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# EASA FTL Guide

Vereinigung Cockpit e.V.

Version 1.5.1

Air OPS (EASA FTL) 21.Feb 2016	Comments / <i>BASICS</i> ...by AG FTL	<b>FAQ</b> ...EASA/FTL FAQ as understood by AG FTL
<p><b>... created for internal use only</b></p> <p>It is not intended to be used as a general reference for flight crew or similar. NOTE → Differences to previous version are <b>highlighted</b>.</p>		
<p>This document assembles the combined rules of the <b>Air OPS Annex III – Part-ORO</b> and associated publications derived from the following papers:</p>		
<b>BASIC REGULATION (IR)</b>	→	REGULATION (EC) No 216/2008 ... <i>NOT INCLUDED</i> ... unless where specifically stated
<b>IMPLEMENTING RULES (IR)</b>	→	COMMISSION REGULATION (EU) No 83/2014
<b>ACCEPTABLE MEANS OF COMPLIANCE (AMC)<sub>IR</sub></b> <b>GUIDANCE MATERIAL (GM)<sub>IR</sub></b>	→	Consolidated unofficial AMC/GM to Annex III (Part-ORO)* / including Issue 2**, Amendment 1, 20 Feb 2015
<b>CERTIFICATION SPECIFICATIONS (CS)</b> <b>GUIDANCE MATERIAL (GM)<sub>CS</sub></b>	→	Certification Specifications and Guidance Material for CAT by Aeroplane — Scheduled and Charter Operations CS-FTL.1***, Initial Issue 31 January 2014
<p>* Annex to Regulation (EC) 216/2008 published under Comm. Reg. (EU) 965/2012 (i.e. excluding ORO.FTL) and supplemented by Comm. Reg. (EU) 83/2014  ** Issue 2 = Annex to ED Decision 2014/017/R – Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Part-ORO (Subpart FTL) Amendment 3, 31 January 2014 → incorporated  ***Annex to ED Decision 2014/002/R (Acc. Means of Compliance (AMC) and Guidance Material (GM) to Part-ORO Consolidated version Issue 21 / 24 April 2014 / Annex to ED Decision 2014-017-R - Part-ORO_0)</p> <p><b>EXPLANATORY NOTES ARE NOT INCLUDED</b></p>		
<ul style="list-style-type: none"> <li>• Some elements of the implementing rules or certification specifications are shown in the centre column for the purpose to reduce the number of pages needed.</li> <li>• Comments / <i>BASICS</i> are boxed in light blue.</li> <li>• <b>FRM rules</b> relating to ORO.FTL.120 Fatigue Risk Management (FRM) <b>are highlighted</b>.</li> </ul>		
<b>ORO.FTL.100 Scope</b>	⇒	<b>This subpart establishes the requirements to be met by an operator and its crew members with regard to flight and duty time limitations and rest requirements for crew members</b>
<b>CS FTL.1.100 Applicability</b>	⇒	These Certification Specifications are applicable to commercial air transport by aeroplanes for scheduled and charter operations, excluding emergency medical service (EMS), air taxi and single pilot operations.

(1) **“acclimatised”** means a state in which a crew member’s circadian biological clock is synchronised to the time zone where the crew member is. A crewmember is considered to be acclimatised to a 2-hour wide time zone surrounding the local time at the point of departure. When the local time at the place where a duty commences differs by more than 2 hours from the local time at the place where the next duty starts, the crew member, for the calculation of the maximum daily flight duty period, is considered to be acclimatised in accordance with the values in Table 1.

(...see next column → Table 1)

**“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 next duty

**“X”** means ... that the crew member is in an unknown state of acclimatisation;

GM1 ORO.FTL.105 (1)

**ACCLIMATISED**

(a) A crew member remains acclimatised to the local time of his/her reference time during 47 hours 59 minutes after reporting no matter how many time zones he/she has crossed.

(b) The maximum daily FDP for acclimatised crewmembers is determined by using table 1 of ORO.FTL.205 (b)(1) with the reference time of the point of departure. As soon as 48 hours have elapsed, the state of acclimatisation is derived from the time elapsed since reporting at reference time and the number of time zones crossed.

**ACCLIMATISED ‘POINT OF DEPARTURE’**

The point of departure refers to the reporting point for a flight duty period or positioning duty after a rest period.

**ACCLIMATISED ‘TIME ELAPSED SINCE REPORTING AT REFERENCE TIME’**

The time elapsed since reporting at reference time for operations applying CS FTL.1.235 (b)(3)(ii) at home base refers to the time elapsed since reporting for the first time at home base for a rotation.

Table 1

Time difference between reference time and local time where crew member starts the next duty	Time elapsed since reporting at reference time				
	< 48	48 – 71:59	72 – 95:59	96 – 119:59	≥ 120
≤ 2	D	D	D	D	D
< 4	B	D	D	D	D
≥ 4 and ≤ 6	B	X	D	D	D
> 6 and ≤ 9	B	X	X	D	D
> 9 and ≤ 12	B	X	X	X	D

Line below represents “2-hour wide time zone” after departure:

≤ 2	D	D	D	D	D
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< 4	B	D	D	D	D
≥ 4 and ≤ 6	B	X	D	D	D
> 6 and ≤ 9	B	X	X	D	D
> 9 and ≤ 12	B	X	X	X	D

← (1) The use of “acclimatised” and “non acclimatised” is known from CAP 371 (UK) but not yet commonly used. Future experience has to show the usefulness of the schematics. However, so far we see a drastic improvement, since time zone adoption was typically not regarded by any means.

...for a better understanding, see CAA document on acclimatisation, search...

<http://www.caa.co.uk/>

...for document ⇒ *Guidance on Acclimatisation*

← (GM - TIME ELAPSED...) touching home base during a rotation with a total time zone difference of 4 hrs. or more does not shorten the rest (resynchronization) according to CS.FTL.1.235 (b)(3)(i)

**BASICS (Acclimatization)**

The principle of “acclimatisation” does not distinguish between home base and any other location.

**“B”** means “acclimatized to a specific time zone which is not necessarily the time zone of departure”

**“D”** means “time zone of next duty after time elapsed since reporting at time zone of acclimatization”

“Time zone hopping” at 2 hrs. intervals leads to an on-going acclimatisation to the place of rest. (←left ...see line “≤ 2”)

Table 1 defines the moment when the reference time will jump to local time at the place of current layover.

**“Time elapsed”** always refers to reference time – i.e. report for duty at time zone of last acclimatization.

“Time elapsed” defines whether reference time lags behind (...max. 48 hrs.) or jumps to the present location of the crew member (...after min. time acc. Table 1 has elapsed):

Status “B” ended → time elapsed has exceeded 48 hrs.

**and**

Status “D” not yet → min. time for resynchronization not yet reached

→ The crew member is in an **unknown** state of acclimatisation.

<p>(2) "<b>Reference time</b>" means the local time at the reporting point situated in a 2-hour wide time zone band around the local time where a crew member is acclimatised;</p> <p>GM1 ORO.FTL.105 (2)</p> <p style="text-align: right;">REFERENCE TIME</p> <p>(a) Reference time refers to reporting points in a 2-hour wide time zone band around the local time where a crewmember is acclimatised.</p> <p>(b) Example: A crewmember is acclimatised to the local time in Helsinki and reports for duty in London. The reference time is the local time in London.</p>	<p>← (2) Provides the option to merge crews from different locations at a common point of departure under the same duty restrictions.</p> <p>NOTE: It is possible to leave home base starting a rotation <b>without</b> being acclimatized to home base. This applies to crew members who are acclimatised to a time zone with a differences of more than 2 but less than 4 hours to home base time and a second departure out of home base within 48 hours departing that time zone.</p>	<p><b>BASICS (Reference Time)</b></p> <p>Reference time always refers to the time zone where the crew member was acclimatized last.</p> <p>It is used to determine FDP limits as well as whether a duty is disruptive (A crew member must still be acclimatized when reporting for duty that this duty may be counted as disruptive).</p>
<p>(3) "<b>accommodation</b>" 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 the possibility to sleep, with enough capacity... ...to accommodate <b>all crew members</b> present at the same time and with access to food and drink;</p> <p>GM1 ORO.FTL.105 (3)</p> <p style="text-align: center;">ADEQUATE FURNITURE FOR 'ACCOMMODATION'</p> <p>Adequate furniture for crewmember accommodation should include a seat that reclines at least 45° back angle to the vertical, has a seat width of at least 20 inches (50 cm) and provides leg and foot support.</p>	<p>← (3) acceptable definition frequently used – not part of EU OPS.</p>	<p><b>FAQ – ORO.FTL 105(3)</b></p> <p><i>An Airport crew lounge or similar is not excluded as an accommodation as long as all criteria as listed are fulfilled. Single occupancy is not a criterion. Thus even a shared hotel room could be used.</i></p>
<p>(4) "<b>suitable accommodation</b>" means, for the purpose of standby, split duty, and <b>rest</b>, ...</p> <p>a separate room for <b>each crew member</b> located in a quiet environment and equipped with a bed, which is sufficiently ventilated, has a device for regulating temperature and light intensity, and access to food and drink;</p>	<p>← (4) acceptable definition frequently used – not used in EU OPS.</p>	
<p>(5) "<b>augmented flight crew</b>" means a flight crew which comprises more than the minimum number required to operate the aircraft, allowing each flight crew member to leave the assigned post, for the purpose of in-flight rest, and to be replaced by another appropriately qualified flight crew member;</p>	<p>← (5) improved in regards to EU OPS.</p>	
<p>(6) "<b>break</b>" means a period of time within a flight duty period, shorter than a rest period, counting as duty and during which a crew member is free of all</p>	<p>← (6) improved in regards to EU OPS.</p>	

tasks;																		
(7) <b>"delayed reporting"</b> means the postponement of a scheduled FDP by the operator before a crew member has left the place of rest;	← (7) not used in EU OPS																	
<p>(8) <b>"disruptive schedule"</b> means a crew member's roster which disrupts the sleep opportunity during the optimal sleep time window by comprising an FDP or a combination of FDPs which encroach, start or finish during any portion of the day or of the night where a crew member is acclimatised. A schedule may be disruptive due to early starts, late finishes or night duties.</p> <p>(a) <b>"early type"</b> of disruptive schedule means:</p> <p>(i) for <b>"early start"</b> 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</p> <p>(ii) for <b>"late finish"</b> a duty period finishing in the period between 23:00 and 01:59 in the time zone to which a crew member is acclimatised;</p> <p>(b) <b>"late type"</b> of disruptive schedule means:</p> <p>(i) for <b>"early start"</b> 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</p> <p>(ii) for <b>"late finish"</b> a duty period finishing in the period between 00:00 and 01:59 in the time zone to which a crew member is acclimatised;</p> <p>GM1 ORO.FTL.105 (8)      DETERMINATION OF DISRUPTIVE SCHEDULES</p> <p>If a crewmember is acclimatised to the local time at his/her home base, the local time at the home base should be used to consider an FDP as 'disruptive schedule'. This applies to operations within the 2-hour wide time zone surrounding the local time at the home base, if a crewmember is acclimatised to the local time at his/her home base.</p>	<p>← (8) replaces OPS 1.1090 3.3. with specific rules not provided under EU OPS</p> <p>← (a) according to (EU) 83/2014 ARO.OPS.235 the competent authority has to determine for all operators under its oversight whether...</p> <table border="1"> <thead> <tr> <th></th> <th>late finish</th> <th>night duty</th> <th>early start</th> </tr> </thead> <tbody> <tr> <td>"early type"</td> <td>2300 - 0159</td> <td>0500 - 0559</td> <td></td> </tr> <tr> <td>or</td> <td></td> <td></td> <td></td> </tr> <tr> <td>"late type"</td> <td>0000 - 0159</td> <td>0500 - 0659</td> <td></td> </tr> </tbody> </table> <p>...restrictions apply.</p> <p>→ ORO.FTL.110 Operator Responsibility</p> <p>NOTE – GM 1 ORO.FTL.105 (8) could lead to the following consequence: The same schedule could be rated "disruptive" or "not disruptive" for different members of the same crew since the individual point of acclimatization and the individual reporting time (flight crew vs. cabin) must be observed.</p>		late finish	night duty	early start	"early type"	2300 - 0159	0500 - 0559		or				"late type"	0000 - 0159	0500 - 0659		<p><b>FAQ – ORO.FTL 105 (8)</b></p> <p><i>A schedule is rated "disruptive" or "not disruptive" in reference to the time zone where the crew member was assumed to be acclimatized last; i.e. the applicable reference time.</i></p> <p><i>NOTE: A duty can only be classed as disruptive if a crew member is acclimatised when reporting.</i></p> <p>Thus...</p> <p><i>... disruptive schedules must always be considered within time zone differences of less than 4 hours to reference time since crew members stay acclimatized at all times.</i></p> <p><b>BASICS</b></p> <p><i>When various FDT limits apply within one crew the most limiting must be used.</i></p>
	late finish	night duty	early start															
"early type"	2300 - 0159	0500 - 0559																
or																		
"late type"	0000 - 0159	0500 - 0659																
(9) <b>"night duty"</b> 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;	← (9) i.e. encroaches the WOCL																	
(10) <b>"duty"</b> means any task that a crew member performs for the operator, including flight duty, administrative work, giving or receiving training and	← (10) further specified in regards to EU OPS																	

<p>checking, positioning, and some elements of standby;</p> <p>GM1 ORO.FTL.105 (10) <span style="float: right;">ELEMENTS OF STANDBY FOR DUTY</span></p> <p>ORO.FTL.225(c) and (d) and CS FTL.1.225 (b)(2) determine which elements of standby count as duty.</p>		
<p>(11) "<b>duty period</b>" 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, including post-flight duty;</p>	<p>← (11) post-flight duties incorporated.</p>	
<p>(12) "<b>flight duty period (FDP)</b>" means a period that commences when a crew member is required to report for duty, which includes a sector or a series of sectors, and finishes when the aircraft finally comes to rest and the engines are shut down, at the end of the last sector on which the crew member acts as an operating crew member;</p>	<p>← (12) shut down of engines incorporated again – more specific definition in regards to EU OPS.</p>	<p><b>FAQ – ORO.FTL.105 (12)</b></p> <p><i>Duty immediately prior to a flight duty counts as part of the flight duty; duty immediately after a flight duty counts as duty period but not as flight duty.</i></p>
<p>(13) "<b>flight time</b>" 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;</p>	<p>← (13) <b>New</b> &gt; replaces the term "block time"</p>	
<p>(14) "<b>home base</b>" 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;</p>		
<p>(15) "<b>local day</b>" means a 24-hour period commencing at 00:00 local time;</p>		
<p>(16) "<b>local night</b>" means a period of 8 hours falling between 22:00 and 08:00 local time;</p>		
<p>(17) "<b>operating crew member</b>" means a crew member carrying out duties in an aircraft during a sector;</p> <p>GM1 ORO.FTL.105 (17) <span style="float: right;">OPERATING CREW MEMBER</span></p> <p>A person on board an aircraft is either a crewmember or a passenger. If a crewmember is not a passenger on board an aircraft, he/she should be considered as 'carrying out duties'. The crewmember remains an operating crewmember during in-flight rest. In-flight rest counts in full as FDP, and for the purpose of ORO.FTL.210.</p>	<p>← (17) wording adopted to new nomenclature</p>	

<p>(18) "<b>positioning</b>" means the transferring of a non-operating crew member from one place to another, at the behest of the operator, excluding:</p> <ul style="list-style-type: none"> <li>• the time of travel from a private place of rest to the designated reporting place at home base and vice versa, and</li> <li>• the time for local transfer from a place of rest to the commencement of duty and vice versa;</li> </ul>	<p>← (18) wording specified and adopted to new nomenclature</p>	<p><b>FAQ – ORO.FTL.105 (18)</b></p> <p><i>Any transfer of a crew member at the behest of the operator must be considered as positioning; thus "duty travel" is regarded the same as "positioning, dead heading..."</i></p>
<p>(19) "<b>rest facility</b>" means a bunk or seat with leg and foot support suitable for crew members' sleeping on board an aircraft;</p>	<p>← (19) not specifies under EU OPS (national reg.)</p>	
<p>(20) "<b>reserve</b>" means a period of time during which a crew member is required by the operator to be available to receive an assignment for an FDP, positioning or other duty notified at least 10 hours in advance;</p>	<p>← (20) not specifies under EU OPS (national reg.)</p>	
<p>(21) "<b>rest period</b>" means a continuous, uninterrupted and defined period of time, following duty or prior to duty, during which a crew member is free of all duties, standby and reserve;</p>	<p>← (21) wording specified and adopted to new nomenclature</p>	
<p>(22) "<b>rotation</b>" 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;</p>	<p>← (22) not used under EU OPS</p>	<p><b>BASICS (rotation)</b></p> <p>A series of flights returning to home base without a rest period is considered not to be a rotation.</p>
<p>(23) "<b>single day free of duty</b>" means, for the purpose of complying with the provisions of Council Directive 2000/79/EC, a time free of all duties and standby consisting of one day and two local nights, which is notified in advance. A rest period may be included as part of the single day free of duty;</p>	<p>← (23) it is most important to clearly differentiate between a...</p> <p>1) ...day free of all duty and standby notified in advance and given as local days... typically referred to as... "local days free of duty" Directive 2000/79/EC) or „local day“ &gt;&gt;&gt; Reg 859/2008 OPS 1.1095 1.8.</p> <p>2) ...single day free of duty... "single day free of duty" &gt;&gt;&gt; Reg 859/2008 OPS 1.1095 1.10.</p>	<p><b>BASICS (single day vs. local days)</b></p> <p>In the EU OPS world, the days from Directive 2000/79/EC were covered by national law &gt;&gt;&gt;only&lt;&lt;&lt;.</p> <p>In the EASA FTL (AIR OPS) world, EASA connects the two definitions known from EU OPS and eventually sets a new standard. „Eventually“, because it depends on former national law. It is possible that an NAA had these two standards connected already in the past.</p> <p>Under ORO FTL.105 (23).the „local days“ from 2000/79/EC are extended to 1 day + 2 local nights.</p>
<p>(24) "<b>sector</b>" means the segment of an FDP between an aircraft first moving</p>	<p>← (24) not used under EU OPS</p>	

for the purpose of taking off until it comes to rest after landing on the designated parking position;		
(25) " <b>standby</b> " 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;		
(26) " <b>airport standby</b> " means a standby performed at the airport;	← (26) not used under EU OPS	
(27) " <b>other standby</b> " means a standby either at home or in a suitable accommodation;	← (27) not used under EU OPS	
(28) " <b>window of circadian low</b> (WOCL)" means the period between 02:00 and 05:59 hours in the time zone to which a crew member is acclimatised.	← (28) no change but adopted to the provisions of "acclimatisation"	
<b>ORO.FTL.110 Operator Responsibilities ⇒ An operator shall...</b>		
<p>AMC<sub>1</sub> ORO.FTL.110</p> <p style="text-align: right;">SCHEDULING</p> <p>(a) Scheduling has an important impact on a crewmember's ability to sleep and to maintain a proper level of alertness. When developing a workable roster, the operator should strike a fair balance between the commercial needs and the capacity of individual crewmembers to work effectively. Rosters should be developed in such a way that they distribute the amount of work evenly among those that are involved.</p> <p>(b) Schedules should allow for flights to be completed within the maximum permitted flight duty period and flight rosters should take into account the time needed for pre-flight duties, taxiing, the flight- and turnaround times. Other factors to be considered when planning duty periods should include:</p> <p>(1) The allocation of work patterns which avoid undesirable practices such as alternating day/night duties, alternating eastward-westward or westward-eastward time zone transitions, positioning of crew members so that a serious disruption of established sleep/work patterns occurs;</p> <p>(2) Scheduling sufficient rest periods especially after long flights crossing many time zones; and</p> <p>(3) Preparation of duty rosters sufficiently in advance with planning of recurrent extended recovery rest periods and notification of the crewmembers well in advance to plan adequate pre-duty rest.</p>	<p>← (a) indicates that an operator should have some kind of tool established to strive for a distribution of days of during a significant period of time (calendar year?) as evenly as possible among crew members of equal occupation.</p>	<p><b>FAQ – ORO.FTL.110(a)</b></p> <p><i>A rest period may be re-planned provided that re-planning of rest (and duty) is completed and notified before the rest period has started and the re-planning practices do not conflict with a crew member's opportunity to plan adequate rest. ORO.FTL.110(a) instructs the operator to publish duty rosters sufficiently in advance to provide the opportunity for crew members to plan adequate rest. ORO.FTL.105(21) states that 'rest period' means a continuous, uninterrupted and defined period of time, following duty or prior to duty, during which a crew member is free of all duties, standby and reserve.</i></p> <p><i>An operator's procedures for re-planning should <b>demonstrably describe</b> by which means the opportunity for crew members</i></p>

<p>(a) publish duty rosters sufficiently in advance to provide the opportunity for crew members to plan adequate rest;</p> <p>AMC<sub>1</sub> ORO.FTL.110 (a) PUBLICATION OF ROSTERS Rosters should be published 14 days in advance.</p> <p>(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;</p> <p>(c) specify reporting times that allow sufficient time for ground duties;</p> <p>(d) take into account the relationship between the frequency 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;</p> <p>(e) allocate duty patterns which avoid practices that cause a serious disruption of an established sleep/work pattern, such as alternating day/night duties;</p> <p>(f) comply with the provisions concerning disruptive schedules in accordance with ARO.OPS.230;</p> <p>(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;</p> <p>(h) plan recurrent extended recovery rest periods and notify crew members sufficiently in advance;</p> <p>(i) plan flight duties in order to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the sector and turnaround times;</p> <p>(j) change a schedule and/or crew arrangements if the actual operation exceeds the maximum flight duty period on more than 33% of the flight duties in that schedule during a scheduled seasonal period.</p> <p>AMC<sub>1</sub> ORO.FTL.110 (j) OPERATIONAL ROBUSTNESS OF ROSTERS The operator should establish and monitor performance indicators for operational robustness of rosters.</p>	<p>← (3) A continuous “ad hoc” scheduling over days and weeks as frequently practiced in business aviation is prohibited!</p> <p>COMMISSION REGULATION (EU) No 83/2014 In Annex II to Regulation (EU) No 965/2012, the following points ARO.OPS.230 and ARO.OPS.235 are added: <b>ARO.OPS.230</b> Determination of disruptive schedules For the purpose of flight time limitations, the competent authority shall determine, in accordance with the definitions of “early type” and “late type” of disruptive schedules in point ORO.FTL.105 of Annex III, which of those two types of disruptive schedules shall apply to all CAT operators under its oversight. → ORO.FTL.105 Definitions (8) “disruptive schedule”</p> <p>← (j) In all consequences... a change to the scheduling needs to be made only once 33% of all flights of a particular pairing were operated under commander’s discretion!!!</p>	<p>to plan adequate rest is provided in the case of re-planning.</p> <p><i>If re-planning takes place during the recurrent extended recovery rest period, a full uninterrupted rest period of 36 hours including 2 local nights must be respected after the interruption.</i></p> <p><b>Generally speaking, any re-planning has to respect the crew member’s ability to achieve adequate rest.</b></p> <p><b>FAQ – ORO.FTL.110(c)</b> <i>Reporting times may be different for different crew members – however considering ORO.FTL.205(c) the “one crew – one limit” principle applies. ORO.FTL.205(c) allows 1 extra hour prior the reporting of the flight crew for additional pre-flight briefing. In other words, the FDP limit of the flight crew may be extended by up to 1 hour for the cabin crew for briefing purposes only.</i></p> <p><i>In any case the individual FDP starts at the crew member’s reporting time - thus the most limiting reporting time as well as other possible more restrictive individual FDP limits are governing.</i></p>
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<p>GM1 ORO.FTL.110 (j)</p> <p style="text-align: center;">OPERATIONAL ROBUSTNESS OF ROSTERS</p> <p>Performance indicators for operational robustness of rosters should support the operator in the assessment of the stability of its rostering system. Performance indicators for operational robustness of rosters should at least measure how often a rostered crew pairing for a duty period is achieved within the planned duration of that duty period. Crew pairing means rostered positioning and flights for crewmembers in one duty period.</p>	<p>← GM1 (j) Statistics on "on time" departure are obviously insufficient for an assessment of roster stability – only statistics on "on time" arrival of the final sector of a series of flights may indicate roster stability.</p>	
<p><b>ORO.FTL.115 Crew Member Responsibilities</b> ⇒ <b>Crewmembers shall...</b></p>		
<p>(a) ...comply with point CAT.GEN.MPA.100(b) 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.</p> <div style="background-color: #d9c8a8; padding: 10px; margin-top: 20px;"> <p><b>FAQ – ORO.FTL.115 / 210 /235</b></p> <p>Crew members shall not simply enjoy provisions for rest and the opportunity to plan ahead but focus on their responsibility to reduce fatigue.</p> <p>Generally speaking, any professional activity must be known to the operator planning rest and duty to be able to meet his responsibilities in regards to avoid fatigue and accumulated fatigue.</p> <p>For further details in regards to the provision of data see NCC.GEN.105(f)(2)</p> </div>	<p>→ CAT.GEN.MPA.100 Crew responsibilities ...</p> <p>(b) The crew member shall:</p> <ol style="list-style-type: none"> <li>(1) report to the commander any fault, failure, malfunction or defect which the crew member believes may affect the airworthiness or safe operation of the aircraft including emergency systems, if not already reported by another crew member;</li> <li>(2) report to the commander any incident that endangered, or could have endangered, the safety of the operation, if not already reported by another crew member;</li> <li>(3) comply with the relevant requirements of the operator's occurrence reporting schemes;</li> <li>(4) <b>comply with all flight and duty time limitations (FTL) and rest requirements applicable to their activities;</b></li> <li>(5) when undertaking duties for more than one operator: <ol style="list-style-type: none"> <li>(i) maintain his/her individual records regarding flight and duty times and rest periods as referred to in applicable FTL requirements; and</li> <li>(ii) provide each operator with the data needed to schedule activities in accordance with the applicable FTL requirements.</li> </ol> </li> </ol> <p>AMC1 CAT.GEN.MPA.100 (b) Crew responsibilities COPIES OF REPORTS Where a written report is required, a copy of the report should be communicated to the commander concerned, unless the terms of the operator's reporting schemes prevent this.</p>	
<p><b>ORO.FTL.120 Fatigue Risk Management (FRM)</b></p>		
<p><b>(a) When FRM is required</b> by this Subpart or an applicable certification specification, the operator shall establish, implement and maintain a FRM as an integral part of its management system. The FRM shall ensure compliance with the essential requirements in points 7.f, 7.g and 8.f of Annex IV to Regu-</p>	<p><b>Basic Regulation</b></p> <p>→ Annex IV to Regulation (EC) No. 216/2008</p> <p>7. Crew members ...</p>	<p>See ECA position on...</p> <p style="background-color: #d9c8a8; padding: 5px; text-align: center;"><b>FRM in Europe – essential require-</b></p>

lation (EC) No. 216/2008. The FRM shall be described in the operations manual.

(b) The FRM established, implemented and maintained shall provide for **continuous improvement to the overall performance** of the FRM and shall include:

(1) a description of the philosophy and principles of the operator with regard to FRM, referred to as **the FRM policy**;

AMC1 ORO.FTL.120 (b)(1) CAT OPERATORS' FRM POLICY

(a) The operator's FRM policy should identify all the elements of FRM.

(b) The FRM policy should define to which operations FRM applies.

(c) The FRM policy should:

(1) reflect the shared responsibility of management, flight and cabin crew, and other involved personnel;

(2) state the safety objectives of FRM;

(3) be signed by the accountable manager;

(4) be communicated, with visible endorsement, to all the relevant areas and levels of the organisation;

(5) declare management commitment to effective safety reporting;

(6) declare management commitment to the provision of adequate resources for FRM;

(7) declare management commitment to continuous improvement of FRM;

(8) require that clear lines of accountability for management, flight and cabin crew, and all other involved personnel are identified; and

(9) require periodic reviews to ensure it remains relevant and appropriate.

(2) **documentation** of the FRM processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;

AMC2 ORO.FTL.120 (b)(2) CAT OPERATORS' FRM POLICY

The operator should develop and keep current FRM documentation that describes and records:

(a) FRM policy and objectives;

(b) FRM processes and procedures;

(c) accountabilities, responsibilities and authorities for these processes and procedures;

(d) mechanisms for on-going involvement of management, flight and cabin crew members, and all other involved personnel;

7.f. No crew member must allow their task achievement/decision making to deteriorate to the extent that flight safety is endangered because of the effects of fatigue, taking into account, inter alia, fatigue accumulation, sleep deprivation, number of sectors flown, night duties or time zone changes. Rest periods must provide sufficient time to enable crew members to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.

7.g. A crew member must not perform allocated duties on board an aircraft when under the influence of psychoactive substances or alcohol or when **unfit** due to injury, fatigue, medication, sickness or other similar causes.

...

8.f. The prevention of fatigue must be managed through a rostering system. For a flight, or series of flights, such a rostering system needs to address flight time, flight-duty periods, duty and adapted rest periods. Limitations established within the rostering system must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, time-zone crossing, sleep deprivation, disruption of circadian cycles, night hours, positioning, cumulative duty time for given periods of time, sharing of allocated tasks between crew members, and also the provision of augmented crews.

FRM Guidelines shall be added

**ments for its successful implementation**

[https://www.eurocockpit.be/sites/default/files/eca\\_position\\_fatigue\\_risk\\_management\\_frms\\_pp\\_14\\_1119\\_f.pdf](https://www.eurocockpit.be/sites/default/files/eca_position_fatigue_risk_management_frms_pp_14_1119_f.pdf)

←(7.g)

Crew Members must be fit to fly...  
Fatigue can be a cause to be...  
"unfit to fly"

←(8.f)

Scientific findings show specific rest demand after time zone crossing but still also a strong individual effect for different crew members.

It might be advisable to provide different rest patterns on similar routes.

Should an operator service several routes from Europe to the Far East it could be helpful to offer shorter layovers (single night return) on one route where as a longer layover is provided on a similar one (similar in terms of departure time and time zone crossing) and offer the crew members to choose a preference.

<p>(e) FRM training programmes, training requirements and attendance records;</p> <p>(f) scheduled and actual flight times, duty periods and rest periods with deviations and reasons for deviations; and</p> <p>(g) FRM outputs including findings from collected data, recommendations, and actions taken.</p> <p>(3) <b>scientific principles</b> and knowledge;</p> <p>(4) <b>A hazard identification and risk assessment</b> process that allows managing the operational risk(s) of the operator arising from crew member fatigue on a continuous basis;</p> <p>AMC<sub>1</sub> ORO.FTL.120 (b)(4)</p> <p style="text-align: center;">COMMERCIAL AIR TRANSPORT OPERATORS' IDENTIFICATION OF HAZARDS</p> <p>The operator should develop and maintain three documented processes for fatigue hazard identification:</p> <p>(a) Predictive</p> <p>(1) The predictive process should identify fatigue hazards by examining crew scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include, but are not limited to:</p> <p>(2) operator or industry operational experience and data collected on similar types of operations;</p> <p>(3) evidence-based scheduling practices; and</p> <p>(4) bio-mathematical models.</p> <p>(b) Proactive</p> <p>The proactive process should identify fatigue hazards within current flight operations. Methods of examination may include, but are not limited to:</p> <p>(1) self-reporting of fatigue risks;</p> <p>(2) crew fatigue surveys;</p> <p>(3) relevant flight and cabin crew performance data;</p> <p>(4) available safety databases and scientific studies; and</p> <p>(5) analysis of planned versus actual time worked.</p> <p>(c) Reactive</p> <p>The reactive process should identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. At a minimum, the process may be triggered by any of the following:</p> <p>(1) fatigue reports;</p>		
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- (2) confidential reports;
- (3) audit reports;
- (4) incidents; or
- (5) flight data monitoring (FDM) events.

COMMERCIAL AIR TRANSPORT OPERATORS' RISK ASSESSMENT

An operator should develop and implement risk assessment procedures that determine the probability and potential severity of fatigue-related events and identify when the associated risks require mitigation. The risk assessment procedures should review identified hazards and link them to:

- (a) operational processes;
- (b) their probability;
- (c) possible consequences; and
- (d) the effectiveness of existing safety barriers and controls.

(5) a **risk mitigation** process that provides for remedial actions to be implemented promptly, which are 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;

AMC<sub>1</sub> ORO.FTL.120 (b)(5) CAT OPERATORS' RISK MITIGATION

An operator should develop and implement risk mitigation procedures that:

- (a) select the appropriate mitigation strategies;
- (b) implement the mitigation strategies; and
- (c) monitor the strategies' implementation and effectiveness.

(6) FRM **safety assurance** processes;

AMC<sub>1</sub> ORO.FTL.120 (b)(8) (...should read (b)(6)!)

COMMERCIAL AIR TRANSPORT OPERATORS'  
FRM SAFETY ASSURANCE PROCESSES

The operator should develop and maintain FRM safety assurance processes to:

- (a) provide for continuous FRM performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:
  - (1) hazard reporting and investigations;
  - (2) audits and surveys; and
  - (3) reviews and fatigue studies;

<p>(b) provide a formal process for the management of change which should include, but is not limited to:</p> <ul style="list-style-type: none"> <li>(1) identification of changes in the operational environment that may affect FRM;</li> <li>(2) identification of changes within the organisation that may affect FRM; and</li> <li>(3) consideration of available tools which could be used to maintain or improve FRM performance prior to implementing changes; and</li> </ul> <p>(c) provide for the continuous improvement of FRM. This should include, but is not limited to:</p> <ul style="list-style-type: none"> <li>(1) the elimination and/or modification of risk controls have had unintended consequences or that are no longer needed due to changes in the operational or organisational environment;</li> <li>(2) routine evaluations of facilities, equipment, documentation and procedures; and</li> <li>(3) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.</li> </ul> <p><b>(7) FRM promotion processes.</b></p> <p>AMC<sub>1</sub> ORO.FTL.120 (b)(g) (...should read (b)(7)!)  COMMERCIAL AIR TRANSPORT OPERATORS'  FRM PROMOTION PROCESS</p> <p>FRM promotion processes should support the on-going development of FRM, the continuous improvement of its overall performance, and attainment of optimum safety levels.</p> <p>The following should be established and implemented by the operator as part of its FRM:</p> <ul style="list-style-type: none"> <li>(a) training programmes to ensure competency commensurate with the roles and responsibilities of management, flight and cabin crew, and all other involved personnel under the planned FRM; and</li> <li>(b) an effective FRM communication plan that: <ul style="list-style-type: none"> <li>(1) explains FRM policies, procedures and responsibilities to all relevant stakeholders; and</li> <li>(2) describes communication channels used to gather and disseminate FRM-related information</li> </ul> </li> </ul> <p>(c) The <b>FRM shall correspond</b> to the flight time specification scheme, the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in those activities and the applicable flight time specification scheme.</p>		
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<p>(d) The operator shall take <b>mitigating actions</b> when the FRM safety assurance process shows that the required safety performance is not maintained.</p>		
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**ORO.FTL.125 Flight Time Specification Schemes**

<p>(a) 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, this Subpart and other applicable legislation, including Directive 2000/79/EC.</p> <p>(b) Before being implemented, flight time specification schemes, including any related FRM where required, shall be approved by the competent authority.</p> <p>(c) To demonstrate 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 from those certification specifications in accordance with Article 22(2) of Regulation (EC) No. 216/2008, it shall provide the competent authority with a full description of the intended deviation prior to implementing it. The description shall include any revisions to manuals or procedures that may be rele-</p>	<p>Directive 2000/79/EC          Clause 8</p> <ol style="list-style-type: none"> <li>1. Working time should be looked at without prejudice to any future Community legislation on flight and duty time limitations and rest requirements and in conjunction with national legislation on this subject which should be taken into consideration in all related matters.</li> <li>2. The maximum annual working time, including some elements of standby for duty assignment as determined by the applicable law, shall be 2 000 hours in which the block flying time shall be limited to 900 hours.</li> <li>3. The maximum annual working time shall be spread</li> </ol>	<p><b>FAQ – ORO.FTL.115</b></p> <p><i>The accumulation of fatigue and building accumulated fatigue depends on many aspects but certainly not on the legal type of operation (air taxi, line, cargo...)</i></p> <p><i>Thus any mixed operation should meet ORO.FTL.125 in its entirety for the purpose to meet a sufficient level of alertness.</i></p> <p><i>Since operational aspect are typically different from operator to operator, an individual flight time specification scheme cannot be transferred without further proof.</i></p>
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<p>vant, as well as an assessment demonstrating that the requirements of Regulation (EC) No. 216/2008 and of this Subpart are met.</p> <p>(d) For the purpose of point ARO.OPS.235 (d), within 2 years of the implementation of a deviation or derogation, the operator shall collect data concerning the granted deviation or derogation and analyse that data using scientific principles with a view to assessing the effects of the deviation or derogation on aircrew fatigue. Such analysis shall be provided in the form of a report to the competent authority.</p>	<p>as evenly as practicable throughout the year.</p> <p>Clause 9</p> <p>Without prejudice to Clause 3, mobile staff in civil aviation shall be given days free of all duty and standby, which are notified in advance, as follows:</p> <p>(a) at least seven local days in each calendar month, which may include any rest periods required by law; and</p> <p>(b) at least 96 local days in each calendar year, which may include any rest periods required by law.</p>	<p><i>Latest ORO.FTL.125(d) requests the provision and analysis of individual data.</i></p>
<p><b>ORO.FTL.200 Home Base</b></p>		
<p>An operator shall assign a home base to each crew member.</p>		
<p><b>CS FTL.1.200 Home Base</b></p>		
<p>(a) The home base is a single airport location assigned with a high degree of permanence.</p> <p>(b) In the case of a change of home base, the first recurrent extended recovery rest period prior to starting duty at the new home base is increased to 72 hours, including 3 local nights. Travelling time between the former home base and the new home base is positioning.</p> <p>GM<sub>1</sub> CS FTL.1.200</p> <p>TRAVELLING TIME</p>		<p><b>FAQ – ORO.FTL.1.200</b></p> <p><i>Any crew member has only one home base at a time which is equivalent to one airport.</i></p> <p><i>Any departure from another airport is either part of a roster that started at the</i></p>

Crew members should consider making arrangements for temporary accommodation closer to their home base if the travelling time from their residence to their home base usually exceeds 90 minutes.

home base or CS FTL.1.200 has to be observed.

**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);

GM1 ORO.FTL.205(a)(1)

**REPORTING TIMES**

The operator should specify reporting times taking into account the type of operation, the size and type of aircraft and the reporting airport conditions.

(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 concerned, 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 be in accordance with the following table:

(...see next column → Table 2)

Table 2  
Maximum daily FDP – acclimatised crewmembers

Start of FDT at reference time	Sectors									
	1 - 2	3	4	5	6	7	8	9	10	
06:00 - 13:29	13:00	12:30	12:00	11:30	11:00	10:30	10:00	09:30	09:00	
13:30 - 13:59	12:45	12:15	11:45	11:15	10:45	10:15	09:45	09:15		
14:00 - 14:29	12:30	12:00	11:30	11:00	10:30	10:00	09:30			
14:30 - 14:59	12:15	11:45	11:15	10:45	10:15	09:45	09:15			
15:00 - 15:29	12:00	11:30	1:00	10:30	10:00	09:30				
15:30 - 15:59	11:45	11:15	10:45	10:15	09:45	09:15				
16:00 - 16:29	11:30	11:00	10:30	10:00	09:30					
16:30 - 16:59	11:15	10:45	10:15	09:45	09:15					
17:00 - 04:59	11:00	10:30	10:00	09:30	09:00					
05:00 - 05:14	12:00	11:30	11:00	10:30	10:00	09:30				
05:15 - 05:29	12:15	11:45	11:15	10:45	10:15	09:45	09:15			
05:30 - 05:44	12:30	12:00	11:30	11:00	10:30	10:00	09:30			
05:45 - 05:59	12:45	12:15	11:45	11:15	10:45	10:15	09:45	09:15		

REFERENCE TIME

The start time of the FDP in the table refers to the 'reference time'. That means, to the local time of the point of departure, if this point of departure is within a 2-hour wide time zone band around the local time where a crew member is acclimatised.

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

(...see next column → Table 3)

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

(...see next column → Table 4)

Table 3  
Crewmembers 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		

Table 4 - Crewmembers in an unknown state of acclimatisation under FRM

**FRM** – The values in the following table 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

**FAQ – ORO.FTL.205(b)(3)**

The 1-hour step from Table 3 to Table 4 is only allowed under FRM which next to the general tasks of an FRM(S) explicitly analyses data for each route (i.e. city pairing, type of A/C, daytime of schedule, crew complement, rotation, rostering) for the purpose of risk mitigation and fatigue avoidance.

**(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 sector or series of sectors, 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 1 hour. 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 for acclimatised crew members with the use of extensions without in-flight rest:**

(1) The maximum daily FDP may be extended by up to 1 hour not more than twice in any 7 consecutive days. In that case:

(i) the minimum pre-flight and post-flight rest periods shall be increased by 2

**FAQ – ORO.FTL.205(c)**  
→ see: **FAQ – ORO.FTL.110(c)**

**FAQ – ORO.FTL.205 (d)**

**Clarification in progress...**  
“twice in any consecutive days” – wording is ambiguous:  
Which event triggers the use of an extension or “To which day does an extension belong to?” → begin of the FDP; i.e. reporting?  
...suggest to add GM!

← (d) The restriction under EU OPS of a limited use of extensions (without in-flight rest) of up to a maximum of 2 within 7 consecutive days prevails; however, a similar restriction on extensions due to in-flight rest does not exist.

← (i) EU OPS used to limit the use of extensions to up

<p>hours; or</p> <p>(ii) the post-flight rest period shall be increased by 4 hours.</p> <p>(2) When extensions are used for consecutive FDPs, the additional pre- and post-flight rest between the two extended FDPs required under subparagraph 1 shall be provided consecutively.</p> <p>(3) The use of the extension shall be planned in advance, and shall be limited to a maximum of:</p> <p>(i) 5 sectors when the WOCL is not encroached; or</p> <p>(ii) 4 sectors, when the WOCL is encroached by 2 hours or less; or</p> <p>(iii) 2 sectors, when the WOCL is encroached by more than 2 hours.</p> <p>(4) 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.</p> <p>(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:</p> <p>(i) the number of sectors flown; and</p> <p>(ii) WOCL encroachment.</p> <p><b>(e) Maximum daily FDP with the use of extensions due to in-flight rest</b></p> <p>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:</p> <p>(i) the number of sectors flown;</p> <p>(ii) the minimum in-flight rest allocated to each crew member;</p> <p>(iii) the type of in-flight rest facilities; and</p> <p>(iv) the augmentation of the basic flight crew.</p> <p><b>(f) Unforeseen circumstances in flight operations — commander’s discretion</b></p> <p>(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:</p> <p>(i) the maximum daily FDP which results after applying points (b) and (e) of</p>	<p>to 6 sectors; however, ...</p> <p>...the limit to 4 (ii) and 2 (iii) sectors remains the same.</p> <p>←(3) According to the FAQs the extension must not be published in the roster but pre planning is required. For the purpose of clarity, it should be published anyway since already the planned use of an extension triggers additional rest.</p> <p>←(4) A combination was always prohibited.</p> <p>← (5) NOTE: CS.FTL.1.205 (...see page 20) limits the availability of extensions for night duties significantly:</p> <p>This limitation shall be understood as the application of ORO.FTL.205 (d)(5) under the aspect of safety mitigation.</p> <p>← (i) ORO.FTL.205 (b) → basic maximum daily FDP (e) → in-flight rest</p>	<p>According to (d)(3) an extension does not need to be published; however, an operator must enable his crew members to plan adequate rest.</p> <p>Thus for a rotation with an increased instability an operator may plan an additional buffer by using an extension to the FDT limit; in this case all rest requirements must be met in advance as well. Should a post-flight analysis show that an extension has not been necessary it does not need to be counted towards the 2-in-7 limit.</p> <p>The rest provisions should only be changed again as long as it does not impact the crew members ability to plan adequate rest.</p> <p><b>FAQ – ORO.FTL.205(d)+(e)</b></p> <p><i>There is neither a restriction on the number of extensions due to in-flight rest within any specific time frame nor a restriction on the combination with an extended FDP according to ORO.FTL.205 (d)</i></p> <p><b>BASICS (Commander’s Discretion)</b></p> <p>“Commander’s discretion (CD)” provides an opportunity to extend an actual FDP beyond the applicable maximum allowable FDP. It does not apply to a planned FDP as published in a roster; i.e. due to unforeseen circumstances a planned FDP may be extended up to the max. FDP without “CD”. is applied after a recalculation of the max. However, “CD” may provide much less flexibility than anticipated. “CD” applies</p>
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<p>point ORO.FTL.205 or point 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;</p> <p>GM1 ORO.FTL.205 (f)(1)(i) <span style="float: right;">COMMANDER'S DISCRETION</span></p> <p>The maximum basic daily FDP that results after applying ORO.FTL.205 (b) should be used to calculate the limits of commander's discretion, if commander's discretion is applied to an FDP which has been extended under the provisions of ORO.FTL.205 (d).</p> <p>(ii) if on the final sector within an FDP the allowed increase is exceeded because of unforeseen circumstances after take-off, the flight may continue to the planned destination or alternate aerodrome; and</p> <p>(iii) the rest period following the FDP may be reduced but can never be less than 10 hours.</p> <p>(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.</p> <p>(3) The commander shall consult all crew members on their alertness levels before deciding the modifications under subparagraphs 1 and 2.</p> <p>(4) The commander shall submit a report to the operator when an FDP is increased or a rest period is reduced at his or her discretion.</p> <p>(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 by the operator to the competent authority not later than 28 days after the event</p> <p>(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.</p> <p>AMC1 ORO.FTL.205(f) <span style="float: right;">UNFORESEEN CIRCUMSTANCES IN ACTUAL FLIGHT OPERATIONS – COMMANDER'S DISCRETION</span></p> <p>(a) As general guidance when developing a commander's discretion policy, the operator should take into consideration the shared responsibility of management, flight and cabin crew in the case of unforeseen circumstances. The exercise of commander's discretion should be considered exceptional and should be avoided at home base and/or company hubs where standby or reserve crew</p>	<p>ORO.FTL.220 → split duty</p>	<p>to the basic limits. Further, changed conditions due to an extra sector may shorten the length of the previous maximum FDP. Be aware that The resulting limit could be only as little as 30 minutes above the original limit. That is, when the initial planning was done according to ORO.FTL.205 (d):</p> <p>ORO.FTL.205 (f)(i) refers to an FDP after applying points (b) or (e) - thus it excludes point (d); i.e. the one-hour extension. This means, that an FDP extended according to point (d) may under "CD" only be extended by a maximum of one hour (i.e. as a basic FDP extended by max. 2 hours)</p> <p>→ see GM1 ORO.FTL.205 (f)(1)(i)</p>
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<p>members should be available. Operators should assess on a regular basis the series of pairings where commander's discretion has been exercised in order to be aware of possible inconsistencies in their rostering.</p> <p>(b) The operator's policy on commander's discretion should state the safety objectives, especially in the case of an extended FDP or reduced rest and should take due consideration of additional factors that might decrease a crew member's alertness levels, such as:</p> <ul style="list-style-type: none"> <li>(1) WOCL encroachment;</li> <li>(2) weather conditions;</li> <li>(3) complexity of the operation and/or airport environment;</li> <li>(4) aeroplane malfunctions or specifications;</li> <li>(5) flight with training or supervisory duties;</li> <li>(6) increased number of sectors;</li> <li>(7) circadian disruption; and</li> <li>(8) individual conditions of affected crew members (time since awake, sleep-related factor, workload, etc.).</li> </ul> <p><b>(g) Unforeseen circumstances in flight operations — delayed reporting</b></p> <p>The operator shall establish procedures, in the operations manual, for delayed reporting in the event of unforeseen circumstances, in accordance with the certification specifications applicable to the type of operation.</p>	<p>← (g) new &gt; delayed reporting – details shall be stated in the OM.</p> <p>→ see CS.FTL.1.205 (d)</p>	
<p>CS FTL.1.205 Flight Duty Period (FDP)</p>		
<p><b>(a) Night duties under the provisions of ORO.FTL.205 (b) and (d) comply with the following:</b></p> <p>(1) When establishing the maximum FDP for <b>consecutive night duties</b>, the number of sectors is limited to 4 sectors per duty.</p> <p>(2) The operator applies <b>appropriate fatigue risk management</b> to actively manage the fatiguing effect of night duties of more than 10 hours in relation to the surrounding duties and rest periods.</p> <p>GM<sub>1</sub> CS FTL.1.205 (a)(2)</p> <p style="text-align: center;">NIGHT DUTIES – APPROPRIATE FATIGUE RISK MANAGEMENT</p> <p>(a) When rostering night duties of more than 10 hours (referred to below as 'long night duties'), it is critical for the crew member to obtain sufficient sleep before such duties when he/she is adapted to being awake during day time hours at the local time where he/she is acclimatised. To optimise alertness on</p>	<p>← (1) NEW &gt; limit on consecutive night duties</p> <p style="text-align: center;"><b>check FAQ → !!!acclimatised!!!</b></p> <p>← (GM<sub>1</sub> CS FTL.1.205(a)(2))</p> <p>To clarify what is required it may help to see the purpose and the differences. An approved FRM follows the request for a deviation from existing rules. In this line an operator is held to continuously prove that his operation meets the requirement for an equivalent</p>	<p><b>FAQ – CS.FTL.1.205(a)</b></p> <p><i>Two night duties separated by anything but a single rest period (less than RECreSt) would not be considered "consecutive".</i></p> <p><b>FAQ – CS.FTL.1.205(a)(1)</b></p> <p><i>An approved FRM according to ORO.FTL.120 is not required.</i></p> <p style="background-color: red; color: black; text-align: center;"><b>Clarification in progress...</b></p>

long night duties, the likelihood of obtaining sleep as close as possible to the start of the FDP should be considered, when rostering rest periods before long night duties, by providing sufficient time to the crew member to adapt to being awake during the night. Rostering practices leading to extended wakefulness before reporting for such duties should be avoided. Fatigue risk management principles that could be applied to the rostering of long night duties may include:

- (1) avoiding long night duties after extended recovery rest periods
- (2) progressively delaying the rostered ending time of the FDPs preceding long night duties;
- (3) starting a block of night duties with a shorter FDP; and
- (4) avoiding the sequence of early starts and long night duties.

(b) Fatigue risk management principles may be applied to the rostering of long night duties by means of:

- (1) considering operator or industry operational experience and data collected on similar operations;
- (2) evidence-based scheduling practices; and
- (3) bio-mathematical models.

#### (b) Extension of FDP without in-flight rest

The extension of FDP without in-flight rest under the provisions of ORO.FTL.205 (d)(5) is limited to the values specified in the table below.

(...see next column → Maximum daily FDP with extension)

#### (c) Extension of FDP due to in-flight rest

In-flight rest facilities in accordance with ORO.FTL.205 (e)(iii) fulfil the following minimum standards:

- **'Class 1 rest facility'** means a bunk or other surface that allows for a flat or near flat sleeping position. It reclines to at least 80° back angle to the vertical and is located separately from both the flight crew compartment and the passenger cabin in an area that allows the crew member to control light, and provides isolation from noise and disturbance;
- **'Class 2 rest facility'** means a seat in an aircraft cabin that reclines at least 45° back angle to the vertical, has at least a pitch of 55 inches (137.5 cm), a seat width of at least 20 inches (50 cm) and provides leg and foot support. It is separated from passengers by at least a curtain to provide darkness and some sound mitigation, and is reasonably free from disturbance by passengers or crew members;
- **'Class 3 rest facility'** means a seat in an aircraft cabin or flight crew compartment that reclines at least 40° from the vertical, provides leg

level of safety as give by this regulation and associated regulative material. Such a prove requires extensive preparation, analysis and organisational processes.

Long night duties beyond 10 hours however need mitigation measures which help to avoid undue levels of fatigue and a monitoring process to prove, that no undue level of fatigue is ever exceeded. Otherwise action needs to be taken.

Thus a flight oriented risk analysis, pairing oriented data acquisition, data analysis and finding oriented management processes should be implemented.

The scope of the processes should be in relation to the magnitude/complexity of the operation and identified potential risk.

#### Maximum daily FDP with extension

Start of FDT at reference time	Sectors			
	1 - 2	3	4	5
06:15 - 06:29	13:15	12:45	12:15	11:45
06:30 - 06:44	13:30	13:00	12:30	12:00
06:45 - 06:59	13:45	13:15	12:45	12:15
07:00 - 13:29	14:00	13:30	13:00	12:30
13:30 - 13:59	13:45	13:15	12:45	
14:00 - 14:29	13:30	13:00	12:30	
14:30 - 14:59	13:15	12:45	12:15	
15:00 - 15:29	13:00	12:30	12:00	
15:30 - 15:59	12:45			
16:00 - 16:29	12:30			
16:30 - 16:59	12:15			
17:00 - 17:29	12:00			
17:30 - 17:59	11:45			
18:00 - 18:29	11:30			
18:30 - 18:59	11:15			
19:00 - 06:14				

not allowed

**FRM** – the scope of “appropriate FRM” which is required for night duties exceeding 10 hours needs to be determined. Even the guidance material foresees...

- operational experience
- evidence-based practices

or

- bio-mathematical models

...rather as alternatives than as necessary supplemental methods and seems to see FRM principles as sufficient.

#### BASICS (extensions)

The table limits the use of extensions significantly. This limitation shall be understood as the consideration of ORO.FTL.205 (d)(5) under the aspect of safety mitigation; thus parts of the restricted area (>not allowed<) may eventually become available with an FRM and proper mitigation measures in place.

#### FAQ – CS.FTL.1.205(b)+(c)

*The maximum duration of an FDP with augmented crew is established for the entire crew, not for individual crew members; the crew is considered a unit for the calculation of the maximum FDP.*

→ see also CS.FTL.1.205(c)(7)

and foot support and is separated from passengers by at least a curtain to provide darkness and some sound mitigation, and is not adjacent to any seat occupied by passengers.

(1) The extension of FDP with in-flight rest under the provisions of ORO.FTL.205 (e) complies with the following:

- (i) the FDP is limited to 3 sectors; and
- (ii) the minimum in-flight rest period is a consecutive 90-minute period for each crew member and 2 consecutive hours for the flight crew members at control during landing.

GM1 CS FTL.1.205(c)(1)(ii)

IN-FLIGHT REST

In-flight rest should be taken during the cruise phase of the flight.

GM2 CS FTL.1.205(c)(1)(ii)

IN-FLIGHT REST

In-flight rest periods should be allocated in order to optimise the alertness of those flight crew members at control during landing.

(2) The maximum daily FDP under the provisions of ORO.FTL.205 (e) may be extended due to in-flight rest for flight crew:

- (i) with one additional flight crew member:
  - (A) up to 14 hours with class 3 rest facilities;
  - (B) up to 15 hours with class 2 rest facilities; or
  - (C) up to 16 hours with class 1 rest facilities;
- (ii) with two additional flight crew members:
  - (A) up to 15 hours with class 3 rest facilities;
  - (B) up to 16 hours with class 2 rest facilities; or
  - (C) up to 17 hours with class 1 rest facilities.

(3) The minimum in-flight rest for each cabin crew member is:  
 (...see next column → Min. in-flight rest for each cabin crew member)

(4) The limits specified in (2) may be increased by 1 hour for FDPs that include 1 sector of more than 9 hours of continuous flight time and a maximum of 2 sectors.

(5) All time spent in the rest facility is counted as FDP.

(6) The minimum rest at destination is at least as long as the preceding duty

Min. in-flight rest for each **cabin crew member**

Maximum extended FDP	Minimum in-flight rest (in hours)		
	Class 1	Class 2	Class 3
...up to 14:30	1:30	1:30	1:30
14:31 - 15:00	1:45	2:00	2:20
15:01 - 15:30	2:00	2:20	2:40
15:31 - 16:00	2:15	2:40	3:00
16:01 - 16:30	2:35	3:00	
16:31 - 17:00	3:00	3:25	
17:01 - 17:30	3:25	Not allowed	
17:31 - 18:00	3:50		

period, or 14 hours, whichever is greater.

(7) A crew member does not start a positioning sector to become part of this operating crew on the same flight.

**(d) Unforeseen circumstances in flight operations — delayed reporting**

(1) The operator may delay the reporting time in the event of unforeseen circumstances, if procedures for delayed reporting are established in the operations manual. The operator keeps records of delayed reporting. Delayed reporting procedures establish a notification time allowing a crew member to remain in his/her suitable accommodation when the delayed reporting procedure is activated. In such a case, if the crew member is informed of the delayed reporting time, the FDP is calculated as follows:

(i) one notification of a delay leads to the calculation of the maximum FDP according to (iii) or (iv);

(ii) if the reporting time is further amended, the FDP starts counting 1 hour after the second notification or at the original delayed reporting time if this is earlier;

(iii) when the delay is less than 4 hours, the maximum FDP is calculated based on the original reporting time and the FDP starts counting at the delayed reporting time;

(iv) when the delay is 4 hours or more, the maximum FDP is calculated based on the more limiting of the original or the delayed reporting time and the FDP starts counting at the delayed reporting time;

(v) as an exception to (i) and (ii), when the operator informs the crew member of a delay of 10 hours or more in reporting time and the crew member is not further disturbed by the operator, such delay of 10 hours or more counts as a rest period.

GM1 CS FTL.1.205 (d)

DELAYED REPORTING

Operator procedures for delayed reporting should:

- (a) specify a contacting mode;
- (b) establish minimum and maximum notification times; and
- (c) avoid interference with sleeping patterns when possible.

NOTE: As long as a flight is not operated under the provisions of CS.FTL 1.205 (c) the crew rest may still be used without observing the table above.

**FAQ – CS.FTL.205(d)(1)**

*A delayed reporting time is the 'new' reporting time. A concrete reporting time must be given when the crew member is informed that the delayed reporting procedure is activated.*

*Thus an unspecific "...next INFO at" procedure is not allowed.*

*Further, the general purpose of Standby is not designed to substitute "delayed reporting".*

**Clarification in progress...**

*However, it should be clarified whether standby may be assigned out of delayed reporting.*

**ORO.FTL.210 Flight Times and Duty Periods**

<p>(a) The <b>total duty periods</b> to which a crew member may be assigned shall not exceed:</p> <p>(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 that period.</p> <p>(b) The <b>total flight time</b> of the sectors on which an individual crew member is assigned as an operating crew member shall not exceed:</p> <p>(1) 100 hours of flight time in any 28 consecutive days;  (2) 900 hours of flight time in any calendar year; and  (3) 1.000 hours of flight time in any 12 consecutive calendar months.</p> <p>(c) <b>Post-flight duty</b> shall count as duty period. The operator shall specify in its operations manual the minimum time period for post-flight duties.</p> <p>AMC<sub>1</sub> ORO.FTL.210(c)</p> <p style="text-align: right;">POST-FLIGHT DUTIES</p> <p>The operator should specify post-flight duty times taking into account the type of operation, the size and type of aircraft and the airport conditions.</p>	<p>← (a) same schematic as under EU OPS – 14-days limit added.</p> <p>← (b) same schematic as under EU OPS – limit for a rolling period of 12 months added.</p> <p>← (c) post-flight duties specifically referred to as part of the duty period. (...see also ORO.FTL.110 (c))</p>	
<p><b>ORO.FTL.215 Positioning</b> ⇒ <b>If an operator positions a crew member, the following shall apply...</b></p>		
<p>(a) <b>positioning after reporting</b> but prior to operating shall be counted as FDP but shall not count as a sector;</p> <p>(b) all <b>time spent on positioning</b> shall count as duty period.</p>	<p><b>FAQ – CS.FTL.215</b>  <i>For the purpose of FTL limits is never counted as a sector. A flight duty period which comprises positioning starts with reporting for that duty period.</i></p>	
<p><b>ORO.FTL.220 Split Duty</b> ⇒ <b>The conditions for extending the basic maximum FDP due to a break on the ground shall be in accordance with the following...</b></p>		
<p>(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:</p> <p>(1) the minimum duration of a break on the ground; and  (2) the possibility to extend the FDP prescribed under point ORO.FTL.205(b) taking into account the duration of the break on the ground, the facilities</p>	<p>Neither the regulation nor the associated certification specifications or other material clearly limit the number of breaks on the ground.</p> <p>However, the operator’s general responsibility along with the limits related to ORO.FTL.220 require a thorough analysis whether under fatigue aspects a FDP</p>	<p style="background-color: red; color: white; padding: 5px;"><b>Clarification in progress...</b></p> <p><b>FAQ – CS.FTL.220</b></p>

<p>provided to the crew member to rest and other relevant factors;</p> <p>(b) the break on the ground shall count in full as FDP;</p> <p>(c) split duty shall not follow a reduced rest.</p>	<p>with multiple breaks can be acceptable. To a minimum, the type of operation, location of the brake, quality of the facilities, ability to acquire sleep and a limit of 18 hrs. of time of wakefulness must be considered. Further, FRM principles are advisable.</p>	<p><b>Q:</b> May a FDP contain more than one brake on the ground?</p> <p><b>A:</b> ...(pending)</p>
<p>CS FTL.1.220 Split Duty ⇒ The increase of limits on flight duty, under the provisions of ORO.FTL.220, complies with the following...</p>		
<p>(a) The break on the ground within the FDP has a minimum duration of 3 consecutive hours.</p> <p>(b) The break excludes the time allowed for post and pre-flight duties and travelling. The minimum total time for post and pre-flight duties and travelling is 30 minutes. The operator specifies the actual times in its operations manual.</p> <p>(c) The maximum FDP specified in ORO.FTL.205(b) may be increased by up to 50 % of the break.</p> <p>(d) Suitable accommodation is provided either for a break of 6 hours or more or for a break that encroaches the window of circadian low (WOCL).</p> <p>(e) In all other cases:</p> <p>(1) accommodation is provided; and</p> <p>(2) any time of the actual break exceeding 6 hours or any time of the break that encroaches the WOCL does not count for the extension of the FDP.</p> <p>(f) Split duty cannot be combined with in-flight rest.</p> <p><b>GM1 CS FTL.1.220 (b)</b></p> <p style="text-align: center;"><b>POST, PRE-FLIGHT DUTY AND TRAVELLING TIMES</b></p> <p>The operator should specify post and pre-flight duty and travelling times taking into account aircraft type, type of operation and airport conditions.</p>	<p>← (d) + (e) Under EU OPS subject to national regulation:</p> <p>➤ note the difference between "suitable accommodation" and "accommodation"; i.e. (c) vs. (d)</p> <p>← GM: see also ORO.FTL.110 (c) + ORO.FTL.210 (c)</p>	<p style="background-color: red; color: black; text-align: center;"><b>Clarification in progress...</b></p> <p><i>The intention of split duty is to provide an option for a break (which is less than a minimum rest period) within an FDP that would somewhat "stretch" the available FDP limit. The intention was to provide this option also for an FDP "though the night" i.e. an FDP that encroaches the WOCL.</i></p> <p><i>The present wording as it is written does not clearly state this intention:</i></p> <p><i>Presently...</i></p> <p><i>(d) suitable accommodation...</i></p> <p><i>...can be seen as only an additive to the given requirements for a break in excess of 6 hours or when in overlays the WOCL and...</i></p> <p><i>(e) in all other cases:</i></p> <p><i>...becomes the "general rule". As such (e)(2) becomes a general restricting clause not only limited to "accommodation" but also to "suitable accommodation". Further, since an encroachment to the WOCL does not count, a split duty at night would <b>never</b> extend the FDP limit.</i></p>



<p>(e) the operator shall provide accommodation to the crew member on airport standby;</p> <p>(f) flight time specification schemes shall specify the following elements...</p> <p>(1) the maximum duration of any standby;</p> <p>(2) the impact of the time spent on 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:</p> <ul style="list-style-type: none"> <li>➤ the need for immediate readiness of the crew member,</li> <li>➤ the interference of standby with sleep, and</li> <li>➤ sufficient notification to protect a sleep opportunity between the call for duty and the assigned FDP;</li> </ul> <p>(3) <b>the minimum rest period following standby</b> which does not lead to assignment of an FDP;</p> <p>(4) how time spent on standby other than airport standby shall be counted for the purpose of cumulative duty periods.</p>	<p>CS.FTL.1.225 (a)(2)(i) ... the FDP counts from the start of the FDP</p> <p>Whether the planned succeeding rest may be brought up or is simply extended by the reduction of the preceding standby is up to the crew members ability to plan adequate rest for the next FDP. →</p>	<p><i>Should the later be applied all time on standby airport would be "deducted" from the FDP limit which contradicts the CS.</i></p> <p><b>FAQ – ORO.FTL.225(a), GM1 CS FTL</b></p> <p><i>"Duties can be changed but the crew member has to be able to plan adequate rest."</i></p> <p><i>For a standby period, the beginning and the end must be rostered as well as a defined rest period following the standby. During standby either duty or the end of standby may be assigned.</i></p>
<p>CS FTL.1.225 Standby ⇒ The modification of limits on flight duty, duty and rest periods under the provisions of ORO.FTL.225 complies with the following:</p>		
<p><b>(a) Airport standby:</b></p> <p>(1) If not leading to the assignment of an FDP, airport standby is followed by a rest period as specified in ORO.FTL.235.</p> <p>(2) If an assigned FDP starts during airport standby, the following applies:</p> <p>(i) the FDP counts from the start of the FDP. The maximum FDP is reduced by any time spent on standby in excess of 4 hours;</p> <p>(ii) the maximum combined duration of airport standby and assigned FDP as specified in ORO.FTL.205(b) and (d) is 16 hours.</p> <p><b>(b) Standby other than airport standby:</b></p> <p>(1) the maximum duration of standby other than airport standby is 16 hours;</p> <p>(2) The operator's standby procedures are designed to ensure that the combination of standby and FDP do not lead to more than 18 hours awake time;</p> <p>GM1 CS FTL.1.225(b)(2)</p> <p style="text-align: right;">AWAKE TIME</p> <p>Scientific research shows that continuous awake in excess of 18 hours can reduce the alertness and should be avoided.</p>	<p>← (a) Within EU OPS details were left to the national regulation.</p> <p>NOTE: Already known from CAP 371 and some other regulations, the total duration of standby duty is limited.</p> <p>Even to CAP 371 the limitation on awake time is/was unknown. The limit – as comprehensive as it is – drives standby duties up in numbers, since the effectiveness of longer standby duties is significantly reduced.</p> <p><b>FAQ – CS.FTL.1.225</b></p> <p><b><i>A nap may only be used to overcome unexpected fatigue. The use of controlled rest should trigger a fatigue report.</i></b></p>	<p><b>Clarification in progress...</b></p> <p><i>Since airport standby must be scheduled in advance a planned FDP may not be converted to airport standby after reporting.</i></p> <p><b>FAQ – CS.FTL.1.225(a)(2)(ii)</b></p> <p><i>The cap of 16 (resp. 18) hours is not applicable if other mitigating measures are provided (such as in-flight rest, split duty...) With an in-flight rest facility available and used the 18 hours awake time limit is considered not to be limiting.</i></p> <p><b><i>Napping is only acceptable in regards to unforeseen circumstances and does not</i></b></p>

<p>(3) 25% of time spent on standby other than airport standby counts as duty time for the purpose of ORO.FTL.210;</p> <p>(4) standby is followed by a rest period in accordance with ORO.FTL.235;</p> <p>(5) standby ceases when the crew member reports at the designated reporting point;</p> <p>(6) if standby ceases within the first 6 hours, the maximum FDP counts from reporting;</p> <p>(7) if standby ceases after the first 6 hours, the maximum FDP is reduced by the amount of standby time exceeding 6 hours;</p> <p>(8) if the FDP is extended due to in-flight rest according to CS FTL.1.205(c), or to split duty according to CS FTL.1.220, the 6 hours of paragraph (6) and (7) are extended to 8 hours;</p> <p>(9) if standby starts between 23:00 and 07:00, the time between 23:00 and 07:00 does not count towards the reduction of the FDP under (6), (7) and (8) until the crew member is contacted by the operator; and</p> <p>(10) the response time between call and reporting time established by the operator allows the crew member to arrive from his/her place of rest to the designated reporting point within a reasonable time.</p> <p>GM1 CS FTL.1.225 (b)</p> <p style="text-align: center;">STANDBY OTHER THAN AIRPORT STANDBY NOTIFICATION</p> <p>Operator procedures for the notification of assigned duties during standby other than airport standby should avoid interference with sleeping patterns if possible.</p> <p>GM1 CS FTL.1.225</p> <p style="text-align: center;">MINIMUM REST AND STANDBY</p> <p>(a) If airport or other standby initially assigned is reduced by the operator during standby that does not lead to an assignment to a flight duty period, the minimum rest requirements specified in ORO.FTL.235 should apply.</p> <p>(b) If a minimum rest period as specified in ORO.FTL.235 is provided before reporting for the duty assigned during the standby, this time period should not count as standby duty.</p> <p>(c) Standby other than airport standby counts (partly) as duty for the purpose of ORO.FTL.210 only. If a crew member receives an assignment during standby other than airport standby, the actual reporting time at the designated reporting point should be used for the purpose of ORO.FTL.235.</p>	<p><i>The operator designs standby procedures in a way that makes unexpected fatigue unlikely by avoiding excessive awake times. The frequent use of controlled rest after having been called from standby other than airport standby could indicate that the standby procedure does not fulfil the expectation to avoid excessive awake times.</i></p> <p>GM1 CAT.OP.MPA.210 ...</p> <p>(c) Controlled rest taken in this way should not be considered to be part of a rest period for the purposes of calculating flight time limitations, nor used to justify any duty period. Controlled rest may be used to manage both sudden unexpected fatigue and fatigue that is expected to become more severe during higher workload periods later in the flight. Controlled rest is not related to fatigue management, which is planned before flight.</p> <p>Fatigue will always be a factor in flight operations. The target cannot be to avoid fatigue per se – in this case almost any kind of flight operation would have to terminate immediately – but to avoid undue fatigue for the purpose to achieve a situation oriented acceptable level of alertness. However, this acceptable level of alertness could vary from flight to flight, or – better worded – the required attention may vary from flight to flight due to individual occurrences and external circumstances. From an operational as well as from a safety point of view and restricted to individual flights it could be quite reasonable to use napping as a strategic tool to raise the all-over safety level even without the presence of sudden or unexpected fatigue but rather because of unexpected demand.</p>	<p><i>lift the limit. Rather the opposite – excessive napping may be an indicator for an insufficient standby procedure.</i></p> <p><b>FAQ – CS.FTL.1.225(b)</b></p> <p><i>Time between notification and reporting is considered Standby. If a rest period is provided between notification and reporting, only the time until notification of the assignment is counted as standby.</i></p> <p><b>FAQ – CS.FTL.1.225</b></p> <p><i>Any combined standby and airport standby must observe the most limiting result from both rule sets.</i></p> <p><i>A crew member should not be assigned an FDP starting after a standby period has ended. A rest period should start after the end of the standby; an extension of a standby period beyond the rostered finishing time is not foreseen in the rule.</i></p> <p><i>According to CAT.OP.MPA.210 (a)(3),</i></p> <p><i>during all phases of flight each flight crew member required to be on duty in the flight crew compartment shall remain alert. If a lack of alertness is encountered, appropriate countermeasures shall be used. If unexpected fatigue is experienced, a controlled rest procedure, organised by the commander, may be used if workload permits. Controlled rest taken in this way shall not be considered to be part of a rest period for purposes of calculating flight time limitations nor used to justify any extension of the duty period.</i></p>
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<p><b>ORO.FTL.230 ⇒ Reserve</b> If an operator assigns crew members to reserve, the following requirements shall apply in accordance with the certification specifications applicable to the type of operation:</p>		
<p>(a) reserve shall be in the roster;</p> <p>GM1 ORO.FTL.230 (a)</p> <p style="text-align: right;">ROSTERING OF RESERVE</p> <p>Including reserve in a roster, also referred to as 'rostering', implies that a reserve period that does not result in a duty period may not retrospectively be considered as part of a recurrent extended recovery rest period.</p> <p>(b) flight time specification schemes shall specify the following elements:</p> <p>(1) the maximum duration of any single reserve period;</p> <p>(2) the number of consecutive reserve days that may be assigned to a crew member.</p>		<p><b>FAQ – ORO.FTL.230</b></p> <p><i>ORO.FTL.230(a) states that reserve must be in the roster. The meaning of 'including reserve in the roster' is explained in GM1 ORO.FTL.230(a).</i></p> <p><i>Therefore, a reserve period that does not result in a duty period <b>may not retroactively</b> be considered as part of a recurrent extended recovery rest period.</i></p>
<p><b>CS FTL.1.230 Reserve ⇒</b> The operator assigns duties to a crew member on reserve under the provisions of ORO.FTL.230 complying with the following:</p>		
<p>(a) An assigned FDP counts from the reporting time.</p> <p>(b) Reserve times do not count as duty period for the purpose of ORO.FTL.210 and ORO.FTL.235.</p> <p>(c) The operator defines the maximum number of consecutive reserve days within the limits of ORO.FTL.235(d).</p> <p>GM1 CS FTL.1.230(c)</p> <p style="text-align: right;">RECURRENT EXTENDED RECOVERY REST</p> <p>ORO.FTL.235 (d) applies to a crew member on reserve.</p> <p>(d) To protect an 8-hour sleep opportunity, the operator rosters a period of 8 hours, taking into account <b>fatigue management principles</b>, for each reserve day during which a crew member on reserve is not contacted by the operator.</p> <p>GM1 CS FTL.1.230</p> <p style="text-align: right;">RESERVE NOTIFICATION</p> <p>Operator procedures for the notification of assigned duties during reserve should avoid interference with sleeping patterns if possible.</p> <p>GM2 CS FTL.1.230</p> <p style="text-align: right;">NOTIFICATION IN ADVANCE</p> <p>The minimum 'at least 10 hours' between the notification of an assignment for any duty and reporting for that duty during reserve may include the period of 8</p>	<p><b>Clarification in progress...</b></p> <p>Ambiguous – does (d) refer to...</p> <p>(a) ...an 8-hour sleep opportunity during which a crew member is not contacted</p> <p>...or does it refer to...</p> <p>(b) ...reserve days during which a crew member is not contacted.</p> <p>(Tough though to know in advance on which reserve days the crew member will not be contacted ... ☺)</p> <p>Further: Would it be acceptable to assign this "8-hour sleep opportunity" to the notification period between notification time and reporting time for duty? Thus – whenever the operator contacts the crew member to assign a duty, the 8-hour period would start:</p> <p>Does the above described way of a "flexible" protection period meet the requirement to be able to plan rest?</p> <p>Does it meet the requirement to roster reserve?</p>	<p><b>FAQ – CS FTL.1.230(b)</b></p> <p><i>In accordance with CS FTL.1.230(b), reserve times do not count as duty period for the purpose of ORO.FTL.210 and ORO.FTL.235. That means that there is no requirement for a minimum rest period after reserve if no duty has been assigned.</i></p> <p><b>Clarification in progress...</b></p> <p><b>FRM</b> – the scope of "fatigue management principles" needs to be determined.</p> <p><b>FAQ</b></p> <p><i>'Reserve' and 'standby' allow for ad hoc assignments; however, duties may also be assigned through re-planning. Initially, the operator assigns duties by publishing a roster. A roster may be changed, however, rostered duties need to be published</i></p>

hours during which a crew member on reserve is not contacted by the operator.		in a way that allows crew members to plan adequate rest.
<b>ORO.FTL.235 Rest Periods</b>		
<p><b>(a) Minimum rest period at home base.</b></p> <p>(1) The minimum rest period provided before undertaking an FDP starting at home base shall be at least as long as the preceding duty period, or 12 hours, whichever is greater.</p> <p>(2) By way of derogation from point (1), the minimum rest provided under point (b) applies if the operator provides suitable accommodation to the crew member at home base.</p> <p>GM1 ORO.FTL.235 (a)(2)</p> <p style="text-align: center;">MINIMUM REST PERIOD AT HOME BASE IF SUITABLE ACCOMMODATION IS PROVIDED</p> <p>An operator may apply the minimum rest period away from home base during a rotation, which includes a rest period at a crew member's home base. This applies only if the crew member does not rest at his/her residence, or temporary accommodation, because the operator provides suitable accommodation. This type of roster is known as "back-to-back operation".</p> <p><b>(b) Minimum rest period away from home base.</b></p> <p>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.</p> <p>AMC1 ORO.FTL.235 (b)</p> <p style="text-align: center;">MINIMUM REST PERIOD AWAY FROM HOME BASE</p> <p>The time allowed for physiological needs should be 1 hour. Consequently, if the travelling time to the suitable accommodation is more than 30 minutes, the operator should increase the rest period by twice the amount of difference of travelling time above 30 minutes.</p> <p><b>(c) Reduced rest</b></p> <p>By derogation from points (a) and (b), flight time specification schemes may reduce the minimum rest periods in accordance with the certification specifications applicable to the type of operation and taking into account the following elements:</p>	<p>The regulation maintains the rest requirement given in EU OPS for the standard rest periods, but increases and improves the rules for the so-called "weekly rest", now called "recurrent extended recovery rest period".</p> <p>← (c) For "reduced rest" arrangements further restrictions/rules are given under CS.FTL.1.235</p>	<p><b>FAQ</b></p> <p><i>Planning and actual duty must comply with all requirements of this regulation. Thus, even office duty has to be considered according to actual times and not along predetermined times.</i></p> <p><b>FAQ – ORO.FTL.235(d)</b></p> <p><i>Q: Should it be allowed to exceed the 168 hrs. time frame which was planned to be taken during a rotation but shortened due to unexpected delay prior to the 36 hrs. rest period?</i></p> <p><i>Q: May a flight be continued to its destination even when it encroaches the planned recurrent extended recovery rest period?</i></p> <p><i>Considering ORO.FTL.205(f) the 168 hrs. period may not be extended under Commander's Discretion or any other mean except under an approved derogation.</i></p>

<p>(1) the minimum reduced rest period;  (2) the increase of the subsequent rest period;  (3) and the reduction of the FDP following the reduced rest.</p> <p><b>(d) Recurrent extended recovery rest periods</b></p> <p>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, and in any case the time between the end of one recurrent extended recovery rest period and the start of the next extended recovery rest period shall not be more than 168 hours. The recurrent extended recovery rest period shall be increased to 2 local days twice every month.</p> <p><b>(e)</b> Flight time specification schemes shall <b>specify additional rest periods</b> in accordance with the applicable certification specifications to compensate for:</p> <p>(1) the effects of time <b>zone differences</b> and extensions of the FDP;  (2) additional cumulative fatigue due to <b>disruptive schedules</b>; and  (3) a <b>change of home base</b>.</p>	<p>← (d) The so far so-called “weekly rest” became the... recurrent extended recovery rest period:</p> <p><b>RECCrest</b></p> <p>NEW &gt; The RECCrest needs to include 2 local days twice a month!</p> <p><b>Clarification in progress...</b></p> <p><b>CS.FTL.1.235(d)</b></p> <p><i>Does AMC1 ORO.FTL.235 (b) also apply?</i></p> <p><b>Clarification in progress...</b></p> <p><b>CS.FTL.1.235(d)</b></p> <p><i>Do 5 consecutive local nights satisfy the requirement for 2 local nights twice a month?</i></p>	<p><b>Room for discussion ...</b></p> <p>The first situation could cause a significant extension due to scheduling difficulties and eventually infringe succeeding local days free of duty given at the home base.</p> <p>Scientific findings show, that for best recovery and alertness layovers should respect the WOCL and be planned in a way, that a sleep period just prior departure is likely to be obtained. Thus a somewhat shorter period could still provide an equal and eventually even better recovery.</p> <p>Most likely it would be acceptable to include a modification of the RECCrest into “CD”. The option could be mitigated with a requirement to extend the next rest period to match the requirements for a RECCrest!</p>
<p>CS FTL.1.235 Rest Periods</p>		
<p><b>(a) Disruptive schedules</b></p> <p>(1) If a transition from a late finish/night duty to an early start is planned at home base, the rest period between the 2 FDPs includes 1 local night.</p> <p>(2) If a crew member performs 4 or more night duties, early starts or late finishes between 2 extended recovery rest periods as defined in ORO.FTL.235 (d), the second extended recovery rest period is extended to 60 hours.</p> <p><b>(b) Time zone differences</b></p> <p>(1) For the purpose of ORO.FTL.235 (e)(1), ‘rotation’ is a series of duties, including at least one flight duty, and rest period 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.</p> <p>(2) The operator monitors rotations and combinations of rotations in terms of their effect on crew member fatigue, and adapts the rosters as necessary.</p>	<p>NEW &gt; limitations on consecutive night duties and early starts/late finish!</p> <p>→ for definition see ORO.FTL.105 (8)</p> <p>NOTE: the transition rule does not apply after a duty which did not comprise a FDP; i.e. not after simulator or else...</p> <p>← (1) ...superfluous (?) since defined already under ORO.FTL.105 (22)</p> <p>(ref. i) Minimum local nights of rest at home base to compensate for time zone differences...</p>	<p><b>FAQ – CS FTL.1.235(a)(1)</b></p> <p><i>A duty can only be classified as disruptive if a crew member is acclimatised when reporting. No matter where the duty ends, the local time at the reporting point (i.e. “reference time”) shall be used as orientation to determine if a duty is ‘disruptive’.</i></p> <p><b>NOTE: The rule refers to “duty” not “flight duty”.</b></p> <p><b>BASICS (Time Zone Crossing)</b></p> <p>For the determination of rest, time zone crossing becomes significant when</p>

(3) Time zone differences are compensated by additional rest, as follows:

(i) At home base, if a rotation involves a 4 hour time difference or more, the minimum rest is as specified in the following table. Minimum local nights of rest at home base to compensate for time zone differences.

(...see next column → Minimum local nights of rest at home base to compensate for time zone differences.....)

(ii) Away from home base, if an FDP involves a 4-hour time difference or more, the minimum rest following that FDP is at least as long as the preceding duty period, or 14 hours, whichever is greater. By way of derogation from point (b)(3)(i) and only once between 2 recurrent extended recovery rest periods as specified in ORO.FTL.235 (d), the minimum rest provided under this point (b)(3)(ii) may also apply to home base if the operator provides suitable accommodation to the crew member.

GM1 CS FTL.1.235 (b)(3)

**TIME ELAPSED SINCE REPORTING**

The time elapsed since reporting for a rotation involving at least a 4-hour time difference to the reference time stops counting when the crew member returns to his/her home base for a rest period during which the operator is no longer responsible for the accommodation of the crew member.

(4) In case of an Eastward-Westward or Westward-Eastward transition, at least 3 local nights of rest at home base are provided between alternating rotations.

(5) The monitoring of combinations of rotations is conducted under the operator's **management system** provisions.

**(c) Reduced rest**

(1) The minimum reduced rest periods under reduced rest arrangements are 12 hours at home base and 10 hours out of base.

(2) Reduced rest is used under **fatigue risk management**.

(3) The rest period following the reduced rest is extended by the difference between the minimum rest period specified in ORO.FTL.235 (a) or (b) and the reduced rest.

(4) The FDP following the reduced rest is reduced by the difference between the minimum rest period specified in ORO.FTL.235 (a) or (b) as applicable and the reduced rest.

Maximum time difference (h) between reference time and local time where a crew member rests during a rotation	Time elapsed (h) since reporting for the first FDP in a rotation involving at least 4-hour time difference to the reference time			
	<48	48 - 71:59	72 - 95:59	≥ 96
≤ 6	2	2	3	3
> 6 and ≤ 9	2	3	3	4
> 9 and ≤ 12	2	3	4	5

Rest according to the table is provided after time zone crossing to achieve a re-synchronisation to the local time of the home base.

NOTE: Having been **acclimatized to home base and after a layover** with a time difference of >2 and <4 hours and a succeeding departure **out of home base** later than 48 hrs. after having left home base for the first time but within 48 hrs. after having left the layover time zone, reference time is still referenced to the **layover time zone**.

NOTE: In **principle**, Eastward-Westward or Westward-Eastward transition through the home base require extended rest periods independent from the number of time zones crossed or days away from home base.

However see...

FAQ – CS FTL.1.235(b)(4) →→→

(...limited to ≥6 hours → ≥4 hours independent of state of acclimatisation)

within one rotation a time difference of 4 hours or more between home base and place of rest away from home base was covered.

A rest period according to time zone crossing and a RECCrest period may run concurrently.

**Clarification in progress...**

**FAQ – CS.FTL.1.235(b)(3)(i)**

Table “Min. local nights...” clarification required for the use of “reference time” to outline that the “reference time at reporting for first duty” shall be used.

**Clarification in progress...**

**FAQ – CS.FTL.1.235(b)(3)(ii)**

Does AMC1 ORO.FTL.235 (b)( → physiological needs) also apply?

**FAQ – CS FTL.1.235(b)(4)**

...shall be understood as the transition through home base from a time zone difference of 6 or more to a time zone difference of 4 or more in opposite direction.

← (5) **SMS** – the scope of the “monitoring” needs to be determined.

<p>(5) There is a maximum of 2 reduced rest periods between 2 recurrent extended recovery rest periods specified in accordance with ORO.FTL.235 (d).</p>		<p>← (2) <i>FRM</i> – required for reduced rest.</p>
<p>ORO.FTL.240 Nutrition</p>		
<p>(a) During the FDP there shall be the opportunity for a meal and drink in order to avoid any detriment to a crew member's performance, especially when the FDP exceeds 6 hours.</p> <p>(b) An operator shall specify in its operations manual how the crew member's nutrition during FDP is ensured.</p> <p>AMC1 ORO.FTL.240</p> <p style="text-align: right;">MEAL OPPORTUNITY</p> <p>(a) The operations manual should specify the minimum duration of the meal opportunity, when a meal opportunity is provided, in particular when the FDP encompasses the regular meal windows (e.g. if the FDP starts at 11:00 hours and ends at 22:00 hours meal opportunities for two meals should be given).</p> <p>(b) It should define the time frames in which a regular meal should be consumed in order not to alter the human needs for nutrition without affecting the crew member's body rhythms.</p>	<p>← (b) ...rather important addition to the subject, since the operator needs to provide more details than under EU OPS → ORO.FTL.240 (b)</p> <p>AMC1 ORO.FTL.240 shall be understood as:</p> <p>The OM <b>must...</b></p> <p>...specify the minimum duration of the meal opportunity...</p> <p>...and how it considers the provision for a meal opportunity in its scheduling system.</p>	
<p>ORO.FTL.245 Records of Home Base, Flight Times, Duty and Rest Periods</p>		
<p><b>(a) An operator shall maintain, for a period of 24 months:</b></p> <p>(1) individual records for each crew member including:</p> <p>(i) flight times;</p> <p>(ii) start, duration and end of each duty period and FDP;</p> <p>(iii) rest periods and days free of all duties; and</p> <p>(iv) assigned home base;</p> <p>(2) reports on extended flight duty periods and reduced rest periods.</p> <p><b>(b) Upon request, the operator shall provide copies of individual records of flight times, duty periods and rest periods to:</b></p> <p>(1) the crew member concerned; and</p>		<p><b>FAQ – ORO.FTL.245</b></p> <p><i>Flying activities such as training and testing conducted outside the scope of an AOC have an impact on fatigue. Cumulative fatigue is accrued not only from CAT activities but also during other flying activities. Therefore, to control cumulative fatigue in accordance with CAT.GEN.MPA.100, the crew member shall:</i></p>

<p>(2) to another operator, in relation to a crew member who is or becomes a crew member of the operator concerned.</p> <p>(c) Records referred to in point CAT.GEN.MPA.100 (b)(5) in relation to crew members who undertake duties for more than one operator shall be kept for a period of 24 months.</p>		<p><i>“... (ii) provide each operator with the data needed to schedule activities in accordance with the applicable FTL requirements.”</i></p> <p><i>This is also reflected in ORO.FTL.115: Crew Member Responsibilities</i></p>
<p>ORO.FTL.250 Fatigue Management Training</p>		
<p>(a) The operator shall provide initial and recurrent fatigue management training to crew members, personnel responsible for preparation and maintenance of crew rosters and management personnel concerned.</p> <p>(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.</p> <p>AMC<sub>1</sub> ORO.FTL.250 TRAINING SYLLABUS <b>FATIGUE MANAGEMENT TRAINING</b></p> <p>The training syllabus should contain the following:</p> <ul style="list-style-type: none"> <li>(a) applicable regulatory requirements for flight, duty and rest;</li> <li>(b) the basics of fatigue including sleep fundamentals and the effects of disturbing the circadian rhythms;</li> <li>(c) the causes of fatigue, including medical conditions that may lead to fatigue;</li> <li>(d) the effect of fatigue on performance;</li> <li>(e) fatigue countermeasures;</li> <li>(f) the influence of lifestyle, including nutrition, exercise, and family life, on fatigue;</li> <li>(g) familiarity with sleep disorders and their possible treatments;</li> <li>(h) where applicable, the effects of long range operations and heavy short range schedules on individuals;</li> <li>(i) the effect of operating through and within multiple time zones; and</li> <li>(j) the crew member responsibility for ensuring adequate rest and fitness for flight duty.</li> </ul>		<p><b>FRT</b>– should be understood as an “alertness management training” for crew members or a “fatigue awareness” training for personnel responsible for rostering as well as for management personnel.</p>