, or reduce a minimum limit, set out in the applicable Appendix; and
- (c) where the need to take account of possible hazards arises under subsection 15 — for FCMs conducting a particular operation, each limit mentioned in subparagraph (b) as modified by taking the possible hazard into account.

## Employee responsibilities

14.4 An AOC holder must set out in the operations manual its employees' responsibilities for operational fatigue management, and fatigue risk management.

## Meals

14.5 Where an FCM's FDP is to exceed 5 hours, the AOC holder must provide the opportunity for the FCM to have access to adequate sustenance (a *meal*) during the first 5 hours and periodically after that meal, so that not more than 5 hours elapse between each meal.

## Records and reports

14.6 An AOC holder must maintain records, (including relevant reports and documents) of the following:

- (a) FCM rosters;
- (b) actual duty periods and flight times;
- (c) actual split-duty rest periods, standby periods and off-duty periods;
- (d) the FDPs and flight time limits specified in the operations manual that were extended under the relevant provision (if any) of the Appendix or FRMS which the AOC holder has chosen to comply with under paragraph 10.1 or 11.1, including information about the extensions in such detail as enables the holder to comply with subparagraph 14.8 (a).

*Note* A report under subparagraph 14.6 (d) is not required where an FDP is reassigned under the relevant provision of the Appendix, unless the reassignment results in an FDP or flight time that exceeds the relevant limit set out in the AOC holder's operations manual.

14.7 Each record mentioned in paragraph 14.6, including copies of reports and documents, must be securely retained for at least 10 years from the date the record and copy were made.

- 14.8 Each record concerning an extension of an FDP or a flight time limit mentioned in subparagraph 14.6 (d) must be:
- (a) studied and used by the AOC holder to provide for continuous improvement of the holder's fatigue management, and fatigue risk management policies; and
  - (b) subject to paragraph 14.9, given to CASA within 14 days of the extension occurring.
- 14.9 Subparagraph 14.8 (b) does not apply to an extension under clause 3 of Appendix 5.

#### Home base

- 14.10 An AOC holder engaged in public transport services must:
- (a) determine the home base for each FCM, and inform each FCM of his or her home base; and
  - (b) set out in its operations manual details of these home base determinations along with procedures to ensure that any change in an FCM's home base will not adversely affect aviation safety.

*Note* A determination of home base should be assigned with a degree of permanence.

#### Rosters

- 14.11 An AOC holder must publish each roster so far in advance of the FDPs and standby periods listed in it as to provide the FCM to whom it applies with a reasonable opportunity to plan adequate rest before his or her duty.

*Note* Guidance for AOC holders with regards to their obligations is contained in CAAP 48-1.

### 15 Additional AOC holder obligations

- 15.1 This subsection applies to an AOC holder to whom Appendix 2, 3, 4, 5 or 6 applies under subsection 10 or subsection 11 of this Order.

#### Operations manual procedures for hazards, multiple Appendices etc.

- 15.2 The AOC holder must set out the following in the operations manual:
- (a) procedures for identifying any reasonably foreseeable hazard that may compromise an FCM's alertness during an FDP;
  - (b) procedures for determining the limits and requirements mentioned in subparagraph 14.3 (c) which take into account the identified hazards;
  - (c) procedures for the continuous monitoring and evaluation of the AOC holder's policies, limits, practices and relevant organisational experiences, taking into account the hazards identified by the procedures mentioned in subparagraph (a), with a view to continuous improvement of fatigue management, and fatigue risk management;
  - (d) where the AOC holder undertakes operations under multiple Appendices — procedures to ensure that transitions between the different limits of the Appendices:
    - (i) are undertaken in accordance with subsection 13; and
    - (ii) do not affect aviation safety;
  - (e) a description of the training resources required by paragraph 15.3.

*Note* The procedures mentioned in this paragraph may be met, at least in part, by existing procedures such as those for a safety management system.

## Training

15.3 The AOC holder must, as a minimum:

- (a) make available, and require each FCM to undertake, initial and recurrent fatigue-related risk training relevant to the FCM's duties in operations under the AOC; and
- (b) at the end of the initial training, and at the end each occasion of recurrent training — assess the FCM's knowledge and learning from the training.

*Note* The training required by this paragraph may be incorporated into existing training programs.

15.4 Initial training under paragraph 15.3:

- (a) for an FCM who becomes an AOC holder's employee after this Order takes effect for the holder — must occur within 6 months of the person commencing the employment; and
- (b) for an FCM who was the AOC holder's employee on the date this Order takes effect for the holder — must occur within 6 months of the Order taking effect.

15.5 Initial training under paragraph 15.3 must:

- (a) be in accordance with a syllabus; and
- (b) deliver a thorough knowledge and understanding of the following:
  - (i) fatigue causes;
  - (ii) fatigue-related impairment;
  - (iii) the management of risks associated with fatigue;
  - (iv) the AOC holder's fatigue risk management obligations and procedures under the operations manual and this Order; and
- (c) equip each FCM with the ability to comply with his or her obligations under this Order in operations for the AOC holder.

15.6 Recurrent training must occur at appropriate intervals and:

- (a) be in accordance with a syllabus; and
- (b) revise, build on, and increase the knowledge and understanding acquired under paragraph 15.5.

15.7 An FCM must:

- (a) attend the initial and each recurrent training mentioned in paragraph 15.3; and
- (b) at the end of each training, successfully complete an assessment of learning from the training; and
- (c) satisfy the AOC holder that he or she has sufficient knowledge of, and competence in managing, the fatigue-related risks relevant to his or her duties as an FCM.

15.8 The AOC holder must maintain for each FCM records of training and assessment completed under this subsection.

15.9 Each record mentioned in paragraph 15.8 must be securely retained for at least 10 years from the date the record was made.

*Note* Guidance for AOC holders on these additional obligations is contained in CAAP 48-1.

## **16 Flight crew member obligations**

- 16.1 It is a condition on each flight crew licence that the licence holder must not operate an aircraft if, considering the circumstances of the flight to be undertaken, he or she has reason to believe that he or she is suffering from, or is likely to suffer from, fatigue which may so impair performance that the safety of the operation may be affected.

*Note 1* An FCM employed by an AOC holder should utilise off-duty periods and adaptation periods to obtain an amount of sleep sufficient to support the appropriate and safe discharge of duties during his or her next rostered FDP or standby.

*Note 2* An FCM employed by an AOC holder in an augmented crew operation should utilise in-flight rest opportunities to adequately manage their alertness for the remaining portion of the FDP.

- 16.2 An FCM employed by an AOC holder must, before any FDP, disclose to the AOC holder anything affecting the FCM or connected with the FDP, which he or she has reason to believe may affect his or her ability to meet the AOC holder's fatigue risk management policies or the limits and requirements of the Appendix or Appendices that the holder has chosen to apply to the FCM.

*Note* Without limiting the scope of paragraph 16.2, examples of "anything affecting the FCM or connected with the FDP" include any secondary employment engaged in by the FCM, being unable to obtain sufficient sleep during sleep opportunities, living a long distance from base, travelling a long distance to report for duty. These and other things must be disclosed to the AOC holder if the FCM has reason to believe that, because of their nature, duration, effects or for any other reason, such things may affect his or her ability to meet the AOC holder's fatigue risk management policies and obligations.

- 16.3 Paragraph 16.2 does not require the repetition of anything which the FCM has previously disclosed to the AOC holder as a continuing state of affairs.

*Note* Guidance for individuals on these obligations is contained in CAAP 48-1.



## APPENDIX 1 — BASIC LIMITS

### 1 Sleep opportunity before an FDP

- 1.1 An FCM must not be assigned or commence an FDP commencing away from home base unless, within the 10 hours immediately before commencing the FDP, he or she has at least 8 consecutive hours' sleep opportunity.
- 1.2 An FCM must not be assigned or commence an FDP commencing at home base unless, within the 12 hours immediately before commencing the FDP, he or she has at least 8 consecutive hours' sleep opportunity.

*Note* See subsection 6 of this Order for the definition of *sleep opportunity*, where it is defined as occurring during an off-duty period.

### 2 FDP and flight time limits

- 2.1 An FCM may only be assigned an FDP that is contained between the hours of 0700 and 2200 local time at the location where the FDP is to commence.
- 2.2 An FCM may only be assigned an FDP with a total duration no longer than 9 hours in any 1 day (the *FDP limit*).
- 2.3 An FCM's total flight time on any 1 day must not exceed 7 hours (the *flight time limit*).
- 2.4 An FCM must not exceed an FDP limit or flight time limit in this clause, except where an extension provision in clause 3 permits.

### 3 Extensions

- 3.1 Despite subclause 2.2, the FDP limit mentioned in subclause 2.2 may be extended by up to 1 hour if:
  - (a) the FDP has commenced; and
  - (b) unforeseen operational circumstances arise; and
  - (c) an extension of the FDP is operationally necessary to complete the duty; and
  - (d) the FCM considers himself or herself fit for the extension.
- 3.2 Despite subclause 2.3, the flight time limit mentioned in subclause 2.3 may be extended by up to 30 minutes if:
  - (a) the FDP has commenced; and
  - (b) unforeseen operational circumstances arise; and
  - (c) an extension of the flight time limit is operationally necessary to complete the duty; and
  - (d) the FCM considers himself or herself fit for the extension.

*Note 1* Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft, and therefore has discretion not to permit an extension.

*Note 2* Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

### 4 Off-duty period limit

- 4.1 An FCM must have a minimum off-duty period of at least 12 consecutive hours during any consecutive 24 hour period.
- 4.2 An FCM must have a minimum of 2 days off-duty during any consecutive 7 day period.

**5 Limit on cumulative flight time**

- 5.1 The cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 100 hours.
- 5.2 The cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 000 hours.

## APPENDIX 2 – PUBLIC TRANSPORT SERVICES – MULTI-PILOT OPERATIONS

### 1 Sleep opportunity before an FDP or standby

- 1.1 An FCM must not be assigned or commence an FDP or standby commencing away from home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 10 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.
- 1.2 An FCM must not be assigned or commence an FDP or standby commencing at home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 12 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.

*Note* See subsection 6 of this Order for the definition of *sleep opportunity*, where it is defined as occurring during an off-duty period.

### 2 Limits for an acclimatised FCM

- 2.1 Subject to clause 5, an acclimatised FCM must not be assigned an FDP longer than the number of hours specified in Table 2.1 in this clause (the ***FDP limit***), as determined by the acclimatised time at the start of the FDP and the number of sectors to be flown.
- 2.2 An acclimatised FCM must not be assigned flight time during an FDP longer than the number of hours in brackets specified in Table 2.1 (the ***flight time limit***), as determined by the acclimatised time at the start of the FDP and the number of sectors to be flown.
- 2.3 In applying Table 2.1, first, choose the appropriate acclimatised time at which the FDP for the FCM is to start, then choose the number of sectors which are to be flown. The maximum FDP for the acclimatised FCM is the number under the chosen number of sectors that corresponds to the chosen acclimatised time at which the FDP for the FCM is to start. The maximum flight time for the chosen acclimatised time is the number in brackets alongside the number for maximum FDP.

**Table 2.1 Maximum FDP and flight time (in hours) for an acclimatised FCM according to number of sectors and acclimatised time at the start of the FDP**

Acclimatised time at start of FDP	Maximum FDP and flight time hours (in brackets) according to sectors to be flown					
	1-2	3	4	5	6	7+
<b>0500 – 0559</b>	11(9)	10(8)	10(8)	9(8)	9(8)	9(8)
<b>0600 – 0659</b>	12(9)	11(9)	11(9)	10(8)	10(8)	9(8)
<b>0700 – 0759</b>	13(9.5)	12(9)	12(9)	11(9)	11(9)	10(8)
<b>0800 – 1059</b>	14(10)	13(9.5)	13(9.5)	12(9)	11(9)	11(9)
<b>1100 – 1359</b>	13(9.5)	12(9)	12(9)	11(9)	11(9)	10(8)
<b>1400 – 1459</b>	12(9)	11(9)	11(9)	10(8)	10(8)	9(8)
<b>1500 – 1559</b>	11(9)	10(8)	10(8)	10(8)	9(8)	9(8)
<b>1600 – 2259</b>	10(8)	9(8)	9(8)	9(8)	8(7)	8(7)
<b>2300 – 0459</b>	10(8)	9(8)	9(8)	8(7)	8(7)	8(7)

*Note* To determine an FCM's acclimatised time, refer to subsection 7 at the beginning of this Order.

### **3 Limits for an FCM in an unknown state of acclimatisation**

- 3.1 Subject to clause 5, an FCM in an unknown state of acclimatisation must not be assigned an FDP longer than the number of hours specified in Table 3.1 in this clause, as determined by duration of the off-duty period immediately before the FDP and the number of sectors to be flown.
- 3.2 An FCM in an unknown state of acclimatisation must not be assigned flight time during an FDP longer than the number of hours in brackets specified in Table 3.1, as determined by the duration of the off-duty period immediately before the FDP and the number of sectors to be flown.
- 3.3 In applying Table 3.1, first, choose the appropriate duration of off-duty period before the FDP for the FCM, then choose the number of sectors which are to be flown. The maximum FDP for the appropriate off-duty period for the FCM is the number under the chosen number of sectors that corresponds to the chosen off-duty period. The maximum flight time for the chosen duration is the number in brackets alongside the number for maximum FDP.

**Table 3.1 Maximum FDP and flight time for an FCM in an unknown state of acclimatisation according to number of sectors and duration of the off-duty period immediately before the FDP**

Duration of off-duty period immediately before the FDP	Maximum FDP and flight time hours (in brackets) according to sectors to be flown					
	1-2	3	4	5	6	7+
Less than 30 hours	11(9)	10(8)	10(8)	9(8)	9(8)	9(8)
30 hours or more	12(9)	11(9)	11(9)	10(8)	10(8)	9(8)

- 3.4 An FCM may only be assigned 4 consecutive FDPs in an unknown state of acclimatisation after which the FCM must have an adaptation period sufficient to become reacclimatised in accordance with paragraph 7.4 at the beginning of this Order.

#### **4 Increase in FDP limits by split duty**

- 4.1 Subject to subclause 4.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable sleeping accommodation, the maximum FDP worked out under clause 2 or 3 may be increased by up to 4 hours, provided the new maximum under clause 2 or 3 does not then exceed 16 hours.
- 4.2 After an FDP mentioned in subclause 4.1, the first 4 hours of the split-duty rest period may be reduced by 50% in determining the subsequent off-duty period or cumulative duty time under clause 10 or clause 12 of this Appendix.
- 4.3 Subject to subclause 4.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable resting accommodation, the limits under clause 2 or 3 may be increased by 2 hours.
- 4.4 If a split-duty rest period includes any period between the hours of 2300 to 0529:
- (a) acclimatised time; or
  - (b) if the FCM is in an unknown state of acclimatisation — local time;
- then:
- (a) the split-duty rest period must be for a consecutive period of at least 7 hours with access to suitable sleeping accommodation; and
  - (b) the maximum FDP may be increased to 16 hours (if not already permitted) but subclause 4.2 does not apply.
- 4.5 Any remaining portion of an FDP following a split-duty rest period must be no longer than 6 hours.

#### **5 Increase in FDP and flight time limits in an augmented crew operation**

- 5.1 Subject to the conditions in subclause 5.3, an acclimatised FCM in an augmented crew operation must not be assigned an FDP or flight time longer than the number of hours specified in Table 5.1 in this clause, as determined

by the acclimatised time at the start of the FDP, the class of crew rest facility available, and the number of additional FCMs.

5.2 Subject to the conditions in subclause 5.3, an FCM in an unknown state of acclimatisation, must not be assigned an FDP or flight time longer than the number of hours specified in Table 5.2 in this clause, as determined by the duration of the off-duty period immediately before the FDP, the class of crew rest facility available, and the number of additional FCMs.

5.3 For subclauses 5.1 and 5.2, the conditions are as follows:

- (a) the AOC holder's operations manual must have procedures for augmented crew operations;
- (b) the FCMs at the end of the FDP for the augmented crew operation must be the same as the FCMs who commenced the FDP for the augmented crew operation;

*Note* For safety reasons, this is a critical condition. If, for example, a medical emergency required the disembarkation of an FCM during the FDP, for the flight to continue all of the FCMs must be replaced with a new augmented crew commencing a new FDP.

- (c) the FDP must be limited to 3 sectors;
- (d) the minimum in-flight rest during the FDP must be:
  - (i) for each FCM who will not be at the aircraft controls during the final landing — 1.5 consecutive hours; and
  - (ii) for each FCM who will be at the aircraft controls during the final landing — 2 consecutive hours;
- (e) the in-flight rest must be planned for the cruise phase of the flight;
- (f) if an assigned FDP is to exceed 14 hours, then:
  - (i) not more than 2 sectors may be assigned; and
  - (ii) for the last sector (if more than 1) — the scheduled flight time must be at least 9 hours;
- (g) if an assigned FDP is to exceed 16 hours, then:
  - (i) only 1 sector may be assigned; and
  - (ii) the minimum in-flight rest during the FDP must be:
    - (A) for each FCM who will not be at the aircraft controls during the final landing — 2 consecutive hours; and
    - (B) for each FCM who will be at the aircraft controls during the final landing — 3 consecutive hours.

*Note* The minimum in-flight rest specified may not provide adequate rest to ensure alertness for the remainder of the FDP. Guidance on the use of in-flight rest is contained in CAAP 48-1.

5.4 To apply Table 5.1 for an FCM who is acclimatised, first, choose the appropriate acclimatised time at which his or her FDP is to start, then choose the class of crew rest facility available and within the class choose the number of additional FCMs. The maximum FDP for the acclimatised FCM is the number under the chosen number of additional FCMs under the chosen class that corresponds to the acclimatised time at which the FDP for the FCM is to start. The maximum flight time for the chosen acclimatised time is the number in brackets alongside the number for maximum FDP.

**Table 5.1 Maximum FDP and flight time (in hours) for an acclimatised FCM in an augmented crew operation according to class of crew rest facility, number of additional FCMs and acclimatised time at the start of the FDP**

Acclimatised time at start of FDP	Maximum FDP, and flight time (in brackets), according to class of crew rest facility and number of additional FCMs					
	Class 1		Class 2		Class 3	
<i>Additional FCMs</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<b>0600 – 0759</b>	15.5(13.5)	17.5(15.5)	14.5(12.5)	16(14)	13.5(11.5)	14(12)
<b>0800 – 1059</b>	16(14)	18(16)	15.5(13.5)	17(15)	15(13)	15.5(13.5)
<b>1100 – 1359</b>	15.5(13.5)	17.5(15.5)	15(13)	16(14)	13.5(11.5)	14(12)
<b>1400 – 1559</b>	15(13)	16.5(14.5)	13.5(11.5)	15(13)	12(10)	13(11)
<b>1600 – 0559</b>	14(12)	15(13)	12.5(10.5)	13.5(11.5)	11(9)	11.5(9.5)

*Note* To determine an FCM's acclimatised time, refer to subsection 7 at the beginning of this Order.

- 5.5 To apply Table 5.2 to an FCM who is in an unknown state of acclimatisation, first, choose the appropriate off-duty period that is immediately before his or her FDP, then choose the class of crew rest facility available and within the class choose the number of additional FCMs. The maximum FDP for the FCM is the number under the chosen number of additional FCMs under the chosen class that corresponds to the off-duty period. The maximum flight time for the chosen off-duty period is the number in brackets alongside the number for the maximum FDP.

**Table 5.2 Maximum FDP and flight time (in hours) for an FCM in an unknown state of acclimatisation in an augmented operation according to class of crew rest facility, number of additional FCMs and duration of off-duty period immediately before to the FDP**

Duration of off-duty period immediately before the FDP	Maximum FDP, and flight time (in brackets), according to class of crew rest facility and number of additional FCMs					
	Class 1		Class 2		Class 3	
<i>Additional FCMs</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<b>Less than 30 hours</b>	14(12)	15(13)	12.5(10.5)	13.5(11.5)	11(9)	11.5(9.5)
<b>30 hours or more</b>	15(13)	16.5(14.5)	13.5(11.5)	15(13)	12(10)	13(11)

*Note* These are the maximum FDP and flight time limits under this Appendix unless, for any particular FCM, other provisions have the effect of reducing these limits (for example, subsections 14 and 15 of this Order).

## 6 Delayed reporting time

### *Delays without operations manual procedures*

- 6.1 Subclauses 6.2 to 6.4 apply to an AOC holder if the operations manual does not have procedures for delays.
- 6.2 The AOC holder may:
- (a) only delay an FCM's reporting time (the ***original reporting time***) if the FCM is first informed of the delay at least 10 hours before the reporting time; and
  - (b) if subparagraph (a) applies — consider the period between the original reporting time and the new reporting time (the ***period of the delay***) to be an off-duty period; and
  - (c) if subparagraph (b) applies — at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.
- 6.3 If:
- (a) the AOC holder delays the FCM's original reporting time; and
  - (b) does not inform the FCM of the delay at least 10 hours before the original reporting time;
- then, the FCM's FDP is taken to commence at the original reporting time.
- 6.4 If subclause 6.3 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

### *Delays under operations manual procedures*

- 6.5 Subclauses 6.6 to 6.12 apply to an AOC holder if the operations manual has procedures for 1 or more delays.
- 6.6 If an AOC holder's operations manual has procedures for delays, the AOC holder may delay an FCM's original reporting time if the AOC holder informs the FCM of the new reporting time as follows:
- (a) if the FCM is at home base:
    - (i) at least 2 hours before the original reporting time; and
    - (ii) at least 2 hours before each new reporting time; or
  - (b) if the FCM is not at home base:
    - (i) at least 1 hour before the original reporting time; and
    - (ii) at least 1 hour before each new reporting time.
- 6.7 If an FCM is informed of a delay in accordance with subclause 6.6, the period between the original reporting time and the final new reporting time is deemed to be standby.
- Note* The period mentioned in subclause 6.7 is deemed to be standby whether or not subparagraph (b) of the definition of ***standby*** is met.
- 6.8 If an FCM is not informed of a delay in accordance with subclause 6.6, the FCM's FDP is taken to commence at whichever of the following is the later:
- (a) the original reporting time; or



- (b) the last new reporting time following a delay of which the FCM was informed in accordance with subclause 6.6.
- 6.9 If subclause 6.8 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

*A single delay of at least 10 hours under operations manual procedures*

- 6.10 Despite subclause 6.7, if the period of any single delay to an FCM's FDP is at least 10 hours, the AOC holder may:
- (a) consider the period of the delay to be an off-duty period; and
  - (b) at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.

*Maximum FDP after delay under operations manual procedures*

- 6.11 If:
- (a) an FCM's FDP is delayed under subclause 6.6; and
  - (b) the FDP commences at a new reporting time that is within 4 hours of the original reporting time;
- then, the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:
- (c) the original reporting time; or
  - (d) the new reporting time.
- 6.12 If:
- (a) the FCM's FDP is delayed under subclause 6.6; and
  - (b) the FDP commences at a new reporting time that is at least 4 hours after the original reporting time;
- then:
- (c) the FDP is taken to have commenced 4 hours after the original reporting time; and
  - (d) the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:
    - (i) the original reporting time; or
    - (ii) the time at which the FDP is taken to have commenced in accordance with subparagraph (c).

*Cancellations — with or without operations manual procedures for delays*

- 6.13 If:
- (a) an FCM's FDP is delayed under subclause 6.2 or 6.6; and
  - (b) the AOC holder informs the FCM that the flight will not occur (*cancellation*);
- then, the FCM must have an off-duty period of at least 10 consecutive hours, commencing from the time he or she is informed of the cancellation, before again being assigned an FDP in accordance with this Appendix.

## **7 Reassignment and extension**

- 7.1 After an FCM's assigned FDP commences, the AOC holder may reassign to the FCM a modified FDP and number of sectors to be flown, provided that each of the following applies:
- (a) the modified FDP must not be more than 4 hours longer than the assigned FDP;
  - (b) subject to subclauses 7.3 and 7.4 — the modified FDP and flight time must not exceed the limits in the holder's operations manual for the new number of sectors;
  - (c) the FCM, or each FCM, must consider himself or herself fit for the modified FDP.

- 7.2 If subclause 7.1 applies, the FCM may continue in the modified FDP in accordance with subclause 7.1.

*Note* Clause 13 applies to the reassignment of an FDP which results in the modified FDP being a late night operation.

- 7.3 Despite the FDP limits provided in the operations manual, in unforeseen operational circumstances at the discretion of the pilot in command:
- (a) the FDP limits in the operations manual may be extended by up to:
    - (i) 1 hour; or
    - (ii) for an augmented crew operation under clause 5 — 2 hours; and
  - (b) the sectors for the FDP limits may be increased by 1 more than would otherwise be the case for the FDP.
- 7.4 Despite the limits provided in the operations manual, the flight time limit for an FDP may be extended:
- (a) by not more than 30 minutes; or
  - (b) for an augmented crew operation — by not more than 1 hour;
- if:
- (c) it is operationally necessary in order to complete the duty; and
  - (d) the FCM, or each FCM, considers himself or herself fit for the extension.
- Note* Clause 13 does not apply to the extension of an FDP which results in the FDP being a late night operation.
- 7.5 An FDP limit must not be reassigned or extended under this clause if it would cause an FCM to exceed the cumulative flight time limits in clause 11 or the cumulative duty time limits in clause 12.

- 7.6 Despite subclause 7.5, if:
- (a) unforeseen operational circumstances arise after take-off on the final sector of an FDP; and
  - (b) the unforeseen operational circumstances would cause an FCM to exceed:
    - (i) any limit or number permitted under this clause; or
    - (ii) the cumulative flight time limits in clause 11; or
    - (iii) the cumulative duty time limits in clause 12;

then, the flight may continue to the planned destination or alternate at the discretion of the pilot in command.

*Note 1* Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft and, therefore, has a discretion to not permit an extension to occur even if otherwise permissible under this clause.

*Note 2* Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

## **8 Standby limits**

- 8.1 An AOC holder must not require an FCM to be on continuous standby for a period longer than 16 hours.
- 8.2 The maximum allowable FDP after a call out from standby must be decreased by the number of hours by which the standby exceeds 12 hours.
- 8.3 A standby which is completed without a call out must be followed by an off-duty period of at least 10 consecutive hours.

## **9 Positioning**

An FCM may, on completion of assigned flight duties, and at the request of the AOC holder, position to a suitable location but only if the FCM agrees to do so. However, the time spent in the positioning must be added to the preceding FDP when determining minimum off-duty periods under clause 10.

*Note* For clause 9, an FCM may decline to position to a suitable location.

## **10 Off-duty period limits**

- 10.1 Subject to subclause 10.2, where an FCM's FDP does not exceed 12 hours, his or her following off-duty period must be at least as follows:
  - (a) if the FCM is acclimatised and undertaking the off-duty period away from home base — the sum of:
    - (i) 10 hours; and
    - (ii) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east;
  - (b) if the FCM is acclimatised and undertaking the off-duty period at home base — the sum of:
    - (i) 12 hours; and
    - (ii) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east;
  - (c) if the FCM is in an unknown state of acclimatisation — the sum of:
    - (i) 14 hours; and
    - (ii) the amount of the displacement time.
- 10.2 Where an FCM's FDP (the ***last FDP***) does not exceed 10 hours, his or her following off-duty period (***ODP 2***) may be reduced to not less than 9 hours, provided that:
  - (a) the off-duty period undertaken immediately before the last FDP was at least 12 hours, including a local night; and
  - (b) the FCM is acclimatised at the commencement of the ODP 2; and
  - (c) the ODP 2 is undertaken over a local night; and
  - (d) the ODP 2 is not undertaken at home base; and
  - (e) the off-duty period following the FDP after ODP 2 is at least 12 hours, including a local night.

- 10.3 Subject to subclause 10.4, where an FCM's FDP exceeds 12 hours, his or her following off-duty period must be at least as follows:
- (a) if the FCM is acclimatised — 12 hours, plus the sum of:
    - (i) 1.5 times the time that the FDP exceeded 12 hours; and
    - (ii) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east;
  - (b) if the FCM is in an unknown state of acclimatisation — 14 hours, plus the sum of:
    - (i) 1.5 times the time that the FDP exceeded 12 hours; and
    - (ii) the amount of the displacement time.
- 10.4 If, after an FDP (the *first FDP*) but before the next FDP (the *second FDP*), the off-duty period calculated under this clause is more than 14 hours, the off-duty period may be reduced to not less than 14 hours, provided that:
- (a) the reduced off-duty period is undertaken away from home base; and
  - (b) the first FDP was not extended past the FDP limit as provided for under the AOC holder's operations manual; and
  - (c) the FCM commences the second FDP in an acclimatised state; and
  - (d) the off-duty period following the second FDP is of at least 36 consecutive hours and includes 2 local nights.
- 10.5 Before beginning an FDP or standby, an FCM must have had at least 36 consecutive hours off-duty, including 2 local nights, in the 168 hours before the projected end time of the assigned FDP or assigned standby.
- 10.6 Before beginning an FDP or standby, an FCM must have had:
- (a) at least 7 days off-duty in the 28 consecutive days before the standby or FDP commences; and
  - (b) at least 24 days off-duty in the 84 consecutive days before the standby or FDP commences.

## **11 Limit on cumulative flight time**

- 11.1 The cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 100 hours.
- 11.2 The cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 000 hours.

## **12 Limit on cumulative duty time**

- 12.1 The cumulative duty accrued by an FCM during any consecutive 168 hour period must not exceed 60 hours.
- 12.2 The cumulative duty accrued by an FCM during any consecutive 336 hour period must not exceed 100 hours.

*Note* 168 hours is the number of hours in a 7 day period, and 336 hours is the number of hours in a 14 day period.

## **13 Limit on late night operations**

- 13.1 If:
- (a) an FCM is assigned an FDP involving a late night operation (*FDP 1*); and

(b) his or her next assigned FDP is another late night operation (**FDP 2**); the FCM must not commence FDP 2 until at least 24 hours have elapsed since the commencement of FDP 1.

13.2 If, in any consecutive 168 hour period (the *period*), an FCM is assigned 3 or more FDPs involving late night operations, then for the period, the combined numerical total of all assigned or reassigned:

- (a) FDPs involving late night operations; and
  - (b) other FDPs; and
  - (c) standby periods;
- must not exceed 4.

*Note* Thus, in any consecutive 168 hour period, if an FCM is assigned 3 late night operations, he or she may only also be assigned 1 other FDP (late night operation or otherwise), or 1 standby. If, in the 168 hour period, the FCM is assigned 4 late night operations, he or she must not also be assigned any other FDP or standby.

13.3 For this clause, reference to an assigned FDP involving a late night operation includes a reassigned FDP under subclause 7.1 that is a late night operation.

13.4 An FDP that would otherwise fall within the definition of a *late night operation* because of an extension under subclause 7.3 or 7.4, is not a late night operation for this clause.

#### **14 Maximum durations must not be exceeded**

Unless an extension is permitted under clause 7, in performing duty an FCM must not exceed the following:

- (a) the maximum duration of the FDP specified for the FCM in the AOC holder's operations manual;
- (b) the maximum flight time specified for the FCM in the AOC holder's operations manual.

## APPENDIX 3 – PUBLIC TRANSPORT SERVICES – MULTI-PILOT OPERATIONS OTHER THAN COMPLEX OPERATIONS

### 1 Sleep opportunity before an FDP or standby

- 1.1 An FCM must not be assigned or commence an FDP or standby commencing away from home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 10 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.
- 1.2 An FCM must not be assigned or commence an FDP or standby commencing at home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 12 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.

*Note* See subsection 6 of this Order for the definition of *sleep opportunity*, where it is defined as occurring during an off-duty period.

### 2 FDP and flight time limits

- 2.1 An FCM must not be assigned an FDP longer than the number of hours specified in Table 2.1 in this clause (the ***FDP limit***), as determined by the local time at the start of the FDP and the number of sectors to be flown.
- 2.2 An FCM must not be assigned flight time during an FDP longer than the number of hours in brackets specified in Table 2.1 (the ***flight time limit***), as determined by the local time at the start of the FDP and the number of sectors to be flown.
- 2.3 In applying Table 2.1, first, choose the appropriate local time at which the FDP for the FCM is to start, then choose the number of sectors which are to be flown. The maximum FDP for the FCM is the number under the chosen number of sectors that corresponds to the chosen local time at which the FDP for the FCM is to start. The maximum flight time for the chosen local time is the number in brackets alongside the number for maximum FDP.

**Table 2.1 Maximum FDP and flight time (in hours) for an FCM according to number of sectors and local time at the start of the FDP**

Local time at start of FDP	Maximum FDP, and flight time (in brackets), according to sectors to be flown					
	1-2	3	4	5	6	7+
<b>0500 – 0559</b>	11(9)	10(8)	10(8)	9(8)	9(8)	9(8)
<b>0600 – 0659</b>	12(9)	11(9)	11(9)	10(8)	10(8)	9(8)
<b>0700 – 0759</b>	13(9.5)	12(9)	12(9)	11(9)	11(9)	10(8)
<b>0800 – 1059</b>	14(10)	13(9.5)	13(9.5)	12(9)	11(9)	11(9)
<b>1100 – 1359</b>	13(9.5)	12(9)	12(9)	11(9)	11(9)	10(8)
<b>1400 – 1459</b>	12(9)	11(9)	11(9)	10(8)	10(8)	9(8)
<b>1500 – 1559</b>	11(9)	10(8)	10(8)	10(8)	9(8)	9(8)
<b>1600 – 2259</b>	10(8)	9(8)	9(8)	9(8)	8(7)	8(7)
<b>2300 – 0459</b>	10(8)	9(8)	9(8)	8(7)	8(7)	8(7)

### **3 Increase in FDP limits by split duty**

- 3.1 Subject to subclause 3.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable sleeping accommodation, the maximum FDP worked out under clause 2 may be increased by up to 4 hours, provided the new maximum under clause 2 does not then exceed 16 hours.
- 3.2 After an FDP mentioned in subclause 3.1, the first 4 hours of the split-duty rest period may be reduced by 50% in determining the subsequent off-duty period or cumulative duty time under clause 8 or clause 10 of this Appendix.
- 3.3 Subject to subclause 3.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable resting accommodation, the limits under clause 2 may be increased by 2 hours.
- 3.4 If a split-duty rest period includes any period between the hours of 2300 to 0529 local time, then:
  - (a) the split-duty rest period must be for a consecutive period of at least 7 hours with access to suitable sleeping accommodation; and
  - (b) the subsequent maximum FDP may be increased to 16 hours (if not already permitted) but subclause 3.2 does not apply.
- 3.5 Any remaining portion of an FDP following a split-duty rest period must be no longer than 6 hours.

### **4 Delayed reporting time**

#### *Delays without operations manual procedures*

- 4.1 Subclauses 4.2 to 4.4 apply to an AOC holder if the operations manual does not have procedures for delays.

- 4.2 The AOC holder may:
- (a) only delay an FCM's reporting time (the *original reporting time*) if the FCM is first informed of the delay at least 10 hours before the reporting time; and
  - (b) if paragraph (a) applies — consider the period between the original reporting time and the new reporting time (the *period of the delay*) to be an off-duty period; and
  - (c) if paragraph (b) applies — at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.
- 4.3 If:
- (a) the AOC holder delays the FCM's original reporting time; and
  - (b) does not inform the FCM of the delay at least 10 hours before the original reporting time;
- then, the FCM's FDP is taken to commence at the original reporting time.
- 4.4 If subclause 4.3 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

*Delays under operations manual procedures*

- 4.5 Subclauses 4.6 to 4.12 apply to an AOC holder if the operations manual has procedures for 1 or more delays.
- 4.6 If an AOC holder's operations manual has procedures for delays, the AOC holder may delay an FCM's original reporting time if the AOC holder informs the FCM of the new reporting time as follows:
- (a) if the FCM is at home base:
    - (i) at least 2 hours before the original reporting time; and
    - (ii) at least 2 hours before each new reporting time; or
  - (b) if the FCM is not at home base:
    - (i) at least 1 hour before the original reporting time; and
    - (ii) at least 1 hour before each new reporting time.
- 4.7 If an FCM is informed of a delay in accordance with subclause 4.6, the period between the original reporting time and the final new reporting time is deemed to be standby.
- Note* The period mentioned in subclause 4.7 is deemed to be standby whether or not paragraph (b) of the definition of *standby* is met.
- 4.8 If an FCM is not informed of a delay in accordance with subclause 4.6, the FCM's FDP is taken to commence at whichever of the following is the later:
- (a) the original reporting time; or
  - (b) the last new reporting time following a delay of which the FCM was informed in accordance with subclause 4.6.
- 4.9 If subclause 4.8 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

*A single delay of at least 10 hours under operations manual procedures*

- 4.10 Despite subclause 4.7, if the period of any single delay to an FCM's FDP is at least 10 hours, the AOC holder may:
- (a) consider the period of the delay to be an off-duty period; and



- (b) at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.

*Maximum FDP after delay under operations manual procedures*

4.11 If:

- (a) an FCM's FDP is delayed under subclause 4.6; and
- (b) the FDP commences at a new reporting time that is within 4 hours of the original reporting time;

then, the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:

- (c) the original reporting time; or
- (d) the new reporting time.

4.12 If:

- (a) the FCM's FDP is delayed under subclause 4.6; and
- (b) the FDP commences at a new reporting time that is at least 4 hours after the original reporting time;

then:

- (c) the FDP is taken to have commenced 4 hours after the original reporting time; and
- (d) the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:
  - (i) the original reporting time; or
  - (ii) the time at which the FDP is taken to have commenced in accordance with paragraph (c).

*Cancellations — with or without operations manual procedures for delays*

4.13 If:

- (a) an FCM's FDP is delayed under subclause 4.2 or 4.6; and
- (b) the AOC holder informs the FCM that the flight will not occur (*cancellation*);

then, the FCM must have an off-duty period of at least 10 consecutive hours, commencing from the time he or she is informed of the cancellation, before again being assigned an FDP in accordance with this Appendix.

## **5 Reassignment and extension**

5.1 After an FCM's assigned FDP commences, the AOC holder may reassign to the FCM a modified FDP and number of sectors to be flown, provided that each of the following applies:

- (a) the modified FDP must not be more than 4 hours longer than the assigned FDP;
- (b) subject to subclauses 5.3 and 5.4 — the modified FDP and flight time must not exceed the limits in the holder's operations manual for the new number of sectors;
- (c) the FCM, or each FCM, must consider himself or herself fit for the modified FDP.

- 5.2 If subclause 5.1 applies, the FCM may continue in the modified FDP in accordance with subclause 5.1.
- Note* Clause 11 applies to the reassignment of an FDP which results in the modified FDP being a late night operation.
- 5.3 Despite the FDP limits provided in the operations manual, in unforeseen operational circumstances at the discretion of the pilot in command:
- (a) the FDP limits in the operations manual may be extended by up to 1 hour; and
  - (b) the sectors for the FDP limits may be increased by 1 more than would otherwise be the case for the FDP.
- 5.4 Despite the limits provided in the operations manual, the flight time limit for an FDP may be extended by not more than 30 minutes if:
- (a) it is operationally necessary in order to complete the duty; and
  - (b) the FCM, or each FCM, considers himself or herself fit for the extension.
- Note* Clause 11 does not apply to the extension of an FDP which results in the FDP being a late night operation.
- 5.5 An FDP limit must not be reassigned or extended under this clause if it would cause an FCM to exceed the cumulative flight time limits in clause 9 or the cumulative duty time limits in clause 10.
- 5.6 Despite subclause 5.5, if:
- (a) unforeseen operational circumstances arise after take-off on the final sector of an FDP; and
  - (b) the unforeseen operational circumstances would cause an FCM to exceed:
    - (i) any limit or number permitted under this clause; or
    - (ii) the cumulative flight time limits in clause 9; or
    - (iii) the cumulative duty time limits in clause 10;

then, the flight may continue to the planned destination or alternate at the discretion of the pilot in command.

*Note 1* Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft and, therefore, has a discretion to not permit an extension to occur even if otherwise permissible under this clause.

*Note 2* Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

## **6 Standby**

- 6.1 An AOC holder must not require an FCM to be on continuous standby for a period longer than 16 hours.
- 6.2 The maximum allowable FDP after a call out from standby must be decreased by the number of hours by which the standby exceeds 12 hours.
- 6.3 A standby which is completed without a call out must be followed by an off-duty period of at least 10 consecutive hours.

## **7 Positioning**

An FCM may, on completion of assigned flight duties, and at the request of the AOC holder, position to a suitable location but only if the FCM agrees to do so. However, the time spent in the positioning must be added to the

preceding FDP when determining minimum off-duty periods under clause 8 of this Appendix.

*Note* For clause 7, an FCM may decline to position to a suitable location.

## **8 Off-duty periods**

- 8.1 Subject to subclause 8.2, where an FCM's FDP does not exceed 12 hours, his or her following off-duty period must be at least as follows:
- (a) if the FCM is undertaking the off-duty period away from home base — 10 hours;
  - (b) if the FCM is undertaking the off-duty period at home base — 12 hours.
- 8.2 Where an FCM's FDP (the ***last FDP***) does not exceed 10 hours, his or her following off-duty period (***ODP 2***) may be reduced to not less than 9 hours, provided that:
- (a) the off-duty period undertaken immediately before the last FDP was at least 12 hours, including a local night; and
  - (b) the ODP 2 is undertaken over a local night; and
  - (c) the ODP 2 is not undertaken at home base; and
  - (d) the off-duty period following the FDP after ODP 2 is at least 12 hours, including a local night.
- 8.3 Where an FCM's FDP exceeds 12 hours, his or her following off-duty period must be at least the sum of:
- (a) 12 hours; and
  - (b) 1.5 times the time that the FDP exceeded 12 hours.
- 8.4 If, after an FDP (the ***first FDP***) but before the next FDP (the ***second FDP***), the off-duty period calculated under this clause is more than 14 hours, the off-duty period may be reduced to not less than 14 hours, provided that:
- (a) the reduced off-duty period is undertaken away from home base; and
  - (b) the first FDP was not extended past the FDP limit provided for under the AOC holder's operations manual; and
  - (c) the off-duty period following the second FDP is of at least 36 consecutive hours and includes 2 local nights.
- 8.5 Before beginning an FDP or standby, an FCM must have had at least 36 consecutive hours off-duty, including 2 local nights, in the 168 hours before the projected end time of the assigned FDP or assigned standby.
- 8.6 Before beginning an FDP or standby, an FCM must have had:
- (a) at least 7 days off-duty in the 28 consecutive days before the standby or FDP commences; and
  - (b) at least 24 days off-duty in the 84 consecutive days before the standby or FDP commences.

## **9 Limit on cumulative flight time**

- 9.1 The cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 100 hours.
- 9.2 The cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 000 hours.

## **10 Limit on cumulative duty time**

- 10.1 The cumulative duty accrued by an FCM during any consecutive 168 hour period must not exceed 60 hours.
- 10.2 The cumulative duty accrued by an FCM during any consecutive 336 hour period must not exceed 100 hours.

*Note* 168 hours is the number of hours in a 7 day period, and 336 hours is the number of hours in a 14 day period.

## **11 Limit on late night operations**

- 11.1 If:
  - (a) an FCM is assigned an FDP involving a late night operation (**FDP 1**); and
  - (b) his or her next assigned FDP is another late night operation (**FDP 2**);the FCM must not commence FDP 2 until at least 24 hours have elapsed since the commencement of FDP 1.

- 11.2 If, in any consecutive 168 hour period (the **period**), an FCM is assigned 3 or more FDPs involving late night operations, then for the period, the combined numerical total of all assigned or reassigned:

- (a) FDPs involving late night operations; and
- (b) other FDPs; and
- (c) standby periods;

must not exceed 4.

*Note* Thus, in any consecutive 168 hour period, if an FCM is assigned 3 late night operations, he or she may only also be assigned 1 other FDP (late night operation or otherwise), or 1 standby. If, in the 168 hour period, the FCM is assigned 4 late night operations, he or she must not also be assigned any other FDP or standby.

- 11.3 For this clause, reference to an assigned FDP involving a late night operation includes a reassigned FDP under subclause 5.1 that is a late night operation.
- 11.4 An FDP that would otherwise fall within the definition of a **late night operation** because of an extension under subclause 5.3 or 5.4, is not a late night operation for this clause.

## **12 Maximum durations must not be exceeded**

Unless an extension is permitted under clause 5, in performing duty an FCM must not exceed the following:

- (a) the maximum duration of the FDP specified for the FCM in the AOC holder's operations manual;
- (b) the maximum flight time specified for the FCM in the AOC holder's operations manual.

## APPENDIX 4 – PUBLIC TRANSPORT SERVICES – SINGLE-PILOT OPERATIONS

### 1 Sleep opportunity before an FDP or standby

- 1.1 An FCM must not be assigned or commence an FDP or standby commencing away from home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 10 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.
- 1.2 An FCM must not be assigned or commence an FDP or standby commencing at home base unless he or she has at least 8 consecutive hours' sleep opportunity within the 12 hours immediately before:
  - (a) if the commencement of the FDP has not been delayed — commencing the FDP or standby; or
  - (b) if the commencement of the FDP has been delayed, but by less than 10 hours — the original reporting time for the FDP or standby; or
  - (c) if the commencement of the FDP has been delayed by 10 hours or more — commencing the FDP or standby following the delay.

*Note* See subsection 6 of this Order for the definition of *sleep opportunity*, where it is defined as occurring during an off-duty period.

### 2 FDP and flight time limits

- 2.1 An FCM must not be assigned an FDP longer than the number of hours specified in Table 2.1 in this clause (the ***FDP limit***), as determined by the local time at the start of the FDP.
- 2.2 An FCM must not be assigned flight time during an FDP longer than the number of hours in brackets specified in Table 2.1 (the ***flight time limit***), as determined by the local time at the start of the FDP.
- 2.3 In applying Table 2.1, first, choose the appropriate local time at which the FDP for the FCM is to start. The maximum FDP for the FCM is the number that corresponds to the chosen local time at which the FDP for the FCM is to start. The maximum flight time for the chosen local time is the number in brackets alongside the number for maximum FDP.

**Table 2.1 Maximum FDP and flight time (in hours) according to local time at start of FDP**

<b>Local time at start of FDP</b>	<b>Maximum FDP and flight time hours</b>
0500 – 0659	9(8)
0700 – 0759	10(8)
0800 – 1059	11(9)
1100 – 1359	10(9)
1400 – 2259	9(8)
2300 – 0459	8(7)

### **3 Increase in FDP limits by split duty**

- 3.1 Subject to subclause 3.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable sleeping accommodation, the maximum FDP worked out under clause 2 may be increased by up to 4 hours.
- 3.2 After an FDP mentioned in subclause 3.1, the first 4 hours of the split-duty rest period may be reduced by 50% for the purpose of determining the subsequent off-duty period or cumulative duty time under clause 8 or clause 10 of this Appendix.
- 3.3 Subject to subclause 3.4, where an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable resting accommodation, the FDP limits under subclause 2.1 may be increased by 2 hours.
- 3.4 If a split-duty rest period includes any period between the hours of 2300 to 0529 local time, then:
  - (a) the split-duty rest period must be for a consecutive period of at least 7 hours with access to suitable sleeping accommodation; and
  - (b) the maximum FDP may be increased to 15 hours (if not already permitted) but subclause 3.2 does not apply.
- 3.5 Any remaining portion of an FDP following a split-duty rest period must be no longer than 5 hours.

*Note* These are the maximum FDP and flight time limits under this Appendix unless, for any particular FCM, other provisions have the effect of reducing these limits (for example, subsections 14 and 15 of this Order).

### **4 Delayed reporting time**

#### ***Delays without operations manual procedures***

- 4.1 Subclauses 4.2 to 4.4 apply to an AOC holder if the operations manual does not have procedures for delays.

- 4.2 The AOC holder may:
- (a) only delay an FCM's reporting time (the *original reporting time*) if the FCM is first informed of the delay at least 10 hours before the reporting time; and
  - (b) if paragraph (a) applies — consider the period between the original reporting time and the new reporting time (the *period of the delay*) to be an off-duty period; and
  - (c) if paragraph (b) applies — at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.
- 4.3 If:
- (a) the AOC holder delays the FCM's original reporting time; and
  - (b) does not inform the FCM of the delay at least 10 hours before the original reporting time;
- then, the FCM's FDP is taken to commence at the original reporting time.
- 4.4 If subclause 4.3 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

*Delays under operations manual procedures*

- 4.5 Subclauses 4.6 to 4.12 apply to an AOC holder if the operations manual has procedures for 1 or more delays.
- 4.6 If an AOC holder's operations manual has procedures for delays, the AOC holder may delay an FCM's original reporting time if the AOC holder informs the FCM of the new reporting time as follows:
- (a) if the FCM is at home base:
    - (i) at least 2 hours before the original reporting time; and
    - (ii) at least 2 hours before each new reporting time; or
  - (b) if the FCM is not at home base:
    - (i) at least 1 hour before the original reporting time; and
    - (ii) at least 1 hour before each new reporting time.
- 4.7 If an FCM is informed of a delay in accordance with subclause 4.6, the period between the original reporting time and the final new reporting time is deemed to be standby.
- Note* The period mentioned in subclause 4.7 is deemed to be standby whether or not paragraph (b) of the definition of *standby* is met.
- 4.8 If an FCM is not informed of a delay in accordance with subclause 4.6, the FCM's FDP is taken to commence at whichever of the following is the later:
- (a) the original reporting time; or
  - (b) the last new reporting time following a delay of which the FCM was informed in accordance with subclause 4.6.
- 4.9 If subclause 4.8 applies, the off-duty period requirements of this Appendix apply to the FCM whether or not the flight occurs.

*A single delay of at least 10 hours under operations manual procedures*

- 4.10 Despite subclause 4.7, if the period of any single delay to an FCM's FDP is at least 10 hours, the AOC holder may:
- (a) consider the period of the delay to be an off-duty period; and

- (b) at the end of the off-duty period, assign an FDP to the FCM subject to the applicable limits set out in this Appendix.

*Maximum FDP after delay under operations manual procedures*

4.11 If:

- (a) an FCM's FDP is delayed under subclause 4.6; and
- (b) the FDP commences at a new reporting time that is within 4 hours of the original reporting time;

then, the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:

- (c) the original reporting time; or
- (d) the new reporting time.

4.12 If:

- (a) the FCM's FDP is delayed under subclause 4.6; and
- (b) the FDP commences at a new reporting time that is at least 4 hours after the original reporting time;

then:

- (c) the FDP is taken to have commenced 4 hours after the original reporting time; and
- (d) the maximum FDP must be based on whichever of the following is the more limiting in calculating the FDP:
  - (i) the original reporting time; or
  - (ii) the time at which the FDP is taken to have commenced in accordance with paragraph (c).

*Cancellations — with or without operations manual procedures for delays*

4.13 If:

- (a) an FCM's FDP is delayed under subclause 4.2 or 4.6; and
- (b) the AOC holder informs the FCM that the flight will not occur (*cancellation*);

then, the FCM must have an off-duty period of at least 10 consecutive hours, commencing from the time he or she is informed of the cancellation, before again being assigned an FDP in accordance with this Appendix.

## **5 Reassignment and extension**

5.1 After an FCM's assigned FDP commences, the AOC holder may reassign to the FCM a modified FDP, provided that each of the following applies:

- (a) the modified FDP must not be more than 4 hours longer than the assigned FDP;
- (b) subject to subclauses 5.3 and 5.4 — the modified FDP and flight time must not exceed the applicable limits in the holder's operations manual;
- (c) the FCM must consider himself or herself fit for the modified FDP.

5.2 If subclause 5.1 applies, the FCM may continue in the modified FDP in accordance with subclause 5.1.

*Note* Clause 11 applies to the reassignment of an FDP which results in the modified FDP being a late night operation.



- 5.3 Despite the FDP limits provided in the operations manual, in unforeseen operational circumstances at the discretion of the pilot in command the FDP limits in the operations manual may be extended by up to 1 hour.
- 5.4 Despite the limits provided in the operations manual, the flight time limit for an FDP may be extended by not more than 30 minutes if:
- (a) it is operationally necessary in order to complete the duty; and
  - (b) the FCM considers himself or herself fit for the extension.
- Note* Clause 11 does not apply to the extension of an FDP which results in the FDP being a late night operation.
- 5.5 An FDP limit must not be reassigned or extended under this clause if it would cause an FCM to exceed the cumulative flight time limits in clause 9 or the cumulative duty time limits in clause 10.
- 5.6 Despite subclause 5.5, if:
- (a) unforeseen operational circumstances arise after take-off on the final sector of an FDP; and
  - (b) the unforeseen operational circumstances would cause an FCM to exceed:
    - (i) any limit or number permitted under this clause; or
    - (ii) the cumulative flight time limits in clause 9; or
    - (iii) the cumulative duty time limits in clause 10;

then, the flight may continue to the planned destination or alternate at the discretion of the pilot in command.

*Note 1* Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft and, therefore, has a discretion to not permit an extension to occur even if otherwise permissible under this clause.

*Note 2* Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

## **6 Standby**

- 6.1 An AOC holder must not require an FCM to be on continuous standby for a period longer than 16 hours.
- 6.2 The maximum allowable FDP after a call out from standby must be decreased by the number of hours by which the standby exceeds 12 hours.
- 6.3 A standby which is completed without a call out must be followed by an off-duty period of at least 10 consecutive hours.

## **7 Positioning**

An FCM may, on completion of assigned flight duties, and at the request of the AOC holder, position to a suitable location but only if the FCM agrees to do so. However, the time spent in the positioning must be added to the preceding FDP when determining minimum off-duty periods under clause 8 of this Appendix.

*Note* For clause 7, an FCM may decline to position to a suitable location.

## **8 Off-duty periods**

- 8.1 Subject to subclause 8.2, where an FCM's FDP does not exceed 12 hours, his or her following off-duty period must be at least as follows:
- (a) if the FCM is undertaking the off-duty period away from home base — the sum of:
    - (i) 10 hours; and
    - (ii) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east;
  - (b) if the FCM is undertaking the off-duty period at home base — the sum of:
    - (i) 12 hours; and
    - (ii) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east.
- 8.2 Where an FCM's FDP (the *last FDP*) does not exceed 10 hours, his or her following off-duty period (*ODP 2*) may be reduced to not less than 9 hours, provided that:
- (a) the off-duty period undertaken immediately before the last FDP was at least 12 hours, including a local night; and
  - (b) the ODP 2 is undertaken over a local night; and
  - (c) the ODP 2 is not undertaken at home base; and
  - (d) the off-duty period following the FDP after ODP 2 is at least 12 hours, including a local night.
- 8.3 Where an FCM's FDP exceeds 12 hours, his or her following off-duty period must be at least 12 hours, plus the sum of:
- (a) 1.5 times the time that the FDP exceeded 12 hours; and
  - (b) the amount that the displacement time exceeds 3 hours if travelling west, or 2 hours if travelling east.
- 8.4 Before beginning any standby time or FDP, an FCM must have had at least 36 consecutive hours off-duty, including 2 local nights, in the 168 hours before the projected end time of the assigned FDP or assigned standby.
- 8.5 Before beginning any standby time or FDP, an FCM must have had:
- (a) at least 7 days off-duty in the 28 consecutive days before the standby or FDP commences; and
  - (b) at least 24 days off-duty in the 84 consecutive days before the standby or FDP commences.

## **9 Limit on cumulative flight time**

- 9.1 The cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 100 hours.
- 9.2 The cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 000 hours.

## **10 Limit on cumulative duty time**

- 10.1 The cumulative duty accrued by an FCM during any consecutive 168 hour period must not exceed 60 hours.
- 10.2 The cumulative duty accrued by an FCM during any consecutive 336 hour period must not exceed 100 hours.

*Note* 168 hours is the number of hours in a 7 day period, and 336 hours is the number of hours in a 14 day period.

## **11 Limit on late night operations**

### **11.1 If:**

- (a) an FCM is assigned an FDP involving a late night operation (**FDP 1**); and
  - (b) his or her next assigned FDP is another late night operation (**FDP 2**);
- the FCM must not commence FDP 2 until at least 24 hours have elapsed since the commencement of FDP 1.

### **11.2 If, in any consecutive 168 hour period (the *period*), an FCM is assigned 3 or more FDPs involving late night operations, then for the period, the combined numerical total of all assigned or reassigned:**

- (a) FDPs involving late night operations; and
- (b) other FDPs; and
- (c) standby periods;

must not exceed 4.

*Note* Thus, in any consecutive 168 hour period, if an FCM is assigned 3 late night operations, he or she may only also be assigned 1 other FDP (late night operation or otherwise), or 1 standby. If, in the 168 hour period, the FCM is assigned 4 late night operations, he or she must not also be assigned any other FDP or standby.

### **11.3 For this clause, reference to an assigned FDP involving a late night operation includes a reassigned FDP under subclause 5.1 that is a late night operation.**

### **11.4 An FDP that would otherwise fall within the definition of a *late night operation* because of an extension under subclause 5.3 or 5.4, is not a late night operation for this clause.**

## **12 Maximum durations must not be exceeded**

Unless an extension is permitted under clause 5 in performing duty, an FCM must not exceed the following:

- (a) the maximum duration of the FDP specified for the FCM in the AOC holder's operations manual;
- (b) the maximum flight time specified for the FCM in the AOC holder's operations manual.

## APPENDIX 5 – AERIAL WORK OPERATIONS – OTHER THAN FLYING TRAINING

### 1 FDP limits

- 1.1 An FCM must not be assigned or commence an FDP longer than the number of hours specified in Table 5.1 in this clause (the *FDP limit*), as determined by the local time at the start of the FDP.

**Table 5.1 Maximum FDP (in hours) for an FCM according to local time at the start of the FDP**

Local time at start of FDP	Maximum FDP (hours)
0500 – 0659	11
0700 – 1159	12
1200 – 1459	11
1500 – 0459	10

- 1.2 If, in the 8 hours immediately before commencing an FDP, duties other than conducting a flight in an aircraft were performed (*non-flying duties*), the maximum permissible duration of the FDP must be decreased by the greater of:
- (a) 30 minutes; or
  - (b) the total duration of the non-flying duties performed during the 8 hour period immediately before commencing the FDP.
- 1.3 In any 168 consecutive hours, an FCM must not be assigned, or conduct, more than 4 FDPs which include any time between midnight and 0459 local time.
- 1.4 An FCM must not exceed an FDP limit set out in in the AOC holder's operations manual in accordance with this Order.

*Note* Aerial work operations captured by this Appendix are widely varied. Therefore, operators are reminded to limit flight times in accordance with their operator obligations, and include flight time limits in their operations manual.

### 2 Increase in FDP limits by split duty

- 2.1 If an FDP contains a split-duty rest period of at least 3 consecutive hours at suitable sleeping accommodation, the maximum FDP worked out under clause 1 may be increased by the duration of the split-duty rest period.
- 2.2 If an FDP contains a split-duty rest period of at least 4 consecutive hours at suitable resting accommodation, the FDP limits under clause 1 may be increased by 2 hours.
- 2.3 Any portion of an FDP remaining after a split-duty rest period must be no longer than the sum of 6 hours and any permitted extension under clause 3.

*Note* These are the maximum FDP limits under this Appendix unless, for any particular FCM, other provisions have the effect of reducing these limits (for example, subsections 14 and 15 of this Order).

### **3 Extensions**

- 3.1 At the discretion of the FCM, an FDP may be extended up to a maximum of 4 hours beyond the FDP limit in subclause 1.1, provided the FCM considers himself or herself fit for the extension.

*Note* Due to the nature of aerial work operations, extensions are permitted in any circumstance (not just unforeseen operational circumstances as in the case of public transport services limits) and reports of extensions are not required to be notified to CASA.

- 3.2 Subject to subclause 3.3, any extension over the FDP limit requires the off-duty period required by clause 5 to be increased by 1 hour for every 30 minutes, or part of 30 minutes, that the FDP is extended beyond the FDP limit.
- 3.3 If an off-duty period calculated under subclause 3.2 is greater than 12 hours, the off-duty period may be reduced to not less than 12 hours provided that:
- (a) the next FDP is conducted under this Appendix; and
  - (b) the off-duty period following the next FDP is at least 36 hours, including 2 local nights.

### **4 Standby**

- 4.1 An FCM may be placed on standby.
- 4.2 If an FCM is called out from standby to commence an FDP, (which may include a split-duty rest period), the FDP must be followed by an off-duty period in accordance with clause 5.
- 4.3 If an FCM is called out to commence duties other than flying duties, the FCM may return to standby following that duty period. However, subclause 1.2 applies to a subsequent FDP.

### **5 Off-duty period limits**

- 5.1 Following an FDP, an FCM must have an off-duty period of:
- (a) at least 8 consecutive hours, including the hours between 2300 and 0529 local time; or
  - (b) at least 10 consecutive hours.
- 5.2 An FCM must:
- (a) in any consecutive 336 hour period — have at least 1 off-duty period of at least 36 consecutive hours which includes 2 local nights; or
  - (b) in any consecutive 504 hour period — have at least 1 off-duty period of at least 72 consecutive hours which includes 3 local nights.

*Note* 336 hours is the number of hours in a 14 day period and 504 hours is the number of hours in a 21 day period.

### **6 Limit on cumulative flight time**

- 6.1 The cumulative flight time accrued by an FCM during any consecutive 168 hour period must not exceed 50 hours.
- 6.2 Subject to subclause 6.4, the cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 170 hours.
- 6.3 Subject to subclause 6.4, the cumulative flight time accrued by an FCM during any consecutive 90 day period must not exceed 450 hours.
- 6.4 The cumulative flight time limits in subclauses 6.2 and 6.3 may be reset to zero if the FCM is provided with at least 7 consecutive days off-duty.

- 6.5 Subject to subclause 6.6, the cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 200 hours.
- 6.6 The cumulative flight time limit in subclause 6.5 may be reset to zero if the FCM is provided with at least 28 consecutive days off-duty.

*Note* These cumulative flight time limits are designed to mitigate the effects of cumulative fatigue. AOC holders are reminded, first, of the emotional, cognitive and physical effects of workload on the performance of FCMs in addition to fatigue, and secondly, that these limits are for optimal circumstances and may not be achievable due to hazard identification and other procedures required under subsection 15 of this Order.

## **7 Maximum durations must not be exceeded**

Unless an extension is permitted under clause 3, in performing duty an FCM must not exceed the following:

- (a) the maximum duration of the FDP specified for the FCM in the AOC holder's operations manual;
- (b) the maximum flight time specified for the FCM in the AOC holder's operations manual.

## APPENDIX 6 – AERIAL WORK OPERATIONS – FLYING TRAINING

### 1 Sleep opportunity before an FDP or standby

An FCM must not be assigned or commence an FDP or standby unless he or she has at least 8 consecutive hours' sleep opportunity within the 12 hours immediately before commencing the FDP or standby.

*Note* See subsection 6 of this Order for the definition of *sleep opportunity*, where it is defined as occurring during an off-duty period.

### 2 FDP and flight time limits

- 2.1 An FCM must not be assigned an FDP longer than the number of hours specified in Table 2.1 in this clause (the **FDP limit**), as determined by the local time at the start of the FDP.
- 2.2 An FCM must not be assigned flight time during an FDP longer than the number of hours in brackets specified in Table 2.1 (the **flight time limit**), as determined by the local time at the start of the FDP.
- 2.3 In applying Table 2.1, first, choose the appropriate local time at which the FDP for the FCM is to start. The maximum FDP for the FCM is the number that corresponds to the chosen local time at which the FDP for the FCM is to start. The maximum flight time for the chosen local time is the number in brackets alongside the number for maximum FDP.

**Table 2.1 Maximum FDP and flight time (in hours) according to local time at start of FDP**

Local time at start of FDP	Maximum FDP and flight time hours
0500 – 0659	9(7)
0700 – 0759	10(7)
0800 – 1059	11(7)
1100 – 1359	10(7)
1400 – 2259	9(7)
2300 – 0459	8(7)

### 3 Increase in FDP limits by split duty

- 3.1 Subject to subclause 3.4, if an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable sleeping accommodation, the maximum FDP worked out under clause 2 may be increased by up to 4 hours.
- 3.2 After an FDP mentioned in subclause 3.1, the first 4 hours of the split-duty rest period may be reduced by 50% for the purpose of determining the subsequent off-duty period or cumulative duty time under clause 7 or clause 9 of this Appendix.
- 3.3 Subject to subclause 3.4, if an FDP contains a split-duty rest period of at least 4 consecutive hours with access to suitable resting accommodation, the FDP limits under subclause 2.1 may be increased by 2 hours.

- 3.4 If a split-duty rest period includes any period between the hours of 2300 to 0529 local time, then:
- (a) the split-duty rest period must be for a consecutive period of at least 7 hours with access to suitable sleeping accommodation; and
  - (b) the maximum FDP may be increased to 15 hours (if not already permitted) but subclause 3.2 does not apply.
- 3.5 Unless the FDP is extended under clause 4, any portion of an FDP remaining after a split-duty rest period must be no longer than 5 hours.

*Note* These are the maximum FDP and flight time limits under this Appendix unless, for any particular FCM, other provisions have the effect of reducing these limits (for example, subsections 14 and 15 of this Order).

#### **4 Reassignment and extension**

- 4.1 Subject to subclause 4.3, after an FCM's assigned FDP commences, the AOC holder may reassign to the FCM a modified FDP, provided that each of the following applies:
- (a) the modified FDP must not be more than 4 hours longer than the assigned FDP;
  - (b) the FCM must consider himself or herself fit for the modified FDP.
- 4.2 If subclause 4.1 applies, the FCM may continue in the modified FDP in accordance with subclause 4.1.

*Note* Clause 10 applies to the reassignment of an FDP which results in the modified FDP being a late night operation.

- 4.3 Despite the FDP limits provided in the operations manual, in unforeseen operational circumstances at the discretion of the pilot in command, the FDP limits in the operations manual may be extended by up to 1 hour.

- 4.4 Despite the limits provided in the operations manual, the flight time limit for an FDP may be extended by not more than 30 minutes if:

- (a) it is operationally necessary in order to complete the duty; and
- (b) the FCM considers himself or herself fit for the extension.

*Note* Clause 10 does not apply to the extension of an FDP which results in the FDP being a late night operation.

- 4.5 An FDP limit must not be reassigned or extended under this clause if it would cause an FCM to exceed the cumulative flight time limits in clause 8 or the cumulative duty time limits in clause 9.

- 4.6 Despite subclause 4.5, if:

- (a) unforeseen operational circumstances arise after take-off on the final sector of an FDP; and
- (b) the unforeseen operational circumstances would cause an FCM to exceed:
  - (i) any limit or number permitted under this clause; or
  - (ii) the cumulative flight time limits in clause 8; or
  - (iii) the cumulative duty time limits in clause 9;

then, the flight may continue to the planned destination or alternate at the discretion of the pilot in command.

*Note 1* Under regulation 224 of CAR 1988, the pilot in command of an aircraft is responsible for the conduct and safety of members of the crew on the aircraft and, therefore, has a discretion to not permit an extension to occur even if otherwise permissible under this clause.



*Note 2* Guidance on the assessment of individual cognitive and physical fitness is contained in CAAP 48-1.

## **5 Standby**

- 5.1 An AOC holder must not require an FCM to be on continuous standby for a period longer than 16 hours.
- 5.2 The maximum allowable FDP after a call out from standby must be decreased by the number of hours by which the standby exceeds 12 hours.
- 5.3 A standby which is completed without a call out must be followed by an off-duty period of at least 10 consecutive hours.

## **6 Positioning**

An FCM may, on completion of assigned flight duties, and at the request of the AOC holder, position to a suitable location but only if the FCM agrees to do so. However, the time spent in the positioning must be added to the preceding FDP when determining minimum off-duty periods under clause 7 of this Appendix.

*Note* For clause 6, an FCM may decline to position to a suitable location.

## **7 Off-duty periods**

- 7.1 After an FDP, an FCM's following off-duty period must be at least the sum of:
  - (a) 12 hours; and
  - (b) 1.5 times the time (if any) that the FDP exceeded 12 hours.
- 7.2 Before beginning any standby time or FDP, an FCM must have had at least 36 consecutive hours off-duty, including 2 local nights, in the 168 hours before the projected end time of the assigned FDP or assigned standby.
- 7.3 Before beginning any standby time or FDP, an FCM must have had:
  - (a) at least 7 days off-duty in the 28 consecutive days before the standby or FDP commences; and
  - (b) at least 24 days off-duty in the 84 consecutive days before the standby or FDP commences.

## **8 Limit on cumulative flight time**

- 8.1 The cumulative flight time accrued by an FCM during any consecutive 28 day period must not exceed 100 hours.
- 8.2 The cumulative flight time accrued by an FCM during any consecutive 365 day period must not exceed 1 000 hours.

## **9 Limit on cumulative duty time**

- 9.1 The cumulative duty accrued by an FCM during any consecutive 168 hour period must not exceed 60 hours.
- 9.2 The cumulative duty accrued by an FCM during any consecutive 336 hour period must not exceed 100 hours.

*Note* 168 hours is the number of hours in a 7 day period, and 336 hours is the number of hours in a 14 day period.

## **10 Limit on late night operations**

### **10.1 If:**

- (a) an FCM is assigned an FDP involving a late night operation (**FDP 1**); and
  - (b) his or her next assigned FDP is another late night operation (**FDP 2**);
- the FCM must not commence FDP 2 until at least 24 hours have elapsed since the commencement of FDP 1.

### **10.2 If, in any consecutive 168 hour period (the *period*), an FCM is assigned 3 or more FDPs involving late night operations, then for the period, the combined numerical total of all assigned or reassigned:**

- (a) FDPs involving late night operations; and
- (b) other FDPs; and
- (c) standby periods;

must not exceed 4.

*Note* Thus, in any consecutive 168 hour period, if an FCM is assigned 3 late night operations, he or she may only also be assigned 1 other FDP (late night operation or otherwise), or 1 standby. If, in the 168 hour period, the FCM is assigned 4 late night operations, he or she must not also be assigned any other FDP or standby.

### **10.3 For this clause, reference to an assigned FDP involving a late night operation includes a reassigned FDP under subclause 4.1 that is a late night operation.**

### **10.4 An FDP that would otherwise fall within the definition of a *late night operation* because of an extension under subclause 4.3 or 4.4, is not a late night operation for this clause.**

## **11 Maximum durations must not be exceeded**

Unless an extension is permitted under clause 4, in performing duty an FCM must not exceed the following:

- (a) the maximum duration of the FDP specified for the FCM in the AOC holder's operations manual;
- (b) the maximum flight time specified for the FCM in the AOC holder's operations manual.

## APPENDIX 7 — FATIGUE RISK MANAGEMENT SYSTEM (FRMS)

### 1 General

1.1 An AOC holder may apply to CASA for:

- (a) a trial FRMS implementation approval, for all or part of its operations; or
- (b) a full FRMS implementation approval, for all or part of its operations.

*Note* An AOC holder is not eligible for a full implementation approval until the FRMS has been in effective operation for at least 12 months from the date of a trial implementation approval. See clause 10.

1.2 For a trial or full FRMS implementation approval, an FRMS must include CASA approval of each of the following elements of the FRMS:

- (a) the policy and objectives, and related documentation, in accordance with clause 2;
- (b) the practical operating procedures in accordance with clause 3;
- (c) the hazard identification, risk assessment and mitigation procedures in accordance with clause 4;
- (d) the safety assurance procedures in accordance with clause 5;
- (e) the safety promotion procedures in accordance with clause 6;
- (f) the change management procedures in accordance with clause 7.

*Note 1* Some changes may require CASA approval. See clause 7.

*Note 2* Guidance on the development and implementation of FRMS is contained in the *ICAO FRMS Implementation Guide for Operators*.

1.3 If the AOC holder has an SMS, a trial or full FRMS implementation approval will not be given unless CASA is satisfied that the FRMS is integrated with the SMS.

1.4 Before CASA issues a trial FRMS implementation approval, CASA must be satisfied that the AOC holder's FRMS:

- (a) comprises all of the elements mentioned in subclause 1.2; and
- (b) is a safe, integrated, data-driven, system which appears to be reasonably capable of continuously and effectively monitoring and managing fatigue-related safety risks using scientific principles and knowledge, and operational experience; and
- (c) will enable the AOC holder to safely assess the extent to which FCMs and other relevant personnel perform at levels of alertness sufficient to ensure the safety of operations.

1.5 Before CASA issues a full FRMS implementation approval, CASA must be satisfied that the AOC holder's FRMS:

- (a) comprises all of the elements mentioned in subclause 1.2; and
- (b) is a safe, integrated, data-driven, system which will continuously and effectively monitor and manage fatigue-related safety risks using scientific principles and knowledge, and operational experience; and
- (c) will enable the AOC holder to ensure that FCMs and other relevant personnel perform at levels of alertness sufficient to ensure the safety of operations.

## **2 FRMS policy and documentation**

- 2.1 The AOC holder must have an FRMS policy:
  - (a) referring to all elements of the FRMS mentioned in subclause 1.2; and
  - (b) if the AOC holder has an SMS — which integrates the FRMS with the SMS.
- 2.2 The policy must require that all operations to which the FRMS applies be clearly defined in the operations manual.
- 2.3 The policy must:
  - (a) make it clear that while primary responsibility for the FRMS lies with the AOC holder, its effective implementation requires shared responsibility by management, FCMs, and other relevant personnel; and
  - (b) clearly indicate the safety objectives of the FRMS; and
  - (c) be approved in writing by the Chief Executive Officer; and
  - (d) be accessible to all relevant areas and levels of the organisation in a way that indicates the AOC holder's specific endorsement of the policy; and
  - (e) declare management commitment to:
    - (i) effective safety reporting; and
    - (ii) provision of adequate resources for the FRMS; and
    - (iii) continuous improvement of the FRMS; and
  - (f) require that clear lines of accountability are identified for management, FCMs, and all other relevant personnel; and
  - (g) require periodic reviews to ensure the policy remains relevant, appropriate and adhered to.
- 2.4 The policy must:
  - (a) be in a written statement; and
  - (b) require that each other element of the FRMS mentioned in subclause 1.2 be described in a written statement.
- 2.5 Each written statement of an FRMS element and its procedures must make it clear that the statement is a description of systematised practices in continuous use and implementation for all operations to which the FRMS applies.
- 2.6 In addition to the requirements under subclauses 2.4 and 2.5, and the relevant limits and procedures contained in the operations manual in accordance with this Order, the FRMS must also be supported by the following documentation, namely, up-to-date identification, description and records of the following:
  - (a) the personnel accountabilities, responsibilities and authorities for effective implementation of the FRMS, including the FRMS Manager;
  - (b) the mechanisms for ongoing involvement in fatigue risk management of management, FCMs, and all other relevant personnel;
  - (c) the FRMS training programs, training requirements and records of attendance at training;
  - (d) the FRMS outputs, including findings from collected data, and recommendations and actions taken.

### **3 FRMS practical operating procedures**

- 3.1 The FRMS practical operating procedures must, as a minimum:
- (a) incorporate scientific principles and knowledge; and
  - (b) identify, on a continuous basis, fatigue-related safety hazards and the risks that result from them; and
  - (c) ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented properly and expeditiously; and
  - (d) provide for continuous recording and monitoring of, and regular assessment of:
    - (i) fatigue-related safety hazards; and
    - (ii) relevant remedial actions; and
    - (iii) the extent to which mitigation of fatigue-related risks is achieved by remedial actions; and
  - (e) provide for continuous improvement in the effectiveness of the FRMS.
- 3.2 The FRMS practical operating procedures must set out:
- (a) maximum values for each FCM for the following:
    - (i) flight times;
    - (ii) flight duty periods;
    - (iii) duty periods; and
  - (b) minimum values for each FCM off-duty periods.

*Note* The terms *flight time*, *flight duty period*, *duty period* and *off-duty period* are defined in this Order.

- 3.3 Subject to subclause 3.4, where an AOC holder acquires data from an FRMS which indicates that the maximum and minimum values required under paragraphs 3.2 (a) and 3.2 (b) are too high or too low, respectively, the AOC holder must amend the FRMS to ensure that these values are acceptable.
- 3.4 For subclause 3.3, an amendment may only be made in accordance with clause 7.
- 3.5 For paragraph 215 (3) (a) of CAR 1998, an AOC holder's FRMS must form part of the holder's operations manual.

*Note* As part of the operations manual, the FRMS may be the subject of directions from CASA under subregulation 215 (3) of CAR 1988.

### **4 FRMS hazard identification, risk assessment and mitigation procedures**

#### **FRMS hazard identification procedures**

- 4.1 FRMS hazard identification procedures must be based on the following processes for fatigue-related hazard identification:
- (a) the predictive process;
  - (b) the proactive process;
  - (c) the reactive process.
- 4.2 The predictive process must be capable of identifying fatigue-related hazards by examining FCM scheduling and taking into account the following:
- (a) factors known to affect sleep;

- (b) factors known to affect fatigue;
  - (c) the effects of the factors mentioned in paragraphs (a) and (b) on FCM performance.
- 4.3 For subclause 4.2, methods of examination may include, but are not limited to, the following:
  - (a) AOC holder, or industry, operational experience and data collected on similar types of operations;
  - (b) evidence-based scheduling practices;
  - (c) bio-mathematical models.
- 4.4 The proactive process must be capable of identifying fatigue-related hazards within current flight operations.
- 4.5 For subclause 4.4, methods of identifying may include, but are not limited to the following:
  - (a) self-reporting of fatigue risks;
  - (b) fatigue surveys of FCMs;
  - (c) relevant FCMs performance data;
  - (d) available safety databases and scientific studies;
  - (e) analysis of planned versus actual time worked.
- 4.6 The reactive process must be capable of identifying the contribution of fatigue-related hazards to actual events that could have affected, or did affect, safety, with a view to determining how the effects of fatigue on each event could have been minimised.
- 4.7 For subclause 4.6, actual events may include, but are not limited to, those that are the subject of, or are mentioned in, 1 or more of the following:
  - (a) fatigue reports;
  - (b) confidential reports;
  - (c) audit reports;
  - (d) aircraft incidents;
  - (e) flight data analysis events.

#### **FRMS risk assessment procedures**

- 4.8 FRMS risk assessment procedures must be capable of determining the following:
  - (a) the probability of events occurring or circumstances arising that create a fatigue-related hazard;
  - (b) the potential severity of fatigue-related hazards;
  - (c) when the safety risks associated with paragraph (a) or (b) require mitigation.
- 4.9 For subclause 4.8, the FRMS risk assessment procedures must ensure that identified fatigue-related hazards are examined in relation to the following:
  - (a) the relevant operational context and procedures in which the identified fatigue-related hazard arose;
  - (b) the probability of the fatigue-related hazard arising in those circumstances;

- (c) the possible consequences of the fatigue-related hazard in those circumstances;
- (d) the effectiveness of existing safety procedures and controls to prevent, or, if prevention is not possible, to mitigate:
  - (i) the risk of the fatigue-related hazard arising; and
  - (ii) the possible consequences of the fatigue-related hazard.

#### **FRMS risk mitigation procedures**

4.10 FRMS risk mitigation procedures for each fatigue-related hazards must be capable of:

- (a) selecting appropriate mitigation strategies for the hazard; and
- (b) implementing the selected mitigation strategies; and
- (c) monitoring the implementation and effectiveness of the strategies.

### **5 FRMS safety assurance procedures**

5.1 FRMS safety assurance procedures must use the following methods to check on and validate the effectiveness of the fatigue-related risk controls used by the AOC holder:

- (a) continuous monitoring of the performance of the FRMS;
- (b) assessment of data originating from use of the FRMS and other relevant and reliable sources, including relevant data from sources mentioned in subclause 5.2;
- (c) analysis of trends evident in the FRMS data mentioned in paragraph (b).

5.2 For paragraph 5.1 (b), the sources of data may include, but are not limited to:

- (a) hazard reporting and investigations; and
- (b) audits and surveys; and
- (c) reviews and fatigue studies.

5.3 FRMS safety assurance procedures must include a formal process for the management of changes to the FRMS arising from the following:

- (a) identification of changes in the operational environment that may affect FRMS;
- (b) identification of changes within the AOC holder's organisation that may affect FRMS.

5.4 The FRMS safety assurance procedures must include a formal process to assess:

- (a) what impact a change mentioned in paragraph 5.3 (a) or 5.3 (b) may have on the effective performance of the FRMS; and
- (b) for such a change — what amendment, change or modification may be needed to the FRMS to ensure its continued effective performance.

5.5 FRMS safety assurance procedures must provide for the continuous improvement of the FRMS, by means including the following:

- (a) the elimination or modification of fatigue-related risk controls that:
  - (i) have had unintended negative consequences; or
  - (ii) are no longer required because of changes in the AOC holder's operational or organisational environment;

- (b) regular and frequent evaluation of facilities, equipment, documentation and procedures to determine their implications for fatigue-related risk management and control;
- (c) monitoring and identification of emerging fatigue-related risks to allow timely introduction of new procedures and procedures to prevent or mitigate such risks.

## **6 FRMS safety promotion procedures**

- 6.1 FRMS safety promotion procedures for fatigue-related hazards must include training and communication programs capable of supporting and continuously improving all elements of the FRMS in the delivery of optimum safety levels.
- 6.2 For subclause 6.1, FRMS safety promotion procedures must include the following:
  - (a) regular training programs for management, FCMs, and all other relevant personnel to ensure competency levels commensurate with the role and responsibility of the person under the FRMS;
  - (b) an effective FRMS communication plan that:
    - (i) explains all elements of the FRMS to management, FCMs, and all other relevant personnel; and
    - (ii) describes the communication channels which they must use to gather, disseminate and apply FRMS-related information.

## **7 FRMS change management procedures**

- 7.1 The FRMS change management procedures must:
  - (a) meet the requirements of this clause; and
  - (b) clearly indicate how the AOC holder will amend, change or modify any element of the FRMS consistently with the requirements of this clause.
- 7.2 The change management procedures set out in this clause apply to:
  - (a) an AOC holder with a trial FRMS implementation approval; and
  - (b) an AOC holder with a full FRMS implementation approval.
- 7.3 After issuing an FRMS implementation approval, CASA may, in writing, direct an AOC holder to amend, change or modify the FRMS (including practices and documents), and the AOC holder must comply within the time specified by CASA in the direction.
 

*Note 1* A failure to comply may result in revocation of the FRMS implementation approval.

*Note 2* CASA's power to direct changes to an FRMS is an emergency power for safety purposes only. It does not relieve any approval holder of their own obligation to improve the performance of their FRMS where this is safe and practicable under subclause 7.4.
- 7.4 Subject to subclause 7.5, the AOC holder must obtain the written permission of CASA before the holder amends, changes or modifies, in practice or in writing, any element of the FRMS mentioned in subclause 1.2 as approved by CASA.
- 7.5 Subclause 7.4 does not apply to the following:
  - (a) any decrease in the values required under paragraph 3.2 (a);
  - (b) any increase in the values required under paragraph 3.2 (b);



- (c) any other change to the written statement of, or the practices associated with, any element of the FRMS (other than the FRMS change management process) which:
    - (i) is intended to deliver higher safety outcomes (including through clarification in the way any element of the FRMS is expressed); and
    - (ii) has been assessed and approved, in accordance with the procedures mentioned in paragraph 7.1 (b), as likely to deliver quantifiably higher safety outcomes; and
    - (iii) would be considered by a reasonable AOC holder, committed to excellence in the management and control of fatigue-related risks, as likely to result in higher safety outcomes when compared to the element as approved by CASA;
  - (d) any change in the names of individuals with roles and responsibilities under the FRMS;
  - (e) the correction of minor typographical errors.
- 7.6 To avoid doubt, the AOC holder must not amend, change or modify any of the following:
- (a) any requirement that an FRMS must meet to comply with this Appendix;
  - (b) the FRMS change management process approved by CASA;
  - (c) anything in an element of the FRMS as approved by CASA which a reasonable AOC holder, committed to excellence in the management and control of fatigue-related risks, would regard as likely to result, at any time, in a lowering or diminishing of safety outcomes when compared to the element as approved by CASA.
- 7.7 A change to any element of the FRMS as approved by CASA and mentioned in paragraph 7.5 (a), (b) or (c) must be:
- (a) recommended in writing by the FRMS Manager; and
  - (b) endorsed in writing by the Chief Executive Officer; and
  - (c) notified in writing to CASA within 7 days of the endorsement mentioned in paragraph (b).
- 7.8 A change to any element of the FRMS as approved by CASA and mentioned in paragraph 7.5 (d) or (e) must be:
- (a) recommended in writing by the FRMS Manager; and
  - (b) notified in writing to CASA within 7 days of the recommendation mentioned in paragraph (a).

## **8 Trial FRMS implementation approval**

- 8.1 CASA may, on written application, issue an AOC holder with a trial FRMS implementation approval for up to 24 months, if CASA is satisfied that each element of the AOC holder's FRMS:
- (a) complies with and meets the requirements, attributes and characteristics of an FRMS under this Appendix; and
  - (b) is capable of delivering:
    - (i) identified safety outcomes; and
    - (ii) fatigue-risk data and reports; and
    - (iii) continuous improvement in the delivery of safety outcomes.

- 8.2 If an approval was issued under subclause 8.1, CASA may, by issuing a new trial FRMS implementation approval, extend the duration of the approval:
- (a) on the written application of the AOC holder; or
  - (b) on CASA's own initiative if CASA considers that aviation safety requires a longer trial FRMS implementation approval period before a full FRMS implementation approval.

*Note* More than 1 extension is possible if CASA considers it appropriate and trial FRMS implementation approval status could, therefore, be required to last longer than 24 months.

## **9 Full FRMS implementation approval**

- 9.1 CASA may, on written application, issue an AOC holder with a full FRMS implementation approval, if the AOC holder:
- (a) has held a trial FRMS implementation approval for at least 12 months; and
  - (b) satisfies CASA, through relevant data and reports, that the FRMS:
    - (i) is demonstrably delivering the safety outcomes expected when the trial FRMS implementation approval was given; and
    - (ii) is capable of delivering continuous improvement in the delivery of safety outcomes.
- 9.2 If, for this clause, CASA decides not to issue the AOC holder with a full FRMS implementation approval, the holder may apply again to CASA for a trial FRMS implementation approval and clauses 8 and 9 will apply according to their terms.

## **10 Expiry, suspension, revocation, surrender of FRMS implementation approval**

- 10.1 An FRMS implementation approval stops having effect if:
- (a) it expires, or it is suspended or revoked in writing by CASA; or
  - (b) the AOC holder tells CASA in writing that the holder wants to surrender the approval.
- 10.2 If the approval is revoked or surrendered, the AOC holder must return the approval instrument to CASA within 14 days.
- 10.3 CASA may revoke or suspend an approval if:
- (a) the AOC holder does not comply with the requirements of this Order for implementation or use of an FRMS; or
  - (b) CASA considers that continued implementation or use of the FRMS would adversely affect aviation safety; or
  - (c) the AOC holder refuses CASA reasonable access to any information or records produced under or for the FRMS which CASA requests in writing for the purpose of assessing the effectiveness and safety of the FRMS; or
  - (d) for a revocation only — CASA wishes to reissue the approval in a varied form.
- 10.4 To avoid doubt, in this clause, reference to an FRMS implementation approval means a trial or full FRMS implementation approval, and includes the approval as varied by CASA.