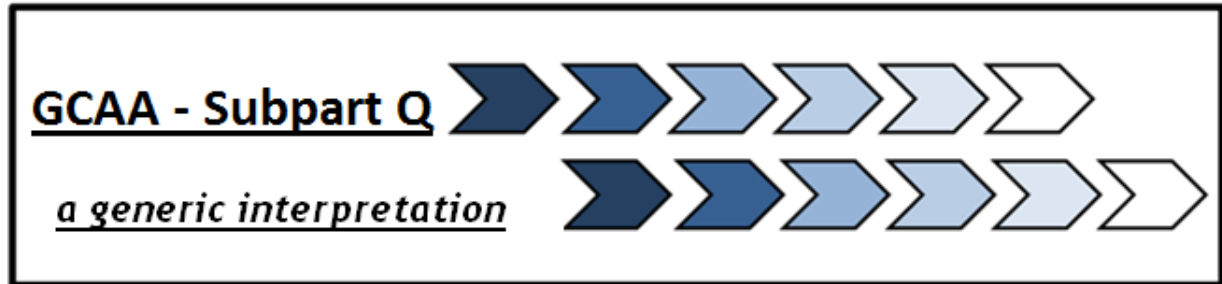


Understanding GCAA FDTL

Flight and Duty Time Limitations. (Subpart Q)



Version 1.3

01-June-2015

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CAR–OPS 1.1100—Applicability

The Authority has established the following regulations specifying the limitations applicable to the flight time and flight duty periods for crew members. These regulations also make provision for adequate rest periods to ensure that fatigue occurring either in a flight or successive flights, or accumulated over a period of time due to these and other tasks, does not endanger the safety of a flight.

This subpart is applicable to UAE registered aeroplanes, as well as foreign registered aeroplanes operated under a UAE Air Operators Certificate. In particular;

- (a) Commercial Air Transport operations, or operations operated by an air transport undertaking.
- (b) Private use operations of turbo-jet and turbo-propeller aeroplanes.

This Subpart is not applicable to flying schools and recreational aircraft operations.

CAR–OPS 1.1105—General principles

The prime objective of a flight and duty time limitation scheme shall ensure that crew members are adequately rested at the beginning of each flying duty period (FDP), and whilst flying is sufficiently free from fatigue so that they can operate to a satisfactory level of efficiency and safety in all normal and abnormal situations. Aircraft operators are expected to appreciate the relationship between the frequency and pattern of scheduled FDPs and rest periods and time off, and give due consideration to the cumulative effects of long working hours interspersed with minimum rest. Factors to be considered when planning duty periods shall include;

- (a) The allocation of work patterns, which avoid such undesirable practices as;
 - (1) alternating day/night duties,
 - (2) the positioning of crews so that a serious disruption of established sleep/work patterns occur,
 - (3) the scheduling of rest periods between 18 and 30 hours especially after long flights crossing multiple time zones.
- (b) planning days off and notifying crews well in advance,
- (c) Consultation between operators and crews to agree basic roster concepts, which ensure adequate rest prior to flight but, within that constraint.

CAR-OPS 1.1110—Terminologies:

Term	Definition
Acclimatised:	When a crew member has spent 3 consecutive local nights on the ground within a local time zone band, which is two hours wide, and is able to take uninterrupted night's sleep The crew member will remain acclimatised thereafter until a duty period finishes at a place where local time differs by more than 2 hours from that at the point of departure.
Augmented flight crew:	A flight crew that comprises more than the minimum number required to operate the aeroplane and in which each flight crew member can leave
Cabin Crewmember (CCM):	An appropriately qualified crew member, other than a flight crew member, who is assigned by an operator to perform duty related to safety of flight and passengers during operations of aircraft.
Cabin crew members time on service as operating crew member:	Any time that a cabin crew member of an augment cabin crew, is not on actual in-flight rest. [Equivalent to the time at the controls as an Operating Crew Member for flight crew member]
Commander:	The pilot in command: The pilot designated by the operator being in command and charged with the safe conduct of a flight.
Contactable:	A short period of time during the day, other than a day off, during which the operator requires a crew member to be at an agreed location for the purpose of giving notification of a duty period, which will commence not less than 10 hours ahead. The contactable period shall be nominated by the operator and acceptable to the Authority
Crew member(CM):	A person assigned by an operator to perform duty on an aircraft.
Days Off :	Periods available for leisure and relaxation free from all duties. A single day off shall include two local nights (minimum of 34 hours period). Consecutive days off shall include a further local night for each additional consecutive day off. A rest period may be included as part of a day off.
Dispatch crew:	A fully qualified and current flight/cabin crew member authorized to carry out pre-flight duties as defined by an operator.
Duty:	Any task that crew member is required by the Operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue. Administrative work has to be understood as any task that a crew member is required to carry out associated with the business of an AOC holder, which is accepted or approved by GCAA under the regulatory framework.
Duty Period:	A period which starts when flight crew or cabin crew members are required by an Operator to report for or to commence a duty and ends when that person is free from all duties.
Early start:	Any duty that is commenced in the period 0500-0659 hours local time.
Extended Long Range Operations:	Any augmented (two set of flight crew) operation that involves a sector with planned flight time between 14:01 hours and 16:00 hours, and conducted under a specific variation approved by GCAA on the basis of a risk assessment provided by the operator, that provide a level of safety equivalent to, or better than, that achieved through the prescriptive fatigue management regulations.

Term	Definition
Fatigue:	A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload(mental and/or physical activity) that can impair a crew member's alertness and ability to safely operate an aircraft or perform safety-related duties.
Flight Crew member (FCM):	A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period such as Pilots and Flight Engineers.
Flight Duty Period(FDP):	A period which commences when a crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aeroplane finally comes to rest at the end of the last flight on which he/she is a crew member.
Flight time — aeroplanes:	The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.
	Note.—“Flight time” as here defined is synonymous with the term “block to block” time or “chock to chock” time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.
FRMS:	A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.
FRMS Policy:	A required component of an FRMS. THE FRMS Policy must: identify the elements of the FRMS and its scope; reflect the shared responsibility of all stakeholders in the FRMS; state the safety objectives of the FRMS; be signed by the accountable executive of the organisation; be communicated throughout the organisation; declares management commitment to effective safety reporting, to providing adequate resourcing for the FRMS, and to continuous improvement of the FRMS; identify clear lines of accountability for the functioning of the FRMS; and require periodic reviews of the FRMS.
FTL variation:	Any operation conducted outside the limits of the prescriptive FTL regulation, and under a specific approval by the GCAA on the basis of a risk assessment provided by the operator and assessed by GCAA to provide a level of safety equivalent to, or better than, that achieved through the prescriptive fatigue management regulations.
Late finish:	A duty is a Late Finish when the duty finishes in the period 0100 to 0159 hours local time
Local Night (LN):	A period of 8 hours falling between 2200 hours and 0800 hours local time.
Long Range Operation:	Any operation that involves a sector with planned flight time greater than 7 hours
Operating crew member:	a crew member carrying out his/her duties in an aircraft during a flight that is required for the safety of the aeroplane and its occupants, according to their licenses.
Positioning:	The practice of transferring crews from place to place as passengers in surface or air transport at the behest of the Operator.
Reporting Time:	The time at which a crew member is required by an operator to report for any duty.

Term	Definition
Rest Period:	A continuous and defined subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.
Rostered/Planned duty:	A duty period, or series of duty periods, with stipulated start and finish times, notified by the operator to crews in advance.
Rostering Period:	A number of consecutive weeks, usually 4, but defined by the operator.
Scheduled Duty:	The allocation of a specific flight or flights or other duties to a crew member within the pre-notified rostered/planned series of duty periods.
Sector:	The time between an aircraft first moving under its own power until it next comes to rest after landing, on the designated parking position.
Split Duty:	A flying duty period, which consists of two or more sectors, separated by less than a minimum rest period.
Standby Duty:	A period during which an Operator places constraints on a crew
Suitable Accommodation:	A well furnished bedroom, which is subject to minimum noise, is well ventilated, and has the facility to control the levels of light and temperature.
Travelling:	All time spent by a crew member transiting between the place of rest, and the
Ultra Long Range Operation(ULR):	Augmented long range operations involving any sector between a specific city pair in which the scheduled planned flight time exceeds 16 hours or the FDP exceeds 18 hours, taking into account mean wind conditions and seasonal changes.
Unforeseen operational circumstance:	An unplanned event, such as unforecast weather, equipment malfunction, or air traffic delay that is beyond the control of the operator.
Week:	A period of seven consecutive days starting at any set time and on set day as specified and stated by the Operator.

Additional Definitions

Term	Definition
calendar day	means a 24-hour period from 0000 through 2359 using base time
daylight time (daylight saving time) (Summer Time) (DST)	Daylight saving time (DST) or summer time is the practice of advancing clocks during the lighter months so that evenings have more apparent daylight and mornings have less. Typically clocks are adjusted forward one hour near the start of spring and are adjusted backward in the autumn.
night duty	A duty that finishes, commences or overlaps the period 0200-0459 hours local time
operating crew member (OCM)	means a crew member carrying out duties in an aircraft during a sector
standard time (STD)	the official local time of a region or country determined by the distance from Greenwich of a line of longitude passing through the area
window of circadian low (WOCL)	means a period of maximum sleepiness that occurs between 0200 and 0559 during a physiological night.
Rest facility	means a bunk, seat, room, or other accommodation that provides a crewmember with a sleep opportunity onboard the aircraft.
:Class 1 rest facility	means a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled, allows the crewmember to control light, and provides isolation from noise and disturbance.
:Class 2 rest facility	means a seat in an aircraft cabin that allows for a flat or near flat sleeping position; is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation; and is reasonably free from disturbance by passengers or crewmembers.
:Class 3 rest facility	means a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

The above additional terms and definitions are used to aid in clarification and understanding of the regulations.

Authors note: Airlines should be aware when CM's will be impacted by a transition between STD and DST. The impact is that the WOCL will not be in synch with definitions of WOCL.

The STD/DST transition reduces the window for a LNR, while a DST/STD transition will increase the window for a LNR.

Acclimatisation:

Status

- **Acclimated** - when a CM has adjusted to a local time zone.
- **Un-acclimated** - when a CM has entered a local time zone and has not adjusted to the local time zone.

Theater

- Based upon the difference in time zone from where the CM was last acclimated to.
- Is 5 time zones wide centered upon the Time Zone where the crew member is acclimated.



Depiction of Theater

In the examples above a duty period from DXB to BOM remains with the theater, thereby the crewmember remains acclimated to DXB time.

A duty period from DXB to SIN exits the theater, thereby the crewmember will be in an un-acclimated state and will require to undergo-adaptation before resuming operations under Acclimated limitations.

- When a CM exits a theater, that individual is Un-acclimated, and will remain in such a state until they have acclimated to the local surroundings.
- A CM begins time within a new theater at release time.

Acclimatization Process

Acclimatization process is also known as re-adaptation.

Flying across time zones exposes the circadian body clock to sudden shifts in the day/night cycle. Because of its sensitivity to light and (to a lesser extent) social time cues, the circadian body clock will eventually adapt to a new time zone.

- A CM may be considered at time of report for a FDP as acclimated to any location if the following occurs:
 - The total time within a single theater for 54 hours or more, and
 - The total time encompasses 3 local nights, and
 - Has been given a local nights rest of 8:00 between 22:00 and 08:00

- Once a CM has achieved an Acclimated status:
 - The CM's Reference Time Zone (RTZ) is reset to the Time Zone of the station at the point of acclimatization.

Window of Circadian Low (WOCL):

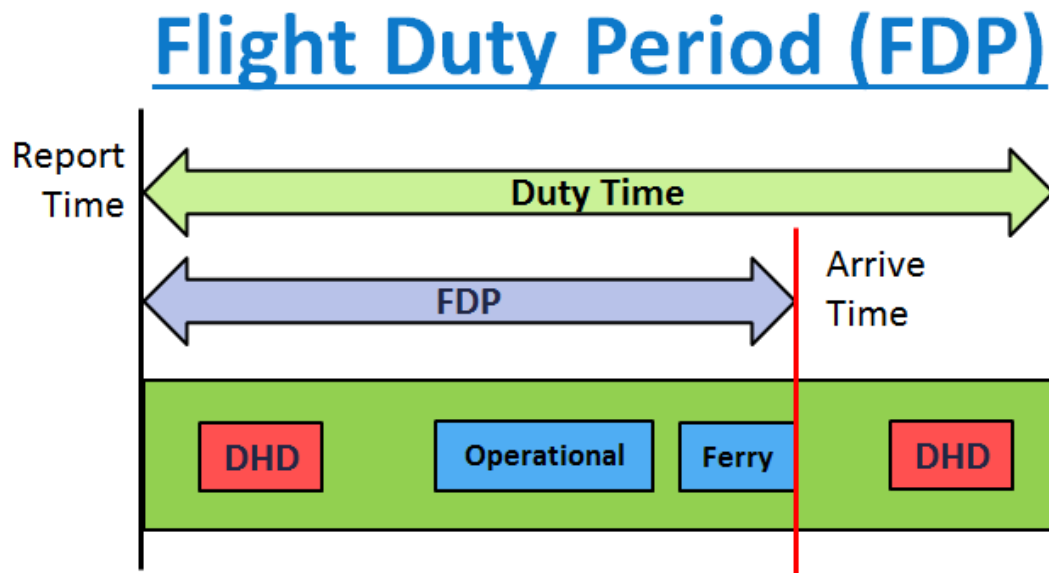
Shall be based upon the CM's reference time zone (RTZ).

Is between 02:00 and 05:00 (inclusive).

FDP time:

For an OCM assigned to a duty period that contains flight time:

- The start of the FDP is at the report time (UTC) of the duty period.
- The end of the FDP is at the arrival time of the last operating (working) flight (UTC) before the start of a rest period.
- Ferry Flights are considered working flights.



Rest Periods and Breaks:

Rest Period:

A **Rest Period** begins when a crew member is released from duty until the crew member reports for the next duty. When the airline is responsible to provide a rest accommodation, Travel time to/from the accommodation and Sleep opportunity must be considered.



Travel time to/from accommodation

- never less than 30 minutes each way



Sleep opportunity

- never less than 8 hours

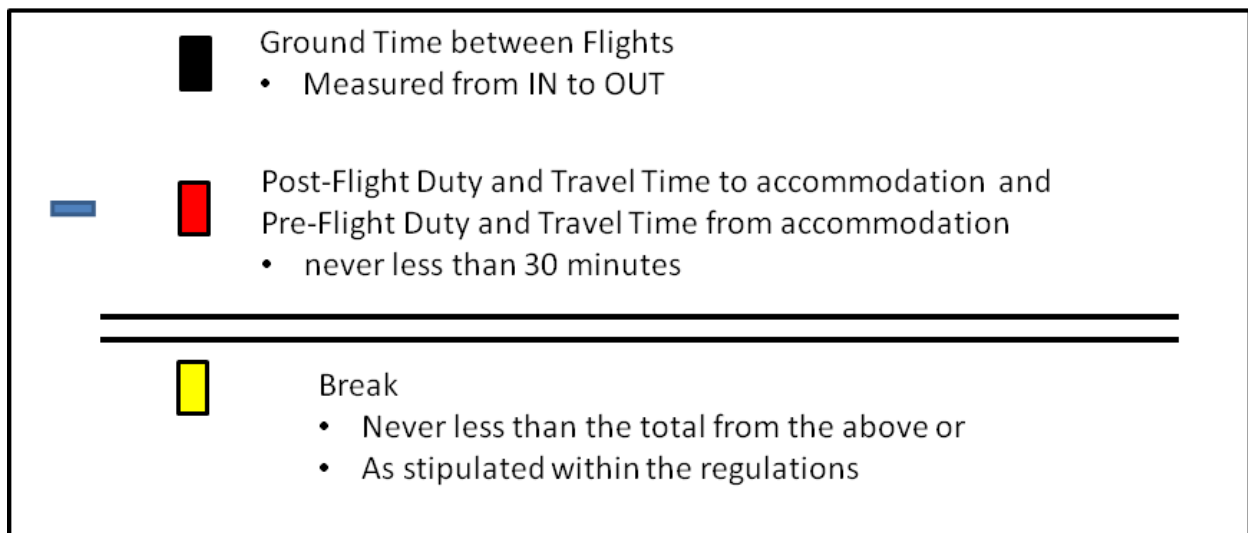
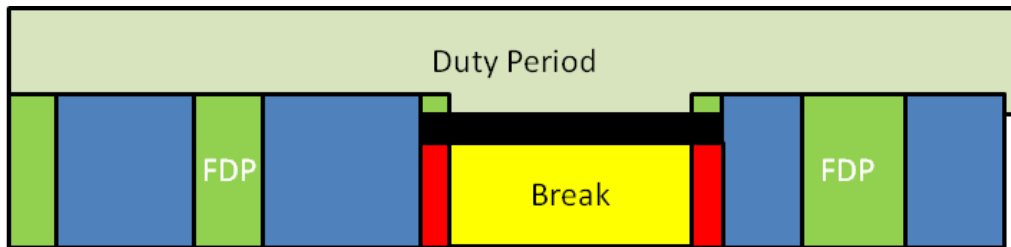


Rest period - measured from Release to Report

- Never less than the total from the above or
- As stipulated within the regulations

Break:

A **Break** - is not considered a Rest Period, it is used to extend FDP limitations using Split Duty rules. The minimum time for a Duty Break is 3 hours.



Author's note:

The operator should specify the times in its Operations Manual (OM) the minimum durations of:

- Post-Flight Duty
- Pre-Flight Duty
- Travel Time to/from accommodation,

The operator should consider airport, time of day, aircraft type when specifying the minimums above.

The absolute minimum ground time between to flights that may be considered a break is 3:30,

Break = Ground Time – (Post-Flight Duty + Pre-Flight Duty + Travel Times)

3:00 = **3:30** – 0:30,

However the ground time will most likely increase due to values in the OM,

Example: 3:00 = **5:00** – (0:30 + 1:00 + 0:15 + 0:15)

Local Night Rest (LNR):

1. Must include:
 - a. 8 consecutive hours
 - b. that starts at or before 00:00 (local time) and
 - c. ends at or after 06:00 (local time)

Single day free from duty (SDFD)	means a time free of all duties at base consisting of a single day and two LNRs.
Two days free from duty (TDFD)	means a time free of all duties at base consisting of a two consecutive days and three LNRs.

The minimum time for a LNR is 8:00.

The minimum time for a SDFD is 34:00.

The minimum time for a TDFD is 54:00.

Example	12	13	14	15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																

- [Example 1](#) – show a 10 hours rest period from 22:00 to 08:00, this qualifies as a **LNR**.
- [Example 2](#) – has a 10 hour rest period with 8 hours during the **LNR** period from 00:00 to 08:00, the rest from 08:00 to 10:00 is not applied towards the **LNR**.
- [Example 3](#) – has a 10 hour rest period with 8 hours during **LNR** period from 22:00 to 06:00, the rest from 20:00 to 22:00 is not applied towards the **LNR**
- [Example 4](#) – has a rest period from 01:00 to 06:00 the following day, the rest from 01:00 to 08:00 is not applied towards the **LNR** since it is insufficient in duration, the rest from 08:00 to 22:00 also is not applied towards the **LNR**, the rest from 22:00 to 06:00 the next days is applied toward the **LNR**, it falls within the window and is of sufficient duration.
- [Example 5](#) – has a rest period from 07:00 to 06:00 the following day, the rest from 07:00 to 08:00 is not applied towards the **LNR** since it is insufficient in duration, the rest from 08:00 to 22:00 also is not applied towards the **LNR**, the rest from 22:00 to 06:00 the next days is applied toward the **LNR**, it falls within the window and is of sufficient duration.
- [Example 6](#) – has a rest period from 06:00 to 05:00 the following day, the rest from 06:00 to 08:00 is not applied towards the **LNR** since it is insufficient in duration, the rest from 08:00 to 22:00 also is not applied towards the **LNR**, the rest from 22:00 to 05:00 the next days is not applied towards the **LNR** since it is insufficient in duration.
- [Example 7](#) – has a rest period from 11:00 to 06:00 the following day, the rest from 11:00 to 22:00 is not applied towards the **LNR**, the rest from 22:00 to 06:00 the next days is applied toward the **LNR**, and it falls within the window and is of sufficient duration.
- [Example 8](#) – has a rest period from 00:00 to 12:00 the following day, the rest from 00:00 to 08:00 is applied towards the **LNR** since it is of sufficient in duration, the rest from 08:00 to 22:00 is not applied towards the **LNR**, the rest from 22:00 to 08:00 the next days is applied toward the **LNR**, it falls within the window and is of sufficient duration, the rest from 08:00 to 12:00 is not applied toward the **LNR**. The total amount of rest is 36 hours with 2 **LNR**'s. The rest period qualifies as a **SDFD**.
- [Example 9](#) – has a rest period from 01:00 to 13:00 the following day, the rest from 01:00 to 08:00 is not applied towards the **LNR** since it is of insufficient in duration, the rest from 08:00 to 22:00 is not applied towards the **LNR**, the rest from 22:00 to 08:00 the next days is applied toward the **LNR**, it falls within the window and is of sufficient duration, the rest from 08:00 to 13:00 is not applied toward the **LNR**. The total amount of rest is 36 hours with 1 **LNR**

Applied Crew Schemes:

Crew Schemes are also known as crew complements. The positions Captain (CA) and First Officer (FO), refers to individuals who hold the Required Qualifications to Operate in that specific position, versus the Rank of the individual. Individual Airline designations may apply differently.

When any additional Operating Crew Member is carried to provide in-flight relief with the intent of extending an FDP, that individual shall hold qualifications which are equal or superior to those held by the crew member who is to be rested.

Standard Flightcrew:

- Flight operations which operate with only one (1) CA and one (1) FO.
- Any aircraft that lacks a Class 1, 2 or 3 on-board rest facility, or

Augmented Flightcrew:

- All flight operations within the FDP must operate with at least, two (2) CA's and one (1) (FO)
- Augmented Flightcrew must be assigned to an aircraft that has a Class 1, 2 or 3 on-board rest facility.

Heavy Flightcrew:

- All flight operations within the FDP must operate with two (2) CA's and two (2) FO's
- Heavy Flightcrew must be assigned to an aircraft that has a Class 1, 2 or 3 on-board rest facility.

Standard Cabin crew:

- Flight operations, which operate with the minimum required cabin crew, based upon seating capacity and operating requirements.
- Any aircraft that lacks a Class 1, 2 or 3 on-board rest facility.

Augmented Cabin crew:

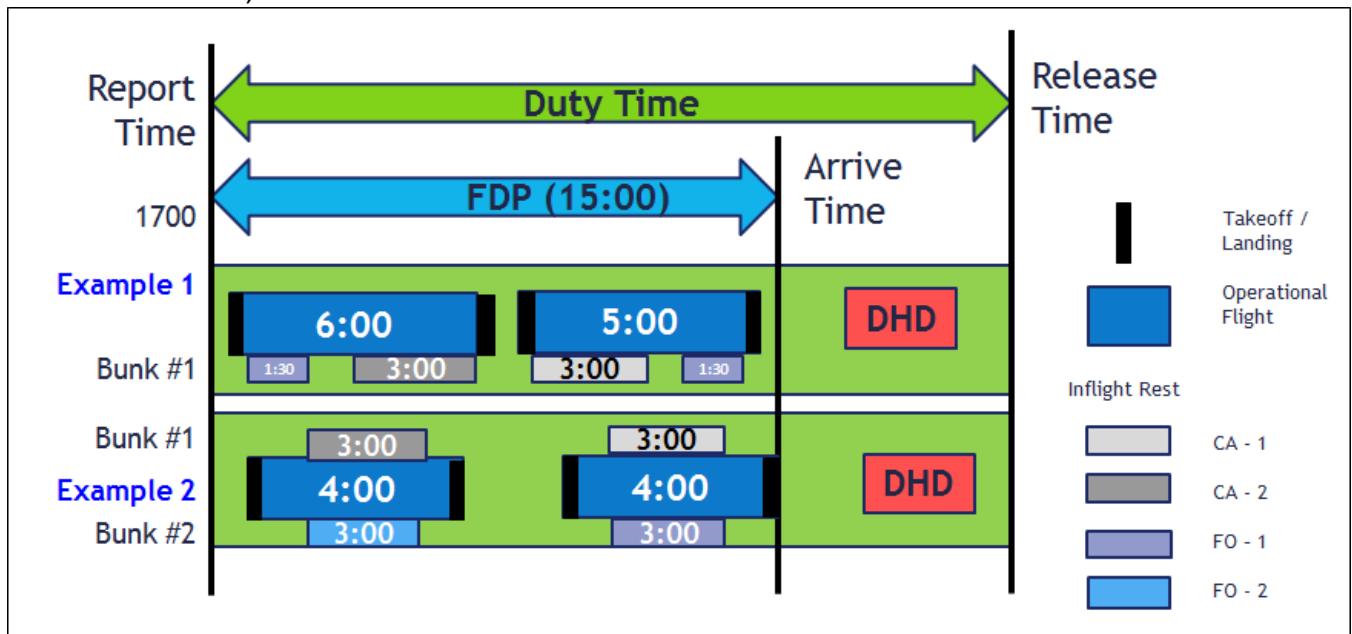
- Flight operations which operate with the minimum required cabin crew based upon seating capacity and operating requirements plus additional cabin crew and allows for each cabin crewmember to be relieved of required tasks during a flight.

In-Flight Rest Requirements:

Permits extension above scheduled FDP limits. May not be combined with Split Duty Extensions.

Augmented and Heavy Flightcrew Schemes:

- An inflight rest period is only applied during cruise, not during the take-off or landing phases of a flight.
 - Takeoff phase - is generally the first 30 to 45 minutes of a flight.
 - Landing phase - is generally the last 30 to 45 minutes of a flight.
- An inflight rest period for each flightcrew member must allow for 3:00 of rest.
 - Best practices suggest that the inflight rest periods also allow for the impacts of '*sleep inertia*', 10-15 minutes.



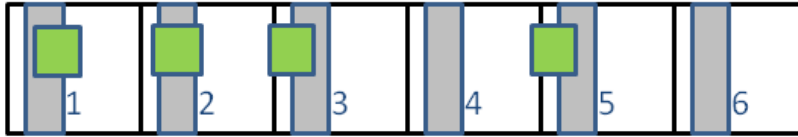
Example 1: legal for a 3 pilot flightcrew, complies with the requirement for 3 hrs inflight rest in the, the inflight rest do not overlap.

Example 2: legal for a 4 pilot flightcrew only, the inflight rest periods must overlap.

Night Duty / Early Start / Late Finish:

Night Duty Period (NDP):

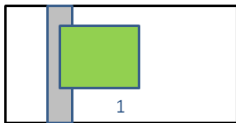
- **Night Time** is defined as 02:00 and 04:59 in the local time zone
- Is a Duty Period, which infringes upon any portion of **Night Time**.



- Consecutive NDPs are those, which occur during the **Night Time** on consecutive calendar days.

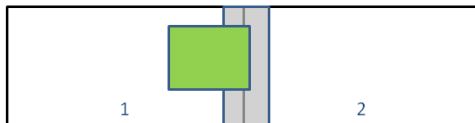
Early Start:

- **Early Time** is defined as 05:00 and 06:59 in the local time zone.
- Is a Duty Period which starts (Reports) during the period of **Early Time**.

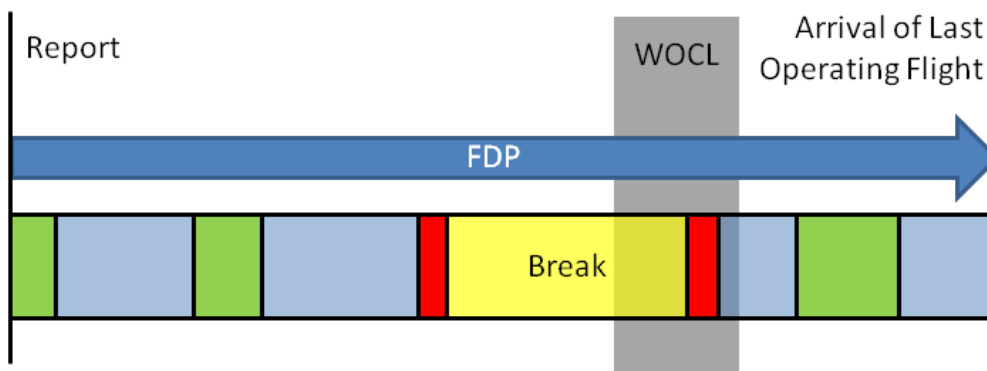


Late Finish:

- **Late Time** is defined as 01:00 and 01:59 in the local time zone.
- Is a Duty Period which ends (Releases) during the period of **Late Time**.



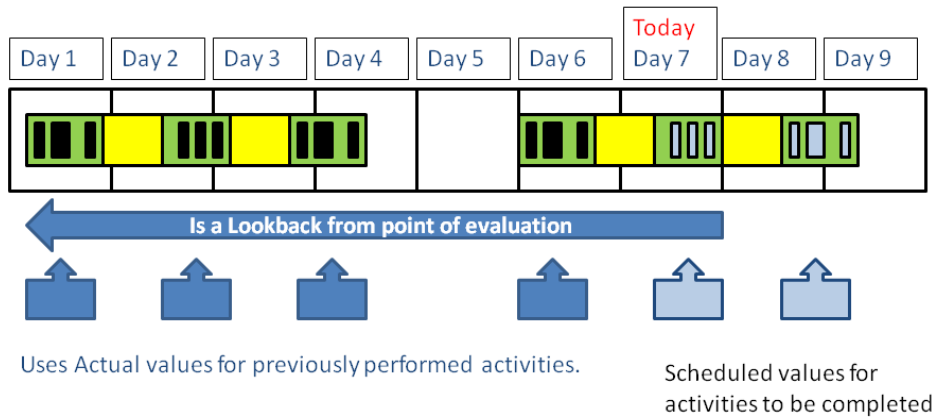
Split Duty:



- Is a FDP, which contains a Break of at least 3 hours in a ground rest facility.
- May be applied to a FDP at any time of the day.
- Break is less than a Required Rest Period.
- Break is considered FDP as well as Duty.
- Break requires a Suitable Accommodation if the Break is 6 hours or more, or touches the WOCL.
- FDP is measured from Report to Arrival of Last Operating Flight.
- Is only applied to duties that operate under Standard Crew Schemes.

Permits extensions above the scheduled FDP limits by 50 % of the break.

Cumulative Flight Time and Cumulative Duty time



All cumulative values are across calendar periods.

Only the portion of the Duty Time or Flight Time that falls within the calendar day/month period.

Duty time is accumulated across 7, 14 and 28 calendar days, and across 12 calendar months.

Note: Duty time is also accumulated across 5, and 84 calendar days when dealing with Night Duties.

Flight Time is accumulated across 28 calendar days, and across 12 calendar months.

- Flight time doesn't include time when a crewmember is taking time for in-flight rest.

Application of Regulations:

Standard Crew Complement:

CAR-OPS 1.1127(k)—Limits on Two Flight Crew Long Range Operations

When an aeroplane flight crew is only two pilots, the allowable FDP shall be calculated as follows. A sector scheduled for more than 7 hours is considered as a multi-sector flight, as below:

Scheduled Sector Length / Times	Acclimatized	Not Acclimatized
7 – 9 hours	2 sectors	4 sectors
9-11 hours	3 sectors	4 sectors
Over 11 hours	4 sectors	Not applicable

CAR-OPS 1.1127(j)—Maximum FDP

Table A – Two or more Flight Crew- Acclimatised

Local Time of Start	Sectors – Flight Crewmember in an Acclimated State							
	1	2	3	4	5	6	7	8 or more
06:00 – 07:59	13:00	12:15	11:30	10:45	10:00	9:30	9:00	9:00
08:00 – 12:59	14:00	13:15	11:45	11:15	10:45	10:15	9:45	9:30
13:00 – 17:59	13:00	12:15	11:30	10:45	10:00	9:30	9:00	9:00
18:00 – 21:59	12:00	11:15	10:30	9:45	9:00	9:00	9:00	9:00
22:00 – 05:59	11:00	10:15	9:30	9:00	9:00	9:00	9:00	9:00

- Use the start time of the FDP (Adjusted to Reference Time Zone) and apply the number of sectors within the FDP.
- Should be done for each sector (Leg).

Example:

Report	800					ELAPSED		MAX	MAX EXT
FLT	DEP	ARR	BLOCK	FDP	DUTY	SK FDP	CMD EXT		
1	DXB	900	RUH	1145	145	245	245	1400	1700
2	RUH	1215	DXB	1300	145	500	500	1315	1615
3	DXB	1330	RUH	1615	145	715	630	1145	1445
4	RUH	1645	DXB	1730	145	930	800	1115	1415
				Total	700	930			
Acclimated Standard Crew				Release		1800	1945	2245	
				Duty Time		1000	1145	1445	

Maximum Scheduled FDP in RED.

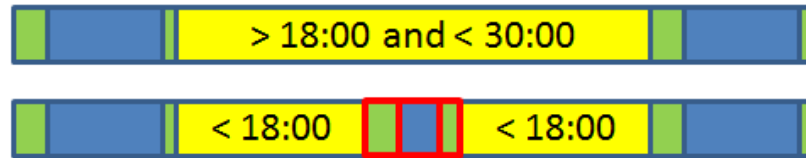
Maximum daily FDP for a crew member in an Unknown State of Acclimatisation shall use the following table:

Table B Two or more Flight Crew - Not Acclimatised

Length of preceding rest(hours)	Sectors – Flight Crewmember Not Acclimated
---------------------------------	--

	1	2	3	4	5	6	7 or more
Up to 18 or over 30	13:00	12:15	11:30	10:45	10:00	9:15	9:00
Between 18 and 30	11:30	11:00	10:30	9:45	9:00	9:00	9:00

- NOTE: The practice of inserting a short duty into a rest period of between 18 and 30 hours. In order to produce a rest period of less than 18 hours, thereby taking advantage of the longer FDP contained in Table B, is not permitted.



- Apply the number of sectors within the FDP.
- Should be done for each sector (Leg)

Example:

Report	800					ELAPSED		MAX	MAX EXT
FLT	DEP	ARR		BLOCK	FDP	DUTY	SK FDP	CMD EXT	
1	BRU	900	NCE	1045	145	245	245	1130	1430
2	NCE	1115	BRU	1300	145	500	500	1100	1400
3	BRU	1330	FRA	1430	100	630	630	1030	1330
4	FRA	1500	BRU	1600	100	800	800	945	1245
Not Acclimated Standard Crew Preceding rest period of 24:00				Total	530	800			
				Release		1630	1815	2115	
				Duty Time		830	1015	1315	

Maximum Scheduled FDP in RED.

Example:

Report	800					ELAPSED		MAX	MAX EXT
FLT	DEP	ARR		BLOCK	FDP	DUTY	SK FDP	CMD EXT	
1	BRU	900	NCE	1045	145	245	245	1300	1600
2	NCE	1115	BRU	1300	145	500	500	1215	1515
3	BRU	1330	FRA	1430	100	630	630	1130	1430
4	FRA	1500	BRU	1600	100	800	800	1045	1345
Not Acclimated Standard Crew Preceding rest period of 14:00				Total	530	800			
				Release		1630	1915	2215	
				Duty Time		830	1115	1415	

Maximum Scheduled FDP in RED.

Authors Note: It is important to calculate the scheduled FDP limitation with each leg, as this determines when a leg is operating under extended FDP limits.

CAR-OPS 1.1127(c)—Split Duty

Consecutive Hours	Maximum Extension of FDP
-------------------	--------------------------

Less than 3 hours	Nil
3 to 10 hours	A period equal to half of the consecutive hours taken.

The FDP must contain a break on the ground of no less than 3 hours (3:00).

Is only applied as an extension to the Scheduled FDP Limits in CAR–OPS 1.1127(j) Maximum FDP

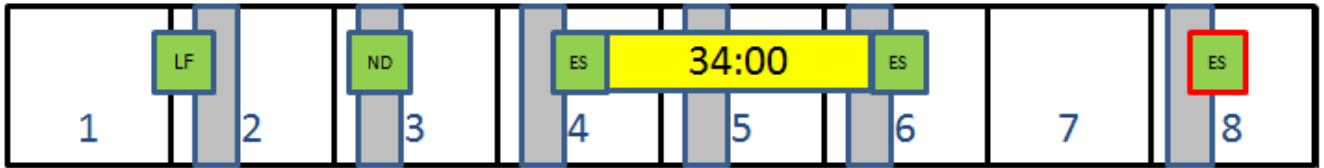
Example:

Report	800					ELAPSED		MAX SK	SPLIT	MAX EXT
FLT	DEP		ARR		BLOCK	FDP	DUTY	FDP	FDP	CMD EXT
1	DXB	900	RUH	930	130	230	230	1400	1400	1700
2	RUH	1000	DXB	1230	130	430	430	1315	1315	1615
BREAK	DXB	1245	DXB	1545		745	745	Break is 3:00 / Ext is 1:30		
3	DXB	1600	RUH	1630	130	930	930	1145	1315	1615
4	RUH	1700	DXB	1930	130	1130	1130	1115	1245	1545
					Total	600	1130			
Split Duty Standard Crew					Release		2000	1945	2115	0045
					Duty Time		1200	1145	1315	1615
					Required Rest After DP		1200	1215	1315	1615

Split FDP values in RED.

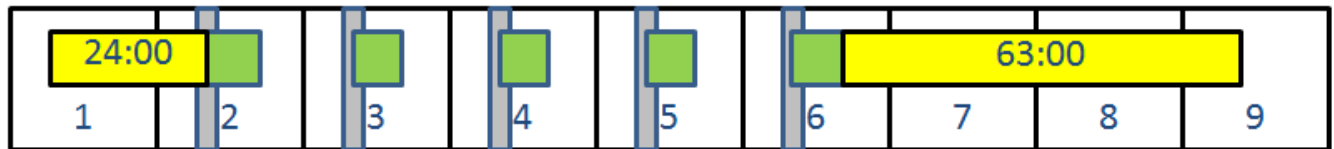
CAR-OPS 1.1127(a)(1)—Late finishes/Early starts:

- General Rule



- No more than 3 duties than overlap any portion of the time from 01:00 to 06:59 on consecutive calendar days.
- No more than 4 duties in any 7 consecutive calendar days.
- Consecutive Duties are broken by a span of time of no less than 34:00 from the end of one LF/ND/ES and the next.

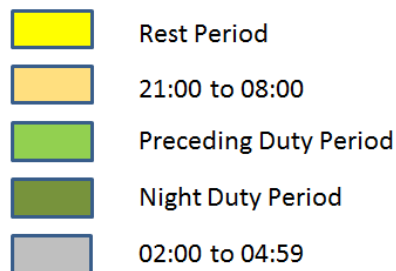
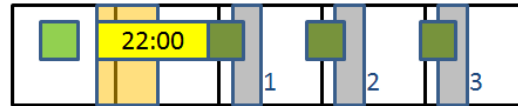
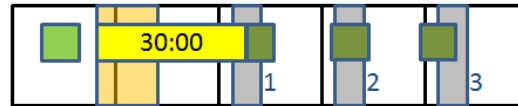
- (Optional) Crewmembers Regularly Scheduled to Early Start Duty Periods (ES):



- The start of the series must be preceded by a rest period of 24:00 free of duty before the start of the series of ES.
- All the Duty periods must be ES.
- No more than 5 ES in the series.
- Each duty period is limited to 9:00.
- The series ends with 63:00 free from duty.
- FDP's may only be extended due to unforeseen circumstances up to 1:00 for any duty period and a maximum of 2:00 total within the series of 5 days.

CAR-OPS 1.1127(a)(2)—Consecutive Night Duties (CND):

- Standard Interpretation
 - Before starting a series of Consecutive Night Duties (CND), a crewmember will be relieved of all duties during the period that includes 21:00 to 08:00 local time preceding the start of the series of.



- If the Start of the series of CND begins earlier than 08:00 then the minimum rest period is equal to the following formula:
 - Minimum Rest Before = Start time of CND + 27:00
 - Example: 30:00 = 03:00 + 27:00
 - Example: 27:30 = 00:30 + 27:00
- If the Start of the series of CND begins after 08:00 then the minimum rest period is equal to the following formula:
 - Minimum Rest Before = Start time of CND + 03:00
 - Example: 22:00 = 19:00 + 03:00
 - Example: 25:00 = 22:00 + 03:00

Authors Note: By ensuring a LNR before the start of the series of CND's undesirable practices of day to night transition are avoided.

- Limitations due to extension of FDP prior to series of FDP:
 - Options A and B OR Options B and C. The operator may roster Operating Crew Members for either 2 or 3 consecutive nights, but must ensure that the duty preceding this series of duties finishes by 2359 hours local time (2 nights) or 2100 hours local time (3 nights) as appropriate.
 - If it is preferred to retain the present contents then attention must be paid to the notes attached to the Options listed (below). These notes list the actions to be followed in the event that duty is inadvertently extended beyond the cut-off times (i.e. 2100 or 2359 hours).

Option A

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 3 consecutive nights, then crew members will finish the duty preceding this series of duties by 2100 hours local time before commencing the block of consecutive night duties, such that the Operating Crew Members can take a rest period during a local night. If the duty immediately prior to the 3 consecutive night duties extends beyond 2100 hours local time and the individual Operating Crew Member is willing to continue with the planned roster,(i.e. 3 consecutive night duties) then provided that duty preceding this series of duties finishes no later than 2359 hours local time, the schedule may continue.

NOTE 1: Under this Option, if the operating Crew member chooses not to continue the planned roster(after finishing duty between 2100 and 2359 hours local time) then only the planned first and second night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

NOTE 2: Under this Option, if the duty finishes after 2359 hours local time, then only the first of the 3 consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

Option B - 2 consecutive night duties

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 2 consecutive nights, then Operating Crew Members will finish the duty preceding this series of duties by 2359 hours local time before commencing the block of 2 consecutive night duties, such that the crew members can take a rest period during a local night.

NOTE: Under this Option in the event of 2359 hours being exceeded, then only the first of the 2 planned consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

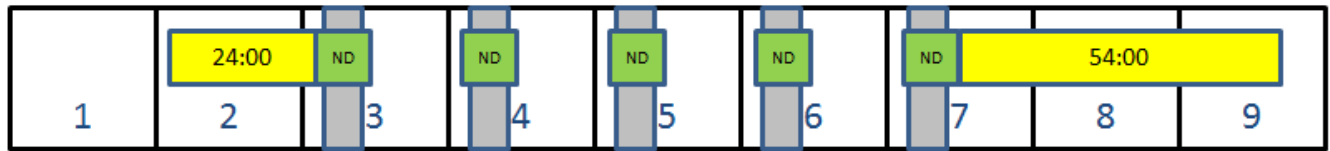
Option C - 3 consecutive night duties

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 3 consecutive nights, then crew members will finish the duty preceding this series of duties by 2100 hours local time before commencing the block of consecutive night duties, such that the crew members can take a rest period during a local night.

NOTE: 1. Under this Option in the event of 2100 hours being exceeded, then only the first of the 3 planned consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

NOTE: 2. In all cases the limits in paragraph 1 and 2 or must not be exceeded (i.e. maximum of 3 consecutive nights and 4 in 7 consecutive days).

- (Optional) Crewmembers Regularly Scheduled to Night Duty Periods (ND):



- The start of the series must be preceded by a rest period of 24:00 free of duty before the start of the series of ND.
- All the Duty periods must be ND.
- No more than 5 ND in the series.
- Each duty period is limited to 8:00.
- The series ends with 54:00 free from duty, which may not be reduced
- FDP's may not be extended using split duty or inflight rest
- FDP's may only be extended due to unforeseen circumstances up to 1:00 for any duty period and a maximum of 2:00 total within the series of 5 days.
- Day off requirements:
 - The 54:00 time free from duty will count as a single day free from duty for the purposes of evaluation of CAR-OPS 1.1126 Duty cycle, days off and leave entitlement.
 - The 54:00 time free from duty is permitted to count as two days free from duty provided the cm will have less than 20:00 total duty hours in the 5 day span.
 - Only the first 54:00 time free from duty is permitted to count as two days free from duty when the cm has more than 20:00 and less than 40:00 total duty hours in the 5 day span.
 - When a cm has 40:00 or more total duty hours in the 5 day span, the cm must have 9 days free from duty in any 28 calendar days.
- Cumulative limits:
 - When a cm has 40:00 or more total duty hours in the 5 day span, the cumulative flying limits are reduced as follows:
 - ❖ .75:00 in any 28:00 days
 - ❖ 180:00 in any 84 days
 - ❖ 600:00 in any 12 calendar months
- Additional Rest:
 - When a cm has more than 40:00 total duty in the 5 day span, the 54:00 time free from duty will be increased by the same amount above 40:00.

Augmented Crew Complements:

CAR–OPS 1.1127(b)—Extension of Flying duty period by In- flight relief

If a crewmember is provided inflight rest greater than or equal to 3:00 the Maximum FDP in CAR–OPS 1.1127(j) may be increased as follows:

	Bunk	Seat
Permitted Extension	50% of the Inflight rest to a maximum of 18:00	33% of the in-flight rest given to a maximum of 15:00

- (i) When any additional Operating Crew Member is carried to provide in-flight relief with the intent of extending an FDP, that individual shall hold qualifications which are equal or superior to those held by the crew member who is to be rested. To take advantage of this facility the division of duty and rest between crew members must be kept in balance. It is unnecessary for the relieving crew member to rest in between the times relief is provided for other crew members.
- (ii) When in-flight relief is utilized, there must be for the crew members resting, a comfortable reclining seat reclining more than 40 degrees and provide foot, legs and arm rests, or a crew rest compartment with a bunk or equivalent flat-bed first or business class seat, separated by at least a side seat (where possible) from any passenger and screened from the flight deck,
- (iii) As a contingency procedure in case of unforeseen circumstances that make the accepted in-flight rest facility unserviceable, an equivalent rest facility according the configuration/layout of the passenger cabin has to be assigned to the affected crew member.

CAR–OPS 1.1135—Cabin crew requirements

Maximum Flight Duty Period:

Local Time of Start	Sectors – Cabin Crewmember in an Acclimated State							
	1	2	3	4	5	6	7	8 or more
06:00 – 07:59	14:00	13:15	12:30	11:45	11:00	10:30	10:00	10:00
08:00 – 12:59	15:00	14:15	12:45	12:15	11:45	11:15	10:45	10:30
13:00 – 17:59	14:00	13:15	12:30	11:45	11:00	10:30	10:00	10:00
18:00 – 21:59	13:00	12:15	11:30	10:45	10:00	10:00	10:00	10:00
22:00 – 05:59	12:00	11:15	10:30	10:00	10:00	10:00	10:00	10:00

Length of preceding rest(hours)	Sectors – Cabin Crewmember Not Acclimated						
	1	2	3	4	5	6	7 or more
Up to 18 or over 30	14:00	13:15	12:30	11:45	11:00	10:15	10:00
Between 18 and 30	12:30	12:00	11:30	10:45	10:00	10:00	10:00

Cumulative Flight Time:

- 100 hours of flight time in any 28 consecutive days;
- 900 hours of flight time in any 12 consecutive calendar months.

Cumulative Duty Time:

- 60 Scheduled duty hours in any 7 consecutive days;
- 65 Actual duty hours in any 7 consecutive days;
- 105 duty hours in any 14 consecutive days;
- 210 duty hours in any 28 consecutive days.
- 1950 duty hours in any 12 consecutive calendar months.

Rest Period

Rest Away From Base				
Condition	Required Rest before	Reduced Rest	Compensatory Rest	Minimum time in Suitable Accommodation
Preceding Duty period is greater than 11:00	Length of Preceding Duty Period	Not permitted	Not applicable	9:00
Preceding Duty is less than 11:00	11:00	10:00	Required rest period only – may not be reduced when FDP has been extended	9:00

Rest At Base			
Condition	Required Rest before	Reduced Rest	Compensatory Rest
Preceding Duty period is greater than 11:00	Length of Preceding Duty Period	11:00	Required rest period only – may not be reduced when FDP has been extended
Preceding Duty is less than 11:00	11:00	Not permitted	Not applicable

- If the preceding duty period, which includes any time spent on positioning, exceeded 8 hours, then the ensuing rest period must include a local night.
- After being called out from a standby duty the length of minimum rest shall be determined by the length of standby duty, plus any time spent on positioning, and any FDP completed.

All Crew Complements:

CAR-OPS 1.1127(e)—Aircraft commander’s discretion to extend a flying duty period:

Before Take-off:

- The maximum planned extension for standard flight crew and standard cabin crew is 2 hours (2:00) above the scheduled FDP limits in CAR-OPS 1.1127(j).
- The maximum planned extension for augmented flight crew and augmented cabin crew is 2 hours (2:00) above the scheduled FDP limits in CAR-OPS 1.1127(b).

After Take-off:

- May continue as long as necessary to land at the next Destination / Alternate Aerodrome.

Example:

Report	800					ELAPSED		MAX	MAX EXT		
FLT	DEP		ARR		BLOCK	FDP	DUTY	SK FDP	SK FDP	CMD EXT	
1	BRU	900	NCE	1045	145	245	245	1300	1400	1500	
2	NCE	1115	BRU	1300	145	500	500	1300	1400	1500	
3	BRU	1330	FRA	1430	100	630	630	1230	1330	1430	
4	FRA	1500	BRU	1600	100	800	800	1200	1300	1400	
Acclimated Standard Crew					Total	530	800				
					Release		1630	2030	2130	2230	
					Duty Time		930	1230	1330	1430	
					Required Rest After DP		1200	1230	1530	1430	

Maximum Planned FDP Extensions in RED.

CAR-OPS 1.1125—Absolute Limits on Flying Hours

Cumulative Flight Time:

- 100 hours of flight time in any 28 consecutive days;
- 900 hours of flight time in any 12 consecutive calendar months.

Cumulative Duty Time:

- 55 Scheduled duty hours in any 7 consecutive days;
- 60 Actual duty hours in any 7 consecutive days;
- 95 duty hours in any 14 consecutive days;
- 190 duty hours in any 28 consecutive days.
- 2000 duty hours in any 12 consecutive calendar months.

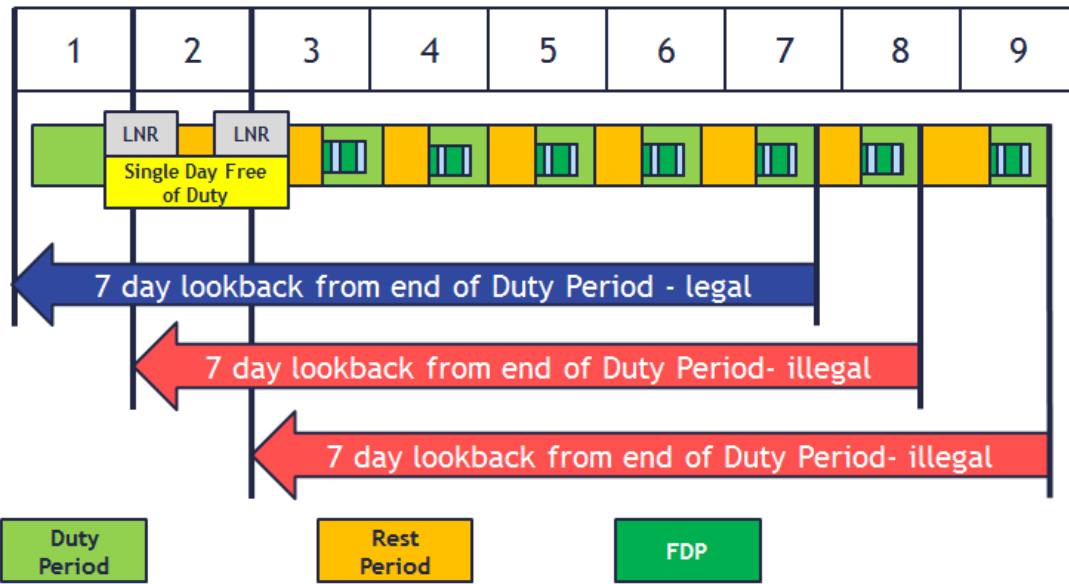
CAR–OPS 1.1127(d)—Rest Period

Rest Away From Base				
Condition	Required Rest before	Reduced Rest	Compensatory Rest	Minimum time in Suitable Accommodation
Preceding Duty period is greater than 12:00	Length of Preceding Duty Period	Not permitted	Not applicable	10:00
Preceding Duty is less than 12:00	12:00	11:00	Required rest period only – may not be reduced when FDP has been extended	10:00

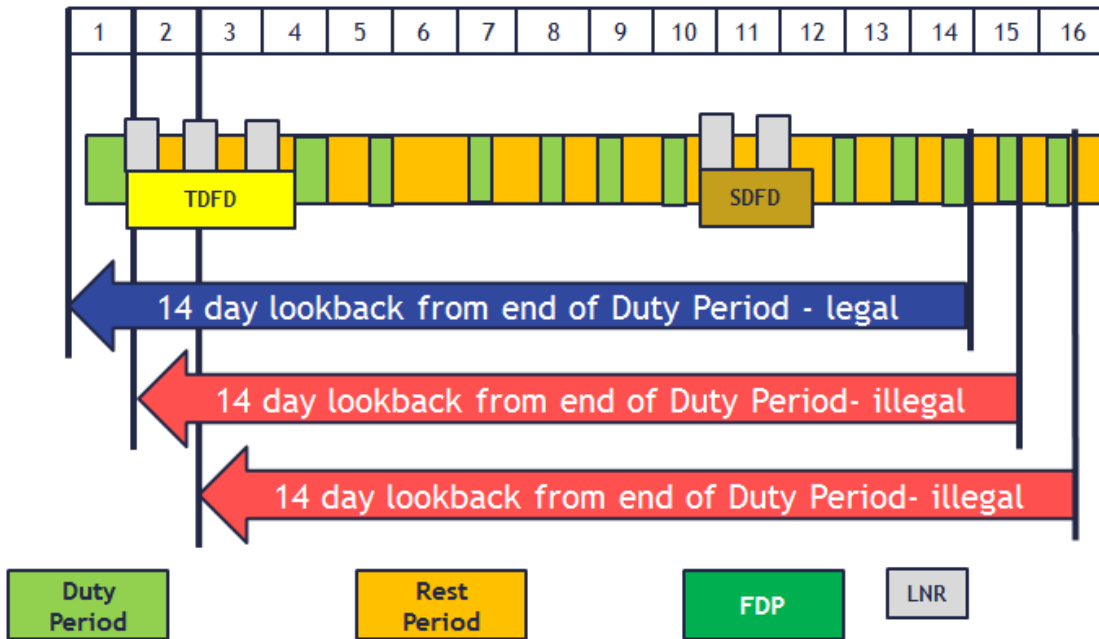
Rest At Base			
Condition	Required Rest before	Reduced Rest	Compensatory Rest
Preceding Duty period is greater than 12:00	Length of Preceding Duty Period	12:00	Required rest period only – may not be reduced when FDP has been extended
Preceding Duty is less than 12:00	12:00	Not permitted	Not applicable

- If the preceding duty period, which includes any time spent on positioning, exceeded 8 hours, then the ensuing rest period must include a local night.
- After being called out from a standby duty the length of minimum rest shall be determined by the length of standby duty, plus any time spent on positioning, and any FDP completed.

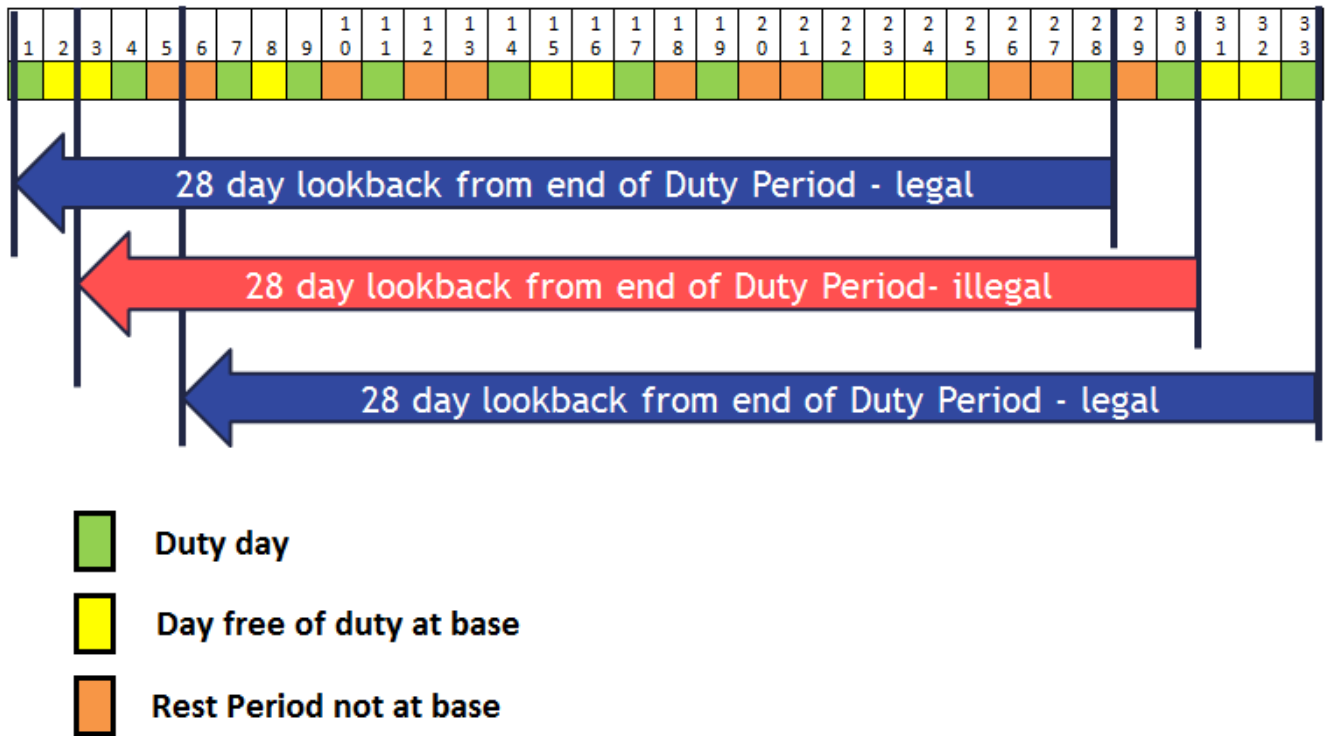
CAR-OPS 1.1126—Duty cycle, days off and leave entitlement



From the scheduled release of a duty period, looking back 7 calendar days, a single day free of duty (SDFD) which includes two local nights rest (LNR) must be found within the same 7 calendar day period.

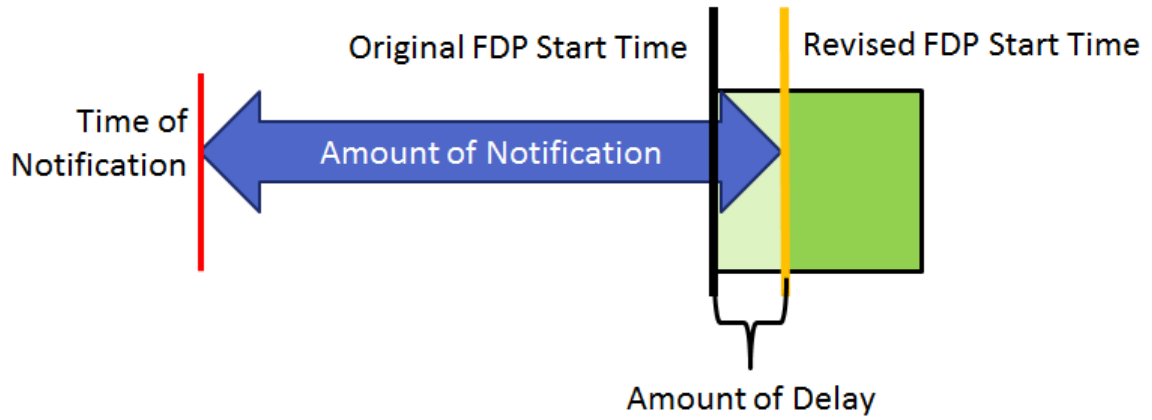


From the release of a duty period, looking back 14 calendar days, two days free of duty (TDFD) which includes three local nights rest (LNR) must be found within the same 14 calendar day period.



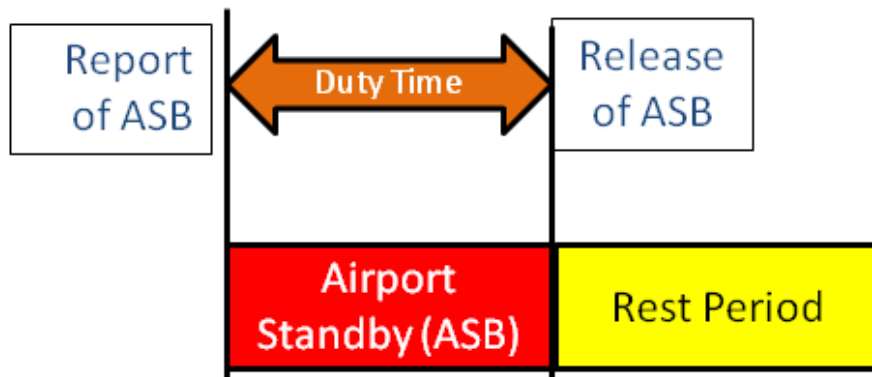
A Crew member must be able to lookback 28 calendar days and find a total of 7 days free of duty.

A Crew member must be able to lookback 84 calendar days and find a total of 24 days free of duty.

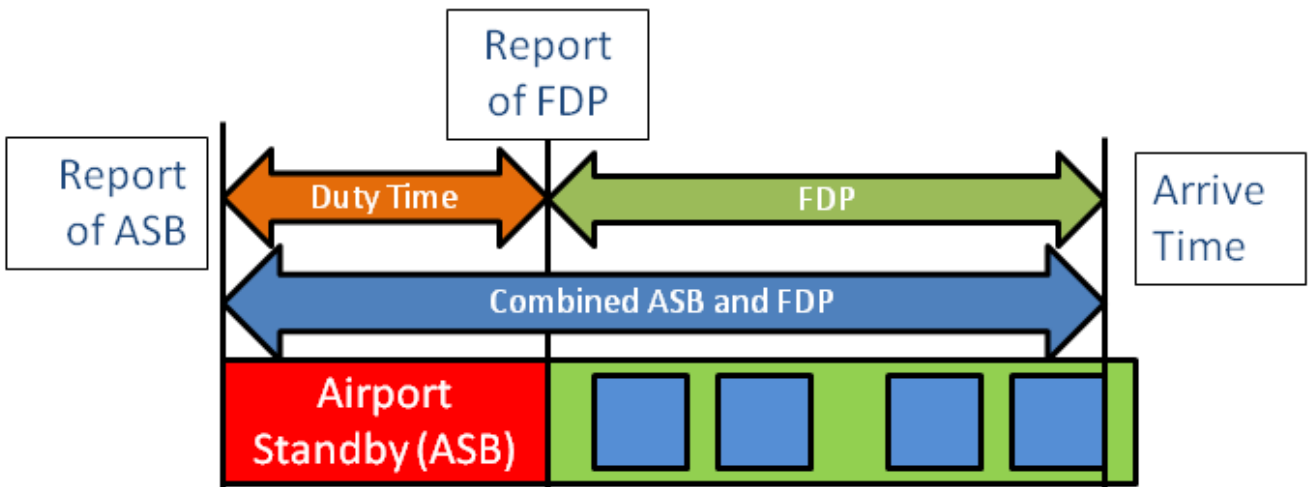
CAR-OPS 1.1127(k)—Delayed Reporting Time in a Single FDP

Amount of Notification	FDP Limits Based ON	FDP Start Time
≥ 10 hours	Revised FDP Start	Revised FDP Start
≥ 4 hours and < 10 hours	Is the more limiting of: <ul style="list-style-type: none"> • Original FDP Start • Revised FDP Start 	Original FDP Start Time plus 4:00
< 4 hours	Original FDP Start	Original FDP Start

Airport Standby (ASB)

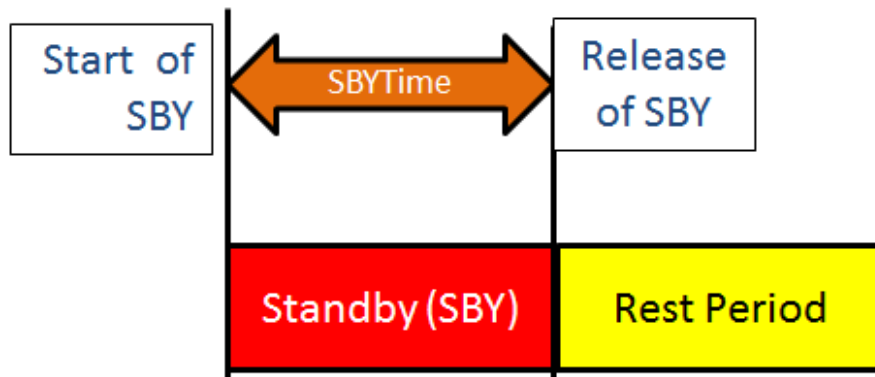


ASB that does not lead to an FDP.

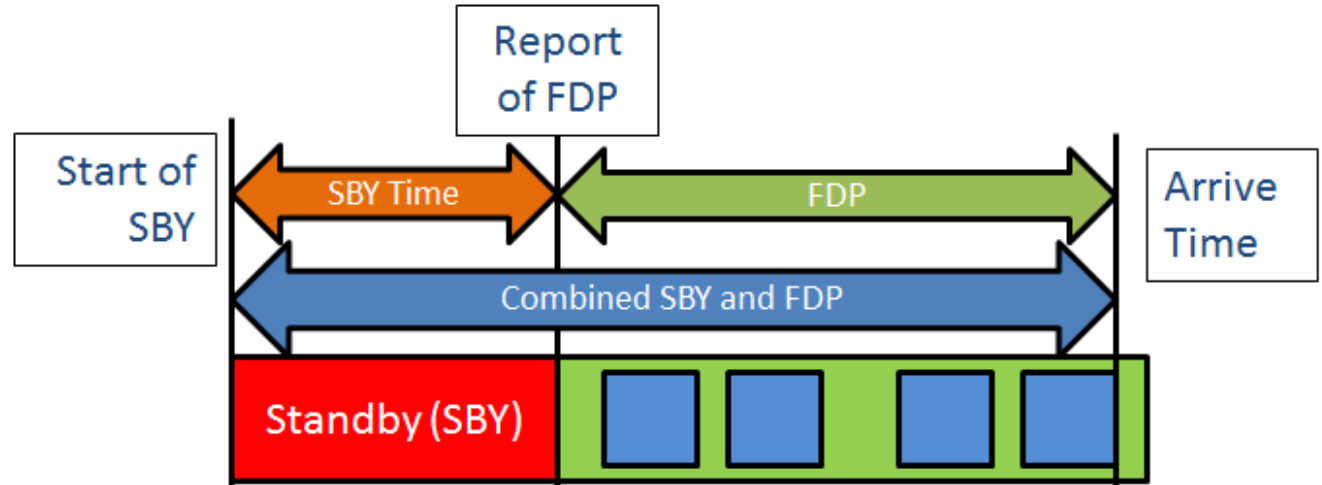


ASB that leads to an FDP.

- 1) FDP is considered to start at start of ASB.
- 2) A CM assigned to an ASB that does not lead to a FDP must be released into a rest period no less than 12:00.
- 3) All time on ASB/Combined ASB & FDP counts towards the Cumulative Duty Limitations under CAR-OPS 1.1125.

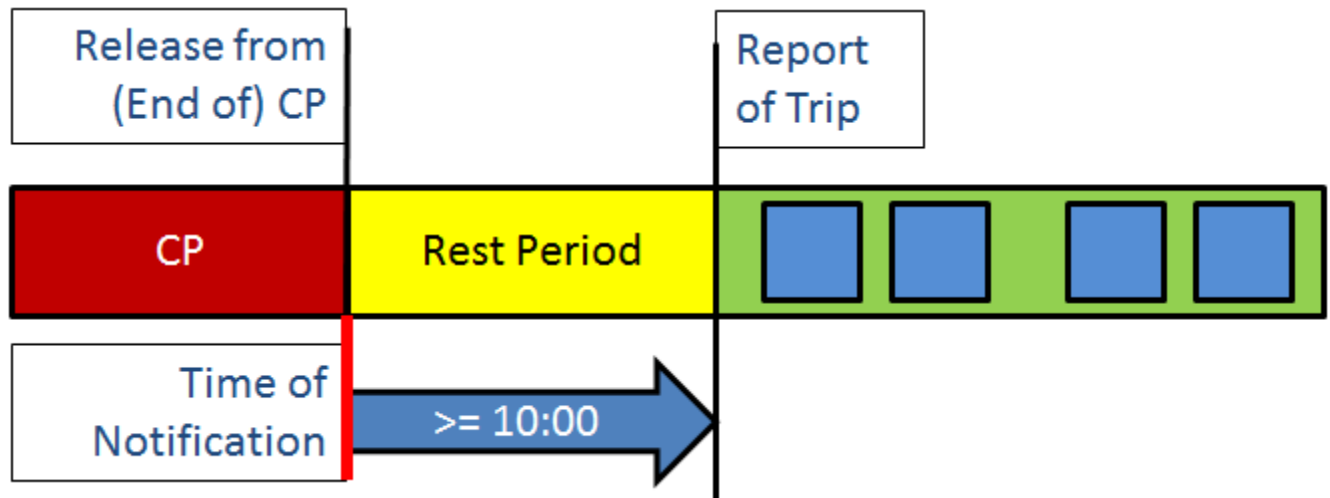
Standby (SBY):

SBY that does not lead to an FDP.



SBY that leads to an FDP.

- 1) A CM assigned to an SBY that does not lead to a FDP must be released into a rest period no less than 12:00.
- 2) FDP is considered to start at start of SBY when a CM is assigned to report for an FDP.
- 3) All time on SBY/Combined SBY & FDP counts towards the Cumulative Duty Limitations under CAR-OPS 1.1125.

Contactable:

The minimum time from the time a CM is notified until the CM is required to report for a FDP/ASB/SBY is 10:00.

The time a CM serves on CP is not regarded as Rest for the purposes of Day off requirements and rest requirements.

CAR-OPS 1.1130 Ultra long range (ULR) operations

ULR operations require specific approval by the GCAA, unless otherwise approved; no CM may accept an ULR operation.

Approved ULR operations are defined in the Operations Manual (OM).

Unless otherwise specified, the General Civil Aviation Authority document Civil Aviation Advisory Publication, CAAP 14 and its applicable parts with associated amending notices, shall be the guidelines and basis of assessment of operator ULR operations.

CAP-371

12 Standby Duty

- 12.1 The time of start, end and nature of the standby duty must be defined and notified to crew members. The time a standby duty starts determines the allowable FDP, except that when the actual FDP starts in a more limiting time band then that FDP limit will apply. However, when standby is undertaken at home, or in suitable accommodation provided by the operator, during the period 2200 to 0800 hours local time and a crew member is given 2 hours or less notice of a report time, the allowable FDP starts at the report time for the designated reporting place.
- 12.2 When a crew member is on standby duty on immediate readiness at an airport, then the allowable FDP is calculated using the start time of the standby duty.
- 12.3 If a crew member is called out from standby, the standby duty will cease when that individual reports at the designated reporting point.
- 12.4 The following limits apply:

Duty	Maximum Duration
Standby Duty (all cases)	12 hours
Standby followed by an FDP	As in Case A and B below

Case A

If a crew member is called out from standby to conduct an FDP before completing 6 hours standby duty then the total duty period allowed is the sum of the time spent on standby and the FDP allowable from paragraph 13, Tables A, B, C, or paragraph 23, Table D.

Case B

If a crew member is called out from standby to conduct an FDP after completing 6 or more hours standby duty, then the total duty period allowed is the sum of all the time spent on standby and the allowable FDP, reduced by the amount of standby worked in excess of 6 hours.

- NOTES:** 1 The method of adding time spent on standby to cumulative totals is stated in paragraph 22.
- 2 The reference to 'total duty period' applies **only** to the sum of the standby time achieved + the allowable FDP obtained from paragraph 13. On the day, for cumulative duty totals and for minimum rest purposes, the total duty achieved will be standby time achieved + FDP achieved + post flight duties + any positioning.

- 12.5 When any period of standby finishes, during which a call-out has not occurred, at least 12 hours rest must follow prior to the next duty period. Similarly, following the end of a contactable period or periods, at least 10 hours must elapse prior to the next duty period.