



EUROPEAN COMMISSION

Brussels, XXX

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COMMISSION REGULATION (EU) No .../..

of [...]

amending Regulation (EU) No .../... laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC ⁽¹⁾, and in particular Article 8(5) thereof,

Whereas:

- (1) Regulation (EU) No .../... lays down technical requirements and administrative procedures related to air operations.
- (2) In accordance with Article 22(2) of Regulation (EC) No 216/2008, implementing rules related to flight and duty times and rest requirements shall initially include all substantive provisions of Subpart Q of Annex III to Regulation (EEC) No 3922/91, taking into account the latest scientific and technical evidence.
- (3) Regulation (EU) No .../... should therefore be amended to include flight and duty time limitations and rest requirements.
- (4) Regulation (EU) No .../... takes into account the limits and minimum standards already established in Directive 2000/79/EC (5). The limits set out in that Directive should always be respected for mobile workers in civil aviation. The provisions Regulation (EU) No .../... and other provisions approved pursuant to this Regulation should in no circumstances be broader and thereby provide those workers with less protection. The provisions of this Regulation are also without prejudice to national more protective social legislation.
- (5) The European Aviation Safety Agency prepared draft implementing rules and submitted them as an opinion to the Commission in accordance with Article 19(1) of Regulation (EC) No 216/2008.
- (6) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 65 of Regulation (EC) No 216/2008.

HAS ADOPTED THIS REGULATION:

Article 1

Regulation (EU) No .../... is amended as follows:

1. In article 2 the following definition is inserted:

⁽¹⁾ OJ L 79, 13.3.2008, p. 1.

““Air taxi operation” means, for the purpose of flight time and duty time limitations, non-scheduled on demand commercial air transport operations with an aeroplane with a maximum operational passenger seating configuration (MOPSC) of 19 or less.’

2. Article 8 paragraph 1.(a) is replaced by the following:

‘Article 8

Flight time limitations

Flight and duty time limitations shall be subject to the following:

Operators conducting commercial air transport operations with aeroplanes shall comply with Subpart FTL of Annex III. The following CAT operations shall not be subject to Subpart FTL of Annex III:

air taxi operations by aeroplane;

emergency medical service operations by aeroplane; and

single pilot aeroplane operations.

Until the related implementing rules are adopted for such operations, Article 8(4) and Subpart Q of Annex III to Regulation (EEC) No 3922/91 and related national exemptions based on safety risk assessments carried out by the competent authorities shall apply.’

3. In Annex II, the following new points shall be added:

‘ARO.OPS.230 Determination of disruptive schedules

For the purpose of FTL, the competent authority shall determine, according to the definitions of ‘early type’ and ‘late type’ in ORO.FTL.105, which of these two types of disruptive schedules shall be applicable to all commercial air transport operators under its oversight.’

ARO.OPS.235 Approval of individual flight time specification schemes

The competent authority shall approve flight time specification schemes proposed by commercial air transport operators if compliance with Regulation (EC) No 216/2008 and Subpart FTL of Annex III to this Regulation has been demonstrated by the operator.

- (a) Whenever a flight time specification scheme proposed by an operator deviates from the applicable Certification Specifications issued by the Agency, the competent authority shall apply the procedure described in Article 22(2) of Regulation (EC) No 216/2008.
- (b) Whenever a flight time specification scheme proposed by an operator derogates from applicable Implementing Rules, the competent authority shall apply the procedure described in Article 14(6) of Regulation (EC) No 216/2008.
- (c) Approved deviations or derogations shall be subject to independent scientific and medical evaluation after the application of the deviation or derogation.

4. In Annex III, a new Subpart FTL is included in accordance with the Annex to this Regulation.

Article 2

3 years after entry into force the Agency shall conduct a review of the effectiveness of the provisions concerning flight and duty time limitations and rest requirements contained in Annex II and III of Regulation (EU) .../... This review shall be based on operational data gathered on long term basis after the entry into force and shall focus at least on the following:

1. the impact of duties of more than 13 hours at the more favourable time of the day;
2. the impact of duties of more than 10 hours at less favourable time of the day;
3. the impact of duties of more than 11 hours for crew members in an unknown state of acclimatisation;
4. the possible impact of a high level of sectors (>6) on crew alertness; and
5. the impact of disruptive schedules on cumulative limits.

Article 3

1. This Regulation shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Union*.
2. It shall apply from [1 year after its entry into force].
3. By way of derogation from the second subparagraph of paragraph 1, Member States may decide to continue applying Article 8(4) and OPS 1.1115 of Subpart Q of Annex III to Regulation (EEC) No 3922/91 and related national exemptions based on safety risk assessments carried out by the competent authorities instead of ORO.FTL.210 (e) until [2 years after the entry into force of this Regulation].
4. When a Member State makes use of the provisions of paragraph 2, it shall notify the Commission and the Agency. This notification shall describe the reasons and the duration for such derogation as well as the programme for implementation containing actions envisaged and related timing.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission

Member of the Commission

ANNEX

PART-ORO (ORGANISATION REQUIREMENTS)

Subpart — Flight and duty time limitations and rest requirements

Section 1

General

ORO.FTL.100 Scope

This Subpart establishes the requirements to be met by an operator with regard to flight and duty time limitations and rest requirements for crew members.

ORO.FTL.105 Definitions

For the purpose of this Subpart, the following definitions shall apply:

‘Acclimatised’: means that a crew member is considered to be acclimatised to a 2-hour wide time zone surrounding the local time of his/her point of departure. When the local time of the place where a duty commences differs by more than 2 hours from that at the place where a duty ends, the crew member is considered to be acclimatised in accordance with the values in the table below for the calculation of the maximum daily FDP.

Time difference (h) between reference time and local time where the crew member starts the subsequent duty	Time elapsed since reporting at reference time				
	<48	48–71:59	72–95:59	96–119:59	≥120
< 4	B	D	D	D	D
≤6	B	X	D	D	D
≤9	B	X	X	D	D
≤12	B	X	X	X	D

‘B’ means acclimatised to the local time of the departure time zone,

‘D’ means acclimatised to the local time where the crew member starts his/her subsequent duty, and

‘X’ means that a crew member is in an unknown state of acclimatisation.

‘Accommodation’ means, for the purpose of standby and split duty, a quiet and comfortable place not open to the public with the ability to control light and temperature, equipped with adequate furniture that provides a crew member with a possibility to sleep, with enough capacity to accommodate all crew members present at the same time and with access to food and drink.

‘Airport duty’ means a pre-notified and defined period of time during which a crew member is required by the operator to be at the airport immediately available to receive an assignment for a flight, positioning or other duty.

‘Augmented flight crew’ means a flight crew which comprises more than the minimum number required to operate the aircraft, allowing each flight crew member to leave his/her assigned post and be replaced by another appropriately qualified flight crew member for the purpose of in-flight rest.

‘Break’ means a period of time within an FDP, shorter than a rest period, counting as duty and during which a crew member is free of all tasks.

‘Delayed reporting’ means the postponement of a scheduled FDP by the operator before a crew member has left his/her place of rest.

‘Disruptive schedule’ means a crew member’s roster comprising an FDP or a combination of FDPs starting, finishing during or encroaching any portion of the day or of the night where a crew member is acclimatised which disrupts the sleep opportunity during the optimal sleep time window. A schedule may be disruptive due to early starts, late finishes and night duties.

(a) ‘Early type’ of disruptive schedule means:

(1) for ‘early start’ a duty period starting in the period between 05:00 and 05:59 in the time zone to which a crew member is acclimatised; and

(2) for ‘late finish’ a duty period finishing in the period between 23:00 and 01:59 in the time zone to which a crew member is acclimatised.

(b) ‘Late type’ of disruptive schedule means:

(1) for ‘early start’ a duty period starting in the period between 05:00 and 06:59 in the time zone to which a crew member is acclimatised; and

(2) for ‘late finish’ a duty period finishing in the period between 00:00 and 01:59 in the time zone to which a crew member is acclimatised.

(c) ‘Night duty’ means a duty period encroaching any portion of the period between 02:00 and 04:59 in the time zone to which the crew is acclimatised.

‘Duty’ means any task that a crew member performs for the operator, including flight duty, administrative work, giving or receiving training and checking, positioning, and some elements of standby.

‘Duty period’ means a period which starts when a crew member is required by an operator to report for or to commence a duty and ends when that person is free of all duties.

‘Eastward-Westward and Westward-Eastward transition’ means the transition at home base between a rotation crossing 6 or more time zones in one direction and a rotation crossing 4 or more time zones in the opposite direction.

‘Flight duty period (FDP)’ means a period that commences when a crew member is required to report for duty, which may include a flight or a series of flights, and finishes when the aircraft finally comes to rest and the engines are shut down, at the end of the last flight on which he/she acts as an operating crew member.

‘Flight time’ means, for aeroplanes and touring motor gliders, the time between an aircraft first moving from its parking place for the purpose of taking off until it comes to rest on the designated parking position and all engines or propellers are shut down.

‘Home base’ means the location, assigned by the operator to the crew member, from where the crew member normally starts and ends a duty period or a series of duty periods and where, under normal circumstances, the operator is not responsible for the accommodation of the crew member concerned.

‘Local day’ means a 24-hour period commencing at 00:00 local time.

‘Local night’ means a period of 8 hours falling between 22:00 and 08:00 local time.

‘Operating crew member’ means a crew member carrying out his/her duties in an aircraft during a flight.

‘Positioning’ means the transferring of a non-operating crew member from one place to another, at the behest of the operator, excluding the time from home to the designated reporting place at home base and vice versa, as well as the time for local transfer from a place of rest to the commencement of duty and vice versa.

‘Reference time’ means the local time at the reporting point in a time zone band 2 hours wide around the local time where a crew member is acclimatised.

‘Rest facility’ means a bunk or seat with leg and foot support that provides a crew member with a sleep opportunity on board an aircraft.

‘Reserve’ means a period of time during which a crew is required by the operator to be available to receive an assignment for a flight, positioning or other duty with at least a 10 hour notification before the start of the assigned duty.

‘Rest period’ means a continuous, uninterrupted and defined period of time, subsequent to and/or prior to duty, during which a crew member is free of all duties and reserve.

‘Rotation’ is a duty or a series of duties, including at least one flight duty, and rest periods out of home base, starting at home base and ending when returning to home base for a rest period where the operator is no longer responsible for the accommodation of the crew member.

‘Single day free of duty’ means, for the purpose of complying with the Council Directive 2000/79/EC of 27 November 2000, a time free of all duties consisting of a single day and two local nights and which may include a rest period as part of the day off.

‘Sector’ means the time between an aircraft first moving for the purpose of taking off until it comes to rest after landing on the designated parking position.

‘Standby’ means a pre-notified and defined period of time during which a crew member is required by the operator to be available to receive an assignment for a flight, positioning or other duty without an intervening rest period, as follows:

- (a) airport standby means a standby performed at the airport, which may lead to an assignment of duty;
- (b) other standby means a standby either at home or in a suitable accommodation, which may lead to an assignment of duty.

‘Suitable accommodation’ means, for the purpose of standby, split duty and minimum rest, a separate room, with appropriate facilities, for each crew member located in a quiet

environment, equipped with a bed, sufficient ventilation, a device for regulating temperature and light intensity, and access to food and drink.

‘Ultra long range operations (ULR)’ means long range flights having a planned flight duration greater than 16 hours or a flight duty period that exceeds 18 hours.

‘Window of Circadian Low (WOCL)’ means the period between 02:00 and 05:59 hours in the time zone to which a crew member is acclimatised.

ORO.FTL.110 Operator responsibilities

An operator shall, where applicable to the type of operation:

- (a) publish duty rosters sufficiently in advance to provide the opportunity for crew members to plan adequate rest;
- (b) ensure that flight duty periods are planned in a way that enables crew members to remain sufficiently free from fatigue so that they can operate to a satisfactory level of safety under all circumstances;
- (c) specify reporting times that allow sufficient time for ground duties;
- (d) take into account the relationship between the frequencies and pattern of flight duty periods and rest periods and give consideration to the cumulative effects of undertaking long duty hours combined with minimum rest periods;
- (e) allocate duty patterns which avoid practices that cause a serious disruption of established sleep/work pattern, such as alternating day/night duties;
- (f) apply the type of disruptive schedule established under ARO.OPS.230 when a disruptive schedule cannot be avoided;
- (g) provide rest periods of sufficient time to enable crew members to overcome the effects of the previous duties and to be rested by the start of the following flight duty period;
- (h) plan recurrent extended recovery rest periods and notify crew members sufficiently in advance;
- (i) ensure that flights are planned to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the flight and turnaround times;
- (j) change a schedule and/or crewing arrangements if the actual operation exceeds the maximum flight duty period on more than 33% of the flights in that schedule during a scheduled seasonal period.

ORO.FTL.115 Crew member responsibilities

Crew members shall:

- (a) comply with CAT.GEN.MPA.100 of Annex IV (Part-CAT); and
- (b) make optimum use of the opportunities and facilities for rest provided and plan and use their rest periods properly.

ORO.FTL.120 Fatigue risk management (FRM)

- (a) When FRM is required by this Subpart or an applicable Certification Specification, the operator shall establish, implement and maintain FRM as an integral part of its management system. FRM shall ensure compliance with the Essential Requirements 7.f., 7.g. and 8.f. of Annex IV to Regulation (EC) No 216/2008. The FRM shall be described in the Operations Manual.
- (b) The FRM established, implemented and maintained shall include:
 - (1) a description of the philosophy and principles of the operator with regard to FRM, referred to as the FRM policy;
 - (2) documentation of the FRM processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
 - (3) scientific principles and knowledge;
 - (4) a hazard identification and risk assessment process that allows managing the operational risk(s) of the operator arising from crew member fatigue on a continuous basis;
 - (5) a risk mitigation process that provides for remedial actions to be implemented promptly, necessary to effectively mitigate the operator's risk(s) arising from crew member fatigue and for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions;
 - (6) and correspond to the roster system or flight time specification scheme used by the operator;
 - (7) provide for continuous improvement to the overall performance of the FRM;
 - (8) FRM safety assurance processes;
 - (9) FRM promotion processes.
- (c) The FRM shall correspond to the to the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities and the applicable flight time specification scheme.
- (d) The operator shall take mitigating actions when the FRM safety assurance process shows that the required safety performance is not maintained.

ORO.FTL.125 Flight time specification schemes

- (a) Without prejudice to Council Directive 2000/79/EC of 27 November 2000 concerning the European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation, operators shall establish, implement and maintain flight time specification schemes that are appropriate for the type(s) of operation performed and that comply with Regulation (EC) No 216/2008 and this Subpart.

- (b) Before being implemented, flight time specification schemes shall be approved by the competent authority.
- (c) To show compliance with Regulation (EC) No 216/2008 and this Subpart, the operator shall apply the applicable Certification Specifications adopted by the Agency. Alternatively, if the operator wants to deviate in accordance with Article 22 (2) of Regulation (EC) No 216/2008 from the Certification Specifications adopted by the Agency, it shall prior to implementing provide the competent authority with a full description of the deviation. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment demonstrating that the requirements of Regulation (EC) No 216/2008 and of this Subpart are met.

SECTION 2

Commercial Air Transport Operators

ORO.FTL.200 Home base

An operator shall assign a home base to each crew member.

ORO.FTL.205 Flight duty period (FDP)

- (a) The operator shall:
 - (1) define reporting times appropriate to each individual operation taking into account ORO.FTL.110(c);
 - (2) establish procedures specifying how the commander shall — in case of special circumstances which could lead to severe fatigue, and after consultation with the crew members affected — reduce the actual FDP and/or increase the rest period in order to eliminate any detrimental effect on flight safety.
- (b) Basic maximum daily FDP.
 - (1) The maximum daily FDP without the use of extensions for acclimatised crew members shall comply with the following table:

Table 1: Maximum daily FDP — Acclimatised crew members

Start of FDP	1–2 Sectors	3 Sectors	4 Sectors	5 Sectors	6 Sectors	7 Sectors	8 Sectors	9 Sectors	10 Sectors
0600–1329	13:00	12:30	12:00	11:30	11:00	10:30	10:00	09:30	09:00
1330–1359	12:45	12:15	11:45	11:15	10:45	10:15	09:45	09:15	09:00
1400–1429	12:30	12:00	11:30	11:00	10:30	10:00	09:30	09:00	09:00
1430–1459	12:15	11:45	11:15	10:45	10:15	09:45	09:15	09:00	09:00
1500–1529	12:00	11:30	11:00	10:30	10:00	09:30	09:00	09:00	09:00
1530–1559	11:45	11:15	10:45	10:15	09:45	09:15	09:00	09:00	09:00
1600–1629	11:30	11:00	10:30	10:00	09:30	09:00	09:00	09:00	09:00
1630–1659	11:15	10:45	10:15	09:45	09:15	09:00	09:00	09:00	09:00
1700–0459	11:00	10:30	10:00	09:30	09:00	09:00	09:00	09:00	09:00
0500–0514	12:00	11:30	11:00	10:30	10:00	09:30	09:00	09:00	09:00
0515–0529	12:15	11:45	11:15	10:45	10:15	09:45	09:15	09:00	09:00
0530–0544	12:30	12:00	11:30	11:00	10:30	10:00	09:30	09:00	09:00
0545–0559	12:45	12:15	11:45	11:15	10:45	10:15	09:45	09:15	09:00

(2) The maximum daily FDP when crew members are in an unknown state of acclimatisation shall comply with the following table:

(i) Crew members in an unknown state of acclimatisation

Maximum daily FDP according to sectors						
1–2	3	4	5	6	7	8
11:00	10:30	10:00	09:30	09:00	09:00	09:00

(3) The maximum daily FDP when crew members are in an unknown state of acclimatisation and the operator has implemented a FRM shall comply with the following table:

(ii) Crew members in an unknown state of acclimatisation under FRM

The values in the table below may apply provided the operator's FRM continuously monitors that the required safety performance is maintained.

Maximum daily FDP according to sectors						
1-2	3	4	5	6	7	8
12:00	11:30	11:00	10:30	10:00	09:30	09:00

(c) FDP with different reporting time for flight crew and cabin crew.

Whenever cabin crew requires more time than the flight crew for their pre-flight briefing for the same flight or series of flights, the FDP of the cabin crew may be extended by the difference in reporting time between the cabin crew and the flight crew. The difference shall not exceed 60 minutes. The maximum daily FDP for cabin crew shall be based on the time at which the flight crew report for their FDP, but the FDP shall start at the reporting time of the cabin crew.

(d) Maximum daily FDP with the use of extensions without in-flight rest.

- (1) The maximum daily FDP may be extended by up to 1 hour up to two times in any 7 consecutive days. In that case:
 - (i) the minimum pre-flight and post-flight rest periods shall be increased by 2 hours; or
 - (ii) the post-flight rest period shall be increased by 4 hours.
- (2) The use of the extension shall be planned in advance, and shall be limited to a maximum of:
 - (i) 5 sectors when the WOCL is not encroached; or
 - (ii) 4 sectors, when the WOCL is encroached by 2 hours or less; or
 - (iii) 2 sectors, when the WOCL is encroached by more than 2 hours.
- (3) Extension of the maximum basic daily FDP without in-flight rest shall not be combined with extensions due to in-flight rest or split duty in the same duty period.
- (4) When extensions are used for consecutive FDPs, the additional pre- and post-flight rest between the two extended FDPs shall be provided consecutively.
- (5) Flight time specification schemes shall specify the limits for extensions of the maximum basic daily FDP in accordance with the Certification Specifications applicable to the type of operation, taking into account:
 - (i) the number of sectors flown; and

- (ii) WOCL encroachment.
- (e) Maximum daily FDP with the use of extensions due to in-flight rest.
- (1) Flight time specification schemes shall specify the conditions for extensions of the maximum basic daily FDP with in-flight rest in accordance with the Certification Specifications applicable to the type of operation, taking into account:
 - (i) the number of sectors flown;
 - (ii) the minimum in-flight rest allocated to each crew member;
 - (iii) the type of in-flight rest facilities; and
 - (iv) the augmentation of the basic flight crew.
- (f) Unforeseen circumstances in flight operations — commander’s discretion.
- (1) The conditions to modify the limits on flight duty, duty and rest periods by the commander in the case of unforeseen circumstances in flight operations which start at or after the reporting time shall comply with the following:
 - (i) the maximum basic daily FDP which results after applying (b), (e) or ORO.FTL.220 may not be increased by more than 2 hours unless the flight crew has been augmented, in which case the maximum flight duty period may be increased by not more than 3 hours;
 - (ii) if on the final sector within an FDP unforeseen circumstances occur after take-off and result in the permitted increase being exceeded, the flight may continue to the planned destination or alternate; and
 - (iii) the rest period following an FDP may be reduced but never below 10 hours.
 - (2) In case of unforeseen circumstances which could lead to severe fatigue, the commander shall reduce the actual flight duty period and/or increase the rest period in order to eliminate any detrimental effect on flight safety.
 - (3) The commander shall consult all crew members on their alertness levels before deciding these modifications.
 - (4) The operator shall require the commander to submit a report to the operator when an FDP is increased or a rest period is reduced by his/her discretion.
 - (5) Where the increase of an FDP or reduction of a rest period exceeds 1 hour, a copy of the report, to which the operator shall add its comments, shall be sent to the competent authority not later than 28 days after the event.

- (6) The operator shall implement a non-punitive process for the use of the discretion described under this provision and shall describe it in the Operations Manual.
- (g) Unforeseen circumstances in flight operations — delayed reporting

The operator shall establish procedures for delayed reporting in the Operations Manual in accordance the Certification Specifications applicable to the type of operation.

ORO.FTL.210 Flight times and duty periods

- (a) The total duty periods to which a crew member may be assigned shall not exceed:
 - (1) 60 duty hours in any 7 consecutive days;
 - (2) 110 duty hours in any 14 consecutive days; and
 - (3) 190 duty hours in any 28 consecutive days, spread as evenly as practicable throughout this period.
- (b) The total flight time of the flights on which an individual crew member is assigned as an operating crew member shall not exceed:
 - (1) 100 hours of flight time in any 28 consecutive days; and
 - (2) 900 hours of flight time in any calendar year; and
 - (3) 1 000 hours of flight time in any 12 consecutive calendar months.
- (c) Post-flight duty shall count as duty. The operator shall specify in its Operations Manual the minimum time period for post-flight duties.

ORO.FTL.215 Positioning

If operators position to crew members, the following shall apply:

- (a) Positioning after reporting but prior to operating shall be counted as FDP but shall not count as a sector.
- (b) All time spent on positioning shall count as duty time.

ORO.FTL.220 Split duty

- (a) Flight time specification schemes shall specify the following elements for split duty in accordance with the Certification Specifications applicable to the type of operation:
 - (1) the minimum duration of a break on the ground; and
 - (2) by derogation from ORO.FTL.205(b), the possibility to increase the FDP taking into account the duration of the break on the ground, and facilities provided to the crew member to rest and other relevant factors.
- (b) The break on the ground shall count in full as FDP.

- (c) Split duty shall not follow a reduced rest.

ORO.FTL.225 Standby and airport duty

If operators assign crew members to standby or airport duty, the following shall apply in accordance with the Certification Specifications applicable to the type of operation:

- (a) Standby and airport duty shall be rostered and the start and end time of standby shall be defined and notified in advance to the affected crew members to provide them with the opportunity to plan adequate rest.
- (b) Airport duty shall count in full as duty time and the FDP shall count in full from the airport duty reporting time.
- (c) The operator shall provide accommodation to the crew member on airport standby.
- (d) Flight time specification schemes shall specify the following elements:
 - (1) the maximum duration of any standby;
 - (2) the impact of standby on the maximum FDP that may be assigned, taking into account facilities provided to the crew member to rest, and other relevant factors such as the need for immediate readiness of the crew member, the interference of standby with sleep and/or sufficient notification to protect a sleep opportunity between the call for duty and the assigned FDP;
 - (3) the basic minimum rest period following standby which does not lead to assignment of an FDP; and
 - (4) how time spent on standby shall be counted for the purpose of cumulative duty hours.

ORO.FTL.230 Reserve

If operators assign crew members to reserve, the following shall apply in accordance with the Certification Specifications applicable to the type of operation:

- (a) Reserve shall be rostered;
- (b) Flight time specification schemes shall specify the following elements:
 - (1) the maximum duration of any single reserve period;
 - (2) the number of consecutive reserve days that may be assigned to a crew member.

ORO.FTL.235 Rest periods

- (a) Minimum rest period at home base.

The minimum rest period provided before undertaking an FDP starting at home base shall:

- (1) be at least as long as the preceding duty period, or 12 hours, whichever is greater; or
- (2) comply with (b), if the operator provides a suitable accommodation to the crew member.

(b) Minimum rest period away from home base.

The minimum rest period provided before undertaking an FDP starting away from home base shall be at least as long as the preceding duty period, or 10 hours, whichever is greater. This period shall include an 8-hour sleep opportunity in addition to the time for travelling and physiological needs.

(c) Reduced rest

By derogation from (a) and (b), flight time specification schemes may reduce the minimum rest periods taking into account the following elements in accordance with the Certification Specifications applicable to the type of operation:

- (1) the minimum reduced rest period;
- (2) the increase of the subsequent rest period; and
- (3) the reduction of the FDP following the reduced rest.

(d) Recurrent extended recovery rest periods

Flight time specification schemes shall specify recurrent extended recovery rest periods to compensate for cumulative fatigue. The minimum recurrent extended recovery rest period shall be 36 hours, including 2 local nights, such that there shall never be more than 168 hours between the end of one recurrent extended recovery rest period and the start of the next extended recovery rest period. The recurrent extended recovery rest period shall be increased to 2 days twice every month.

(e) Flight time specification schemes shall specify additional rest periods in accordance with the applicable Certification Specifications to compensate for:

- (1) the effects of time zone differences and extensions of the FDP;
- (2) additional cumulative fatigue due to disruptive schedules; and
- (3) a change of home base.

ORO.FTL.240 Nutrition

- (a) A meal and drink opportunity shall occur during the FDP in order to avoid any detriment to a crew member's performance, especially when the FDP exceeds 6 hours.
- (b) An operator shall specify in its Operations Manual how the crew member's nutrition during FDP is ensured.

ORO.FTL.245 Records of flight and duty times and rest periods

- (a) Operators shall maintain, for a period of 24 months:

- (1) Individual records for each crew member including:
 - (i) flight times;
 - (ii) start, duration and end of each duty period and FDP;
 - (iii) rest periods and days free of all duties; and
 - (iv) assigned home base.
 - (2) Reports on extended flight duty periods and reduced rest periods.
- (b) Upon request, the operator shall provide copies of individual records of flight and duty times and rest periods to:
- (1) the crew member concerned; and
 - (2) to another operator, in respect of a crew member who is or becomes a crew member of the operator concerned.
- (c) Records referred to in CAT.GEN.MPA.100 (b)(5) in relation to crew members who perform functions for more than one operator shall be kept for a period of 24 months.

ORO.FTL.250 Fatigue management training

- (a) The operator shall provide initial and recurrent fatigue management training to crew members, crew rostering personnel and concerned management personnel.
- (b) This training shall follow a training programme established by the operator and described in the Operations Manual. The training syllabus shall cover the possible causes and effects of fatigue, and fatigue countermeasure.