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Certification Specifications, Acceptable Means of Compliance and Guidance Material to Annex II (Part-ARO) and Annex III (Part-ORO) to Regulation (EU) No 965/2012, Issue X, Amendment X

Annex X to ED Decision 2026/XXX/R

'CS, AMC and GM to Part ARO and Part ORO — Issue X, Amendment X

These CS, AMC and GM to Part-ARO and to Part-ORO Amendment/Issue X document (Annex to ED Decision 2026/XXX/R) shows deleted text, new or amended text as follows:

— deleted text is ~~struck through~~;

— new or amended text is highlighted in blue;

— an ellipsis '[…]' indicates that the rest of the text is unchanged.

Disclaimer

This document is provided for information purposes only. No quality control has been performed.

Note to the reader

In amended, and in particular in existing (that is, unchanged) text, 'Agency' *is used interchangeably with* 'EASA'. *The interchangeable use of these two terms is more apparent in the consolidated versions. Therefore, please note that both terms refer to the* 'European Union Aviation Safety Agency (EASA)'.

CS FTL.1

CS FTL.1.100 Applicability

These Certification Specifications are applicable to ~~commercial air transport by~~ CAT operations with aeroplanes for the purpose of scheduled and charter operations~~, excluding emergency medical service (EMS), air taxi and single pilot operations~~.

Rationale

This CS is updated as the reference to EMS and air taxi is removed. For single-pilot scheduled/charter the applicable requirements remain under Subpart FTL (A) and CS-FTL.1.

CS FTL.2

CERTIFICATION SPECIFICATIONS AND GUIDANCE MATERIAL FOR COMMERCIAL AIR TRANSPORT BY AEROPLANE – AIR TAXI AND AEMS OPERATIONS

CS FTL.2.101 Applicability

(a) These Certification Specifications are applicable to CAT operations with aeroplanes for the purpose of air taxi and AEMS operations.

(b) An operator may decide to apply CS-FTL.1 to air taxi operations or AEMS operations. In that case, the operator applies the entire Subpart FTL (A) and CS-FTL.1.

Rationale

AEMS and air taxi operators conducting a mix of operations including scheduled and non-scheduled, will have the possibility to apply Subpart FTL (A) and CS-FTL.1 for convenience, instead of Subpart FTL (B) and CS FTL.2. Once having decided to conduct air taxi/AEMS operations under CS-FTL.1, however, the operator may not alternate between CS-FTL.1 and CS-FTL.2 in search of a more favourable regime.

CS FTL.2.201 Home base

(a) The home base assigned to an aircrew member is either a single airport or an airport system consisting of two or more airports serving the same city.

(b) Any change of home base is notified in advance to enable the aircrew members concerned to plan adequate rest prior to the change and to make proper arrangements for travelling from their residence to the new home base and vice versa. The operator defines a time frame for the advanced notification of a home base change in its IFTSS. A change of home base cannot be made while the aircrew member is in rotation.

Rationale

In scheduled and charter aeroplane operations, the concept of 'home base' is typically centred on a single airport. This concept is intended to mitigate fatigue risk by preventing crew from commuting

from their place of residence to different or distant airports within an airport system for duty, which could otherwise erode their limited rest opportunities between shifts.

In air taxi and AEMS operations, the duty assignment structure—consisting of large duty blocks with rest periods away from home base, is considered a mitigating factor. Many air taxi and AEMS pilots operate on multi-day rotations. During these rotations, rest periods often occur at the deployment location (e.g., a hospital, a remote base, or a hotel near the operating area), not at the pilot's home base.

Therefore, the home base airport in air taxi and AEMS operations does not necessarily have to be a single airport location. It may be either a single airport or a city airport system consisting of several airports.

An airport system refers to a coordinated network of airports within a specific geographic area—such as a city, region, or state—that collectively support air transportation needs. This system encompasses various types of airports, including major commercial hubs and general aviation airports, each serving distinct roles to manage air traffic efficiently and meet diverse aviation demands.

Major cities like Berlin and Munich operate multiple airports, including international hubs and smaller regional airports.

The London airport system comprises Heathrow, Gatwick, Stansted, Luton, and London City airports, collectively handling a substantial portion of the UK's air traffic.

CS1 FTL.2.206 Flight duty period (FDP) — maximum basic daily FDP

(a) The maximum basic daily FDP of acclimatised aircrew operating with a two-pilot flight crew is limited to the values specified in Table 2a.

***Table 2a*. Maximum basic daily FDP — acclimatised aircrew — two pilots**

Start of FDP at reference time	FDP duration in hours		
	Up to 4 sectors	5 sectors	6 sectors
0600–1329	13:00	12:30	11:30
1330–1359	12:45	12:15	11:15
1400–1429	12:30	12:00	11:00
1430–1459	12:15	11:45	10:45
1500–1529	12:00	11:30	10:30
1530–1559	11:45	11:15	10:15
1600–1629	11:30	11:00	10:00
1630–1659	11:15	10:45	09:45

1700–0459	11:00	10:30	09:30
0500–0514	12:00	11:30	10:30
0515–0529	12:15	11:45	10:45
0530–0544	12:30	12:00	11:00
0545–0559	12:45	12:15	11:15

Note: For more than six sectors, the maximum basic daily FDP is reduced by 30 minutes per additional sector down to a maximum basic daily FDP of 9 hours.

(b) The maximum basic daily FDP of acclimatised aircrew in single-pilot operations is either one of the following:

(i) in accordance with Table 3a, provided that the flight time for each sector is limited to 4 hours with autopilot and to 2 hours without autopilot:

Table 3a. **Maximum daily FDP — acclimatised aircrew — single-pilot**

Start of FDP at reference time	**FDP duration in hours**						
	Up to 4 sectors	**5 sectors**	**6 sectors**	**7 sectors**	**8 sectors**	**9 sectors**	**10 or more sectors**
0600–0659	10:00	09:15	08:45	08:15	08:00	08:00	08:00
0700–0759	10:30	09:45	09:15	08:45	08:15	08:00	08:00
0800–1259	11:00	10:15	09:45	09:15	08:45	08:15	08:00
1300–1429	10:30	09:45	09:15	08:45	08:15	08:00	08:00
1430–1659	10:00	09:15	08:45	08:15	08:00	08:00	08:00
1700–2159	09:00	08:15	08:00	08:00	08:00	08:00	08:00
2200–0359	08:00	08:00	08:00	08:00	08:00	08:00	08:00
0400–0559	09:00	08:15	08:00	08:00	08:00	08:00	08:00

or

(ii) 10 hours, regardless of the number of sectors, provided that all the following conditions are met:

(A) The entire operation takes place within the range of 0700 to 2159 hours;

(B) the operation is conducted under VFR;

(C) the operation takes place between preselected aerodromes;

(D) the duration of each sector is 1 hour or less.

(c) The maximum basic daily FDP of aircrew in an unknown state of acclimatisation in single-pilot operations is 8 hours.

(d) The maximum basic daily FDP of aircrew in an unknown state of acclimatisation operating with a two-pilot flight crew is limited to the values specified in Table 4a:

***Table 4a*. Maximum basic daily FDP — unacclimatised flight crew — two pilots**

Number of sectors	1- 4	5	6 (or more)
FDP duration in hours	11:00	10:30	not allowed

Rationale

Table 2a specifies the maximum basic daily FDP without extensions of acclimatised aircrew in operations where the flight crew consists of two pilots.

Both the 2015 Study and the Report on the Assessment of Proposed FTL Tables for Air Taxi and Emergency Medical Services Operations, published with the NPA 2017-17, recognised that the total amount of flying contributes more significantly to aircrew fatigue rather than the number of sectors. Accordingly, both reports recommended a regulatory relaxation of the strict correlation between the maximum FDP and the number of sectors.

Following the publication of NPA 2017-17, stakeholders highlighted that air taxi and AEMS operations typically involve 1 to 4 sectors per FDP and requested that the regulatory framework reflect this operational reality.

In response, the focused NPA 2024-106 amended the original proposal and introduced a revised table. The first column of Table 2a now reflects maximum FDP values specifically for up to four sectors. In addition, the maximum FDP in the most favourable time band of the day (i.e. between 06:00 and 13:29) was lowered to 13 hours unlike the higher values proposed in NPA 2017-17. This approach is believed to:

- *better reflect typical operational patterns in air taxi and AEMS;*
- *facilitate the practical implementation of FDP limits by reducing granularity and simplifying the number of steps;*
- *support potential convergence between the FDP rules for scheduled/charter operations and those for air taxi/AEMS;*
- *align with two biomathematical models that indicated a low predicted fatigue risk.*

Table 3a establishes the maximum FDP for single-pilot operations in air taxi and AEMS. In response to stakeholder feedback to NPA 2024-106, EASA introduced Table 3a using the same FDP values as those applicable to single-pilot scheduled/charter operations. As an alternative to Table 3a, operators may apply a flat FDP value of 10 hours, regardless of the number of sectors, provided certain specified conditions are met.

Table 4a sets out the maximum FDP limits for unacclimatised flight crew. These limits were derived using the lowest maximum daily FDP values from Table 2a, specifically for duties commencing during the most unfavourable circadian window—between 17:00 and 04:59—thereby capturing night operations.

As a result, unacclimatised aircrew are subject to shorter allowable FDPs compared to acclimatised crew performing the same number of sectors.

CS2 FTL.2.206 Flight duty period — extensions

(a) Under FRMS, the extended maximum daily FDP of aircrew in an unknown state of acclimatisation operating with a two-pilot flight crew is limited to the values specified in Table 5a.

***Table 5a*. Extended maximum daily FDP — unacclimatised aircrew — two pilots — FRMS**

Number of sectors	1-4	5	6 (or more)
FDP duration in hours	12:00	11:30	11:00

(b) The extended maximum basic daily FDP, without on-board rest, of acclimatised aircrew operating with a two-pilot flight crew is limited to the values specified in Table 6a:

***Table 6a*. Extended maximum basic daily FDP without on-board rest— acclimatised aircrew – two pilots**

Start of FDP at reference time	**FDP duration in hours**		
	1–2 sectors	**3-4 sectors**	**5 sectors**
0500–0614	No extension	No extension	No extension
0615–0629	13:15	13:15	12:45
0630–0644	13:30	13:30	13:00
0645–0659	13:45	13:45	13:15
0700–1229	14:00	14:00	13:30
1230–1259	14:00	14:00	13:00
1300–1329	14:00	14:00	12:30
1330–1359	13:45	13:45	No extension
1400–1429	13:30	13:30	No extension
1430–1459	13:15	13:00	No extension
1500–1529	13:00	12:30	No extension
1530–1559	12:45	No extension	No extension
1600–1629	12:30	No extension	No extension

1630–1659	12:15	No extension	No extension
1700–1729	12:00	No extension	No extension
1730–0459	11:45	No extension	No extension

(c) The extended maximum daily FDP, due to on-board rest in the air and augmentation of the minimum flight crew of two pilots, is in accordance with the following conditions:

(1) if the minimum flight crew of two pilots is augmented with one additional flight crew member, the extended maximum daily FDP is:

(i) 15 hours with Class B rest facilities; or

(ii) 16 hours with Class A rest facilities;

(2) if the minimum flight crew of two pilots is augmented with two additional flight crew members, the extended maximum daily FDP is:

(i) 16 hours with Class B rest facilities; or

(ii) 17 hours with Class A rest facilities;

(3) the minimum on-board rest in the air is a continuous 1-h-30-min rest period for each aircrew member and a continuous 2-h rest period for those members of the flight crew who are at the controls during the last landing;

(4) the on-board rest facilities to be used while the aeroplane is in the air provide sufficient light and sound mitigation to enable each aircrew member to sleep and comply with the following specifications:

(i) for 'Class A rest facility', a dedicated crew-rest area with bunk(s) or other cabin surfaces (such as divans, berthable seats, convertible divans) with adequate length and width to accommodate an average adult, that allows for a flat or near flat sleeping position. It reclines to at least 80° back angle to the vertical;

(ii) for 'Class B rest facility', a seat (such as a club seat) in an aircraft cabin with adequate length and width to accommodate an average adult, that reclines to 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;

(5) the aircrew member is not disturbed while taking on-board rest in the air, in accordance with a procedure established in the operator's IFTSS;

(6) the limits specified in (c)(1) or (c)(2) may be increased by 1 hour if the FDP includes a continuous 2-h-30-min on-board rest period for each flight crew member at the controls during the final landing and may be further increased by 1 h under FRMS;

(7) all time spent in the on-board rest facility in the air is counted as FDP;

(8) the minimum rest at destination is at least as long as the preceding FDP, or 14 hours, whichever is greater;

(9) the first sector of the FDP may be operated by a non-augmented flight crew only if the subsequent sectors allow for each member of the augmented flight crew to take their minimum on-board rest.

Rationale

Table 5a specifies the maximum FDP limits (with extensions) of aircrew operating with two-pilot flight crew, in unknown state of acclimatisation, under an FRMS. The aircrew operating under these limits would benefit from the additional protection provided by managing these duties within a Fatigue Risk Management System (FRMS).

Table 6a specifies the maximum FDP limits (with extensions) without on-board rest, of acclimatised aircrew operating with two-pilot flight crew. These values are based on the same fatigue mitigation principles applicable to scheduled and charter operations.

Point (c) specifies the conditions for extension of the maximum FDP due to augmentation of the flight crew and provision of on-board rest while the aeroplane is airborne.

Class A and Class B on-board rest facilities used in flight do not necessarily include separation from the passenger compartment. This reflects the operational reality that not all aircraft used in air taxi and AEMS operations can ensure full physical separation from the cabin or provide optimal comfort in terms of noise, light, and disturbances. However, this does not relieve the operator of the obligation to mitigate, to the extent possible, the impact of such environmental factors on the quality of rest.

Regarding on-board rest facilities, the proposed Class A specification allows for the following options:

1) true bunks in crew rest compartments/areas isolated from the passenger cabin; or

2) divans or berthable seats that offer flat/near flat sleeping surface.

Examples of small / light-to-superlight business aircraft whose cabin surfaces (divans, berthable seats, convertible divans) can provide a flat or near-flat sleeping surface for crew rest (i.e., not necessarily a separate certified crew-rest compartment).

1. *Pilatus PC-24 — aft side-facing divan that converts into a full-size bed*
2. *Embraer Phenom 300 (and 300E) — two-person side divan (retrofit option)*
3. *Cessna / Textron Citation family (Latitude / XLS / Longitude / various Citations) — divans and aftermarket berth systems. Many Citation models offer side-facing divans (factory or STC).*
4. *Embraer Legacy / Praetor (mid-size siblings) and other midsize business jets — berthable divans / berthable club seats*

One notable difference from scheduled and charter operations is the requirement that both PF and PM have a continuous 2-h rest period with emphasis on rest being within proximity to final approach. Repositioning flights following long-haul sectors are common in AT operations. Both the PF and PM require extended onboard rest to maintain alertness and operational safety during these subsequent sectors. Relief pilots who are not actively controlling the aircraft, can be allocated reduced rest of 90 minutes, aligning operational needs with safety considerations.

GM1 CS2 FTL.2.206 (c)(3) Flight duty period — extensions

ON-BOARD REST ALLOCATION FOR LANDING FLIGHT CREW (AUGMENTED FLIGHT CREW)

When a flight duty period (FDP) is operated with augmented flight crew and includes scheduled on-board rest, the allocation of on-board rest periods to individual flight crew members should aim to optimise the alertness of those flight crew members who will be at aircraft controls during the final landing. Both pilots assigned to operate the final landing (Pilot Flying and Pilot Monitoring) should receive a period of continuous 2-h on-board rest.

It is recommended that the pilot at the controls for the final landing be scheduled to take his/her on-board rest during the latter portion of the on-board rest sequence. The other flight crew member assigned to operate the final sector should receive his/her on-board rest prior to that of the landing pilot, to ensure effective monitoring and decision support during the critical phases of flight.

Rationale

This guidance material clarifies the requirement that both pilots assigned to operate the landing (Pilot Flying and Pilot Monitoring) should receive a continuous on-board rest period of at least 2 hours to support alertness and operational safety. It also recommends a rest sequence that ensures the final rest period is taken by the pilot landing the aeroplane as close as practicable to the time of descent and landing.

GM2 CS2 FTL.2.206 (c)(4) Flight duty period — extensions

ON-BOARD REST FACILITY

When used to extend the maximum daily FDP, the primary purpose of an on-board rest facility is to enable the flight crew to obtain effective and restorative sleep, not merely to comply with the technical specifications of seat design or installation.

Where a Class A rest facility is located within or directly adjacent to a galley area, appropriate soundproofing measures should be in place to ensure that crew rest is not compromised by operational noise or disturbance. If such measures are not provided, the galley should not be used during crew rest periods to preserve rest quality.

In cases where neither sound mitigation nor the non-use of the galley is feasible, the on-board rest facility should not be considered to meet the standard of a Class A facility and should instead be treated as a Class B rest facility for the purposes of FDP extension and fatigue risk management.

Rationale

This GM was suggested by a competent authority and further complemented by a crew union to address specific issues encountered in business aviation. It explains the objectives of on-board rest facilities and the need to ensure appropriate soundproofing to shield the crew from operational noise or other disturbances.

Soundproofing can include curtains with acoustic and light-blocking properties; partition walls or bulkheads between the rest facility and galley/aisle areas; sound-dampening panels or materials integrated into the rest area structure; doors with sealing features to minimize noise intrusion; and any other design feature that insulates the rest area from visual, acoustic, or physical interference.

CS3 FTL.2.206 Flight duty period (FDP) — night duties and late finish duties

The operator applies appropriate FRM to actively manage the fatiguing effect of night duties and late finish duties, assigned in accordance with CS1 FTL.2.206 or CS2 FTL.2.206, in relation to the surrounding duties and rest periods.

Rationale

Night duties and late finish are assigned under appropriate FRM mitigation measures in a similar manner as was recommended for scheduled and charter operations by the Study on effectiveness of flight time limitations [1] and implemented by ED Decision 2023/023/R[2].

GM1 CS3 FTL.2.206 Flight duty period (FDP) — night duties and late finish duties

NIGHT DUTIES AND LATE FINISH DUTIES — APPROPRIATE FRM

The operator should use the following GM for its appropriate FRM mitigation measures:

— GM1 CS FTL.1.205(a)(2);
— GM2 CS FTL.1.205(a)(2);
— GM3 CS FTL.1.205(a)(2);
— GM4 CS FTL.1.205(a)(2); and
— GM5 CS FTL.1.205(a)(2).

Rationale

This GM refers to the GM introduced in CS-FTL.1 by EDD 2023/023/R, to support the implementation of appropriate FRM for night and disruptive duties.

CS4 FTL.2.206 Flight duty period (FDP) — commander's discretion in unforeseen operational circumstances

The commander may modify the limits on flight duty, duty and rest periods in accordance with point ORO.FTL.206(f) in the case of unforeseen operational circumstances, about which he or she has been informed at or after reporting, as follows:

(a) The maximum FDP limits specified in CS1 FTL.2.206(a) or (d), CS2 FTL.2.206(c) or CS FTL.2.221, of aircrew operating with a two-pilot flight crew, may be extended by up to 2 hours unless the flight crew has been augmented, in which case the maximum FDP limits may be extended by up to 3 hours;

(b) The maximum FDP limits specified in CS1 FTL.2.206 (b) or (c), of aircrew operating with a single-pilot flight crew, may be extended by up to 1 hour;

1 https://www.easa.europa.eu/en/document-library/general-publications/effectiveness-flight-time-limitation-ftl-report
2 https://www.easa.europa.eu/en/document-library/agency-decisions/ed-decision-2023023r

(c) If on the final sector within an FDP the allowed increase under (a) or (b) is exceeded due to unforeseen operational circumstances after take-off, the flight may continue to the planned destination aerodrome or alternate aerodrome;

(d) The rest period away from home base preceding an FDP may be reduced but shall not be less than 10 hours;

(e) The commander consults all aircrew members, as applicable, on their alertness levels before deciding on extending the FDP or on reducing the rest period;

(f) In case of unforeseen operational circumstances which could lead to severe fatigue, the commander may reduce the actual FDP and/or increase the rest period, as necessary, to eliminate any detrimental effect on flight safety;

(g) The commander submits a report to the operator whenever an FDP is increased, or a rest period is reduced at his or her discretion. Where the FDP extension or rest period reduction exceeds 1 hour, the operator submits a copy of the report, including its comments, to the competent authority within 28 days of the event.

Rationale

Most of the content of this CS is drawn from the corresponding requirements applicable to scheduled and charter operations, and is supplemented with material relevant to single-pilot operations.

However, the expression 'unforeseen circumstances, which start at or after reporting' which appears in the text relevant to scheduled and charter operations is replaced by 'unforeseen operational circumstances about which he or she has been informed at or after reporting…'. This is to clarify that the time range refers to when conditions allowing the exercise of commander's discretion are present and not to the unforeseen circumstances themselves. In terms of safety of flight, what is important is to avoid contacting the commander during their rest time rather than to know when unforeseen circumstances have occurred.

GM1 CS4 FTL.2.206 (a) Flight Duty Period (FDP) — commander's discretion in unforeseen operational circumstances

CMD EXTENSION OF AN FDP EXTENDED BY THE OPERATOR

If an FDP has already been extended under CS2 FTL.2.206(b), the allowable limits for commanders' discretion specified in CS4 FTL.2.206 (a) are reduced by the duration of the first extension.

Rationale

This GM clarifies that when an operator extension (e.g. of 1 hour) has already been applied, any subsequent use of CMD should account for this extension, within with established CMD limits.

CS5 FTL.2.206 Flight duty period (FDP) — delayed reporting

(a) The operator may delay the reporting time if a procedure for delayed reporting is established in its IFTSS pursuant to point ORO.FTL.206 (g). A delayed reporting procedure specifies:

(1) minimum and maximum notification times required to allow aircrew members to remain in their place of rest until the revised reporting time, without unnecessary disturbance;

(2) methods used to communicate the new reporting time to the affected aircrew members;

(3) measures to avoid disruption of sleep patterns, including limits on last-minute notifications and procedures for confirming that rest has not been adversely impacted;

(4) mitigation strategies used when the reporting time is delayed by more than 4 hours, particularly addressing the increased risk of fatigue and the need for rest adjustments or aircrew reassignment where appropriate;

(5) that the FDP begins at the newly notified reporting time, unless a fatigue risk assessment indicates that the crew member's rest has been disturbed, in which case the operator evaluates the need for duty reassignment or additional rest to ensure fitness for duty.

(b) The number of successive notifications is maximum two.

(c) When an aircrew member is notified of a delay of 10 hours or more in reporting time and he or she is not further disturbed by the operator, the delay of 10 hours or more counts as a rest period.

(d) The operator keeps records of delayed reporting.

Rationale

Delayed reporting in air taxi and AEMS operations should be possible without consequences on the FDP, unlike in scheduled and charter operations, as long as the notification reaches the aircrew concerned prior to leaving their home or suitable accommodation and their rest or wake-up has not been disrupted.

Delayed reporting may be used both in unforeseen operational circumstances and for other operational demands. The operator is required to specify minimum and maximum notification times required to allow aircrew members to remain in their place of rest until the revised reporting time, without unnecessary disturbance. In addition, measures to avoid disruption of sleep patterns, including limits on last-minute notifications and procedures for confirming that rest has not been adversely impacted, should be put in place.

The operator is also under the obligation to apply mitigation strategies when the reporting time is delayed by more than 4 hours, particularly addressing the risk of fatigue and the need for rest adjustments or aircrew reassignment.

This CS also limits the number of successive notifications for delayed reporting to two.

GM1 CS5 FTL.2.206 Flight duty period (FDP) — delayed reporting

NOTIFICATION TIMES

The operator is expected to notify the aircrew concerned of the new reporting time as soon as it is confirmed. Ideally, the notification is made at least 2–4 hours before the original reporting time.

If the delay is confirmed less than 2 hours before the original reporting time, the operator is recommended to assess whether the crew's rest or wake-up has already been disrupted and apply appropriate fatigue mitigations (e.g., rest extension or duty reassignment).

Rationale

This GM recommends that the operator notifies aircrew of a revised reporting time as early as possible—ideally 2–4 hours in advance—and, if confirmed later, assess any rest disruption and apply appropriate fatigue mitigations to minimise fatigue risk, even when the schedule remains legally compliant.

In practice, unlike in a scheduled airline, departure times are not fixed in advance and are often notified to the crew shortly before flight. Changing a reporting time before it is officially notified to the aircrew is not 'delayed reporting' in the regulatory sense. If the exact departure time has not yet been communicated to the crew, the operator can still adjust it as needed.

GM2 CS5 FTL.2.206 Flight duty period (FDP) — delayed reporting

MITIGATION STRATEGIES

Delayed reporting often creates:

- long wakefulness before duty,
- fragmented or mistimed sleep, and
- fatigue risk that is not visible in FDP calculations.

The operator is expected to minimize the risk potential of aircrew fatigue when schedules shift, even if legally compliant. For that purpose, the operator may consider one or more of the following:

- providing stable reporting times as early as possible;
- avoiding last-minute changes after the crew has mentally and physically prepared for rest or duty;
- using a "cutoff" time;
- minimising duty shifts that move the report time outside the crew's optimal circadian window;
- avoiding major forward or backward shifts in reporting time from one day to the next;
- reassess and, if necessary, adjust the crew's rest opportunity before the aircrew starts duty;
- using a structured fatigue reporting process;
- actively analysing data on delays and rescheduling to spot trends or high-risk patterns; and
- building buffers into the assigned FDP to absorb potential delays or late departures.

Rationale

If changes in reporting times are anyway necessary, the operator should minimize the risk potential of aircrew fatigue when schedules shift, even if legally compliant with FTL. This GM provides some examples of mitigation strategies that may be used in such cases.

CS FTL.2.216 Positioning

For the purpose of assignment of a non-operating aircrew member to positioning duty pursuant to point ORO.FTL.216, the operator's IFTSS specifies the following:

(a) Where the positioning time exceeds 1 hour, or where more than one main transport mode is used, the maximum FDP is reduced by 30 minutes;

(b) Where a motor vehicle driven by the aircrew member is used for positioning and the driving time exceeds 1 hour, the maximum daily FDP is reduced by 30 minutes;

(c) Main transport modes include scheduled airline flights, trains, or intercity buses/coaches, and exclude private vehicles driven by the crew member or taxis;

(d) The reporting times for the purpose of positioning account for necessary travel procedures relevant to the mode of transport such as registration of passengers and baggage, security screening, disembarking, baggage collection, etc.

Rationale

Long distances travelled on positioning and the change of transport modes may be factors influencing subsequent onset of fatigue and cannot be the crews' decision only. According to the 2015 EBAA/ECA Study, every 1 hour spent in positioning increases fatigue scores by 0,25. For comparison, 1 hour flight time increases fatigue scores by 0,13.

Positioning prior to operating without an intervening rest period is part of the daily FDP. FDP reductions are necessary if the positioning time is longer than 60 minutes or if the main transport mode is more than one. Main transport mode includes airline, train and intercity coach/buses; excludes taxi or vehicle driven by the aircrew member.

GM1 CS FTL.2.216(a) Positioning

START AND END OF POSITIONING

For non-operating aircrew (i.e., those flying as deadhead passengers) positioning begins at the time and location designated by the operator—either at the home base or at an outstation—when the crew member is required to report for positioning. The operator is responsible for providing transport using one or more main transport modes.

Positioning prior to operating without an intervening rest period ends when the aircrew member reports for the flight as an operating crew member.

Positioning to return to home base or to start a flight duty after an intervening rest period ends upon arrival at the destination.

Rationale

This GM is drafted in response to comments asking for more clarity about the start and end times of positioning duty and suggested that positioning should account for the time necessary to complete travelling procedures specific to the mode of transportation, e.g. registration of passengers and baggage, security checks, disembarking and baggage collection, etc.

CS FTL.2.221 Split duty

For the purpose of extension of the maximum basic daily FDP of aircrew operating with a two-pilot flight crew, pursuant to ORO.FTL.221, the operator's IFTSS specifies the following:

(a) The aircrew is notified of the split-duty extension prior to the start of the FDP;

(b) Only one break on the ground of at least three consecutive hours (the split-duty break) is used to extend the maximum basic daily FDP;

(c) The aircrew is not disturbed during the split-duty break;

(d) The extension is half the duration of the split-duty break;

(e) During the split-duty break the aircrew is provided with accommodation or a Class A on-board rest facility unless point (f) applies. If a Class A facility is used, it allows control of light and temperature and provides noise and disturbance isolation.

(f) If the split-duty break is 6 hours or longer, or if it encroaches on the WOCL, then suitable accommodation is provided;

(g) The split-duty break excludes the time allocated to post-flight duties, pre-flight duties, and travelling. The minimum total time allocated to post-flight duties, pre-flight duties, and travelling is 30 minutes. Where longer times are required, the operator specifies the applicable times;

(h) Split duty is not combined with extensions due to on-board rest in the air under CS2 FTL.2.206;

(i) Any portion of the split-duty break that exceeds six hours, or that encroaches on the WOCL, is not counted toward the maximum FDP extension;

(j) When the split-duty break is notified to the aircrew after reporting for duty on the day of operation, it may be counted toward the maximum FDP extension, provided that:

(1) the aircrew is notified of the extension prior to the start of the split-duty-break and all other specifications are complied with;
(2) for ongoing AEMS missions only, specifications (f) and (i) may not apply;
(3) the commander, having consulted all aircrew members on their alertness levels, accepts its use; and
(4) the aircrew is provided with nutrition.

Rationale

This CS was complemented with additional mitigation measures following the focused NPA 2024-106. Additional conditions were also included to mitigate the effect of unexpected split-duty breaks after the start of the FDP (for example, due to a significant passenger delay after the first sector).

More than one break is fully acceptable, but only one break of more than 3 hours qualifies for the FDP extension. The purpose of the break that permits an FDP extension is to allow for recuperative sleep. The qualifying break for duty extension is treated differently from other breaks during which the aircrew may be interrupted and are not guaranteed an undisturbed sleep opportunity.

For fatigue mitigation purposes, the split-duty break needs to be protected from phone calls; no operational tasking and no expectation of immediate response. If active communication is used during

this qualifying break, presumably disturbing a sleep opportunity, then no extension of the max FDP would be possible. Passive communication (messages, system updates, crew notices) that do not require acknowledgement are generally considered acceptable.

Extending the FDP is not just a matter of hours counting, but a matter of fatigue risk management i.e. the operator should consider the conditions in which flight crews are forced to spend hours waiting to resume work.

Operators operating without a Class A on-board rest facility may use 'accommodation'. The definition of 'accommodation', including the required furniture, is fully applicable, even though it was originally developed with scheduled operations in mind. In addition, operators remain free to develop their own accommodation, provided that it meets the definition of accommodation, where third-party-provided accommodation is, for any reason, not usable.

The specifications for a Class A on-board rest facility are flexible, as they permit a fitted, modular, or otherwise configured facility, provided that it meets the Class A requirements.

As previously explained, the split-duty break that allows an FDP extension should be treated differently from other breaks during which aircrew are required to remain contactable and ready to respond to operational changes. During such other breaks, aircrew are not expected to sleep in an on-board rest facility and may therefore use any facility made available to them; no specific specifications apply in those cases.

As regards paragraph (j), feedback to NPA 2017-17 suggested that air taxi and AEMS operators should be allowed more operational flexibility on the day of operation, after the start of the FDP, for example, due to a significant passenger delay after the first sector, the crew is put into an airport hotel for the duration of the unexpected break. In other words, there should be an opportunity to convert a non-split duty into a split duty and extend the FDP duration on the day of operation.

The nature of air taxi and AEMS activities will often result in changes to the FDP on the day of operations. While this is expected, the potential for increased fatigue risk must also be accounted for.

The specific characteristics of air taxi and AEMS flights require more flexibility when dealing with events outside the operator's control and justify a more differentiated approach. It is not practical to require a detailed advance planning of FDPs in both air taxi and AEMS, the more so as they work with 24-hour readiness periods.

GM1 CS FTL.2.221(i) Split duty

POST- FLIGHT DUTY, PRE-FLIGHT DUTY AND TRAVELLING TIMES

Conditions at airports such as accessibility to the airport infrastructure from a place of rest, time needed for security checks, time to reach the aircraft parking place, and similar factors may have an impact on post- flight and pre-flight duties and travelling times.

It is therefore recommended that post-flight and pre-flight duties and travelling times take into account, as much as possible, the aircraft type, the type of operation and actual airport conditions.

GM2 CS FTL.2.221(j) Split duty

ONGOING AEMS OPERATIONS

In AEMS operations, for example those involving the transport of human organs, flight crew members may be required to remain on the ground for extended and unpredictable periods, often during night hours, while waiting for the completion of medical procedures or the delivery of organs. In such circumstances, it may be impractical or impossible for the crew to leave the airport or aircraft to obtain suitable accommodation.

For this reason, for ongoing AEMS missions only, a split-duty break of 6 hours or longer, or encroaching on the WOCL, may be taken on board the aircraft and counted towards an FDP extension

CS FTL.2.226 Standby and duties at the airport

For the purpose of modification of the limits on flight duty, duty and rest periods pursuant to ORO.FTL.226, the operator's IFTSS specifies the following:

(a) Airport standby (standby in accommodation or Class A rest facility)

(1) When airport standby does not result in the assignment of an FDP, the airport standby is followed by a rest period as specified in point ORO.FTL.236.

(2) If an assigned FDP starts during airport standby, the following applies:

(i) the FDP counts from the start of the FDP. The maximum daily FDP is reduced by any time spent on standby in excess of 4 hours;

(ii) the combined duration of airport standby and assigned FDP as specified in CS1 ORO.FTL.206 or CS 2 ORO.FTL.206 is 16 hours.

(b) Other-standby (standby at home or in a suitable accommodation)

(1) The operator assigns one or more consecutive periods of other-standby. Each individual period does not exceed 24 hours.

(2) A single other-standby period ends when the aircrew member reports for assigned duty at the designated reporting point.

(3) If no duty has been assigned during a single other-standby period, the standby period ends once its scheduled duration has elapsed, and a minimum rest period of 10 hours is provided. However, if the standby period includes an undisturbed sleep opportunity of at least 8 consecutive hours between 22:00 and 08:00 local time, aligned with the aircrew member's acclimatised time zone, during which the aircrew can remain at their place of rest, the 10-hour rest requirement does not apply.

(4) In the case of AEMS operations, if consecutive 24-hour other-standby periods are rostered as part of a multi-day standby duty pattern and the aircrew member is called to perform a duty (medical mission), the standby period continues after the completion of that duty, provided the total duration of a single other-standby period does not exceed 24 hours. Within each 24-hour other-standby period the aircrew member is provided with the opportunity for undisturbed rest of at least 8 consecutive hours between 22:00 and 08:00 local time, during which the aircrew member can remain at their place of rest.

(5) The operator's standby procedures are designed to avoid that the combination of other-standby and assigned FDP(s) leads to more than 18 consecutive hours awake time.

(6) Time spent on other-standby counts as duty time for the purpose of point ORO.FTL.211(a) as follows:

(i) 25 %, if the response time of is 60 minutes or more;

(ii) 50 %, if the response time is less than 60 minutes;

(iii) 25%, if not leading to the assignment of duty.

(7) Once called in, duty begins at the reporting time, not the start of the on-call period.

Rationale

Airport standby is a duty period that has already started when the aircrew reported for the FDP. Hence, this is not a recovery time prior to FDP. It should therefore be possible to use Class A on-board rest facility for airport standby, as long as this facility meets the specified standard in CS2 FTL.2.206 and is in an area that allows the aircrew member to control light and temperature and provides isolation from noise and disturbance.

Mitigations have been foreseen, such as reduction of the maximum FDP by any time spent on airport standby in excess of 4 hours, and limiting the maximum combined duration of airport standby and assigned FDP to 16 hours.

For AEMS operations, in particular, it is crucial to be able to return to other-standby after an assigned mission has finished. Therefore, the possibility for the operator to assign multiple succeeding other-standby periods is further clarified in CS FTL.2.226 compared to NPA 2024-106.

The only way an operator can roster consecutive standby periods is when the other-standby period includes an undisturbed sleep opportunity of at least 8 consecutive hours between 22:00 and 08:00 local time, aligned with the aircrew member's acclimatised time zone, during which the aircrew can remain at their place of rest.

Following NPA 2024-106, changes were introduced into how time spent on other-standby is counted as duty time for the purpose of cumulative duty limits. The NPA's proposal – to count 100% of standby time when the response time is less than 60 minutes – was considered disproportionate when compared to scheduled and charter operations, where only 25% is counted. More broadly, the proposed values were seen as having a significant economic impact on AEMS operations contracted by healthcare authorities and hospitals. Feedback from industry stakeholders and comparable sectors suggested that a lower proportion would be more appropriate.

GM1 CS.FTL.2.226 (b)(5) Standby and duties at the airport

AWAKE TIME

Scientific research shows that continuous awake time in excess of 18 hours can reduce alertness and should be avoided.

It is recommended that when rostering duties and on the day of operation, the operator apply duty assignment procedures, designed to avoid that an FDP taking place immediately after a period of other-standby results in more than 18 consecutive hours awake time. For that purpose, the operator may consider, among other things, the time of the day in which the other-standby takes place, the

frequency of long awake periods in its operations and the severity of their impact on flight crew member fatigue levels.

GM2 CS.FTL.2.226 (b)(6) Standby and duties at the airport

RESPONSE TIME

Response time is the time between the communication of a duty assignment (activation) during other-standby and the reporting time and is specified in the operator's IFTSS. Response time allows aircrew members to prepare themselves for work, from the time of activation to leaving the place of rest, and to arrive from their place of rest to the designated reporting point within a reasonable time.

When arranging for a local transfer from the aircrew member's other-standby location to the designated reporting point, the operator should avoid transfers that exceed 90 minutes and, if possible, should provide suitable accommodation at or near the aircrew reporting point.

CS FTL.2.231 Reserve

For the purpose of assignment of an aircrew member to reserve pursuant to point ORO.FTL.231, the operator's IFTSS specifies the following:

(a) An assigned FDP after reserve counts from the reporting time;

(b) Reserve times do not count as duty periods for the purpose of points ORO.FTL.211 and ORO.FTL.236;

(c) The number of consecutive reserve days within the limits of point ORO.FTL.236(d);

(d) To protect an 8-hour sleep opportunity, the operator rosters a period of 8 hours, taking into account fatigue management principles, for each reserve day during which a flight crew member on reserve is not contacted by the operator;

(e) The minimum notification time for any duty is 10 hours that may include the 8-hour sleep opportunity under (d);

(f) Reserve time does not count as recurrent extended recovery rest;

(g) Methods for communication with aircrew members.

Rationale

This CS mirrors the corresponding one for scheduled/charter operations. For air taxi and AEMS operations, however, CS FTL.2.231 upgrades some of the available GM to the level of CS.

GM1 CS.FTL.2.231(d) Reserve

PROTECTED 8-HOUR SLEEP OPPORTUNITY

The application of fatigue management principles to protect an 8-hour sleep opportunity for each reserve day means that the aircrew members should be able to maintain a sleep pattern consistent with the days immediately before and after the reserve day.

It is recommended that when the operational pattern requires nighttime readiness, the operator should consider shifting the aircrew to a night-duty pattern in the days preceding the reserve day. That is, the crew must already be sleeping during the day before the reserve period begins.

For example, if the operator wishes to schedule a reserve period that allows activation for a duty starting at 22:00, the aircrew should already be on a night shift pattern and continue on that pattern. In this case, the 8-hour sleep opportunity may be set from 12:00 to 20:00, aligning with the crew's circadian rhythm for night duties. To avoid contacting the aircrew during this protected rest period, notification cannot occur later than 12:00 for a 22:00 duty start.

If the aircrew have been sleeping at night (e.g., 22:00–06:00) in the days prior to the reserve, and will revert to that schedule afterward, imposing a one-off daytime sleep (e.g., 12:00–20:00) would violate the principles of fatigue management.

For day shift operations — where the crew's typical sleep pattern is, for example, 22:00 (day before) to 06:00 (on the day of reserve) — the aircrew may be contacted no later than 22:00 the night before, for a duty starting at 08:00 at the earliest. This ensures notification happens outside the protected rest period, while maintaining circadian alignment and providing the required rest.

Rationale

This GM clarifies the application of fatigue management principles to protect the 8-hour sleep opportunity. It is intended to ensure that flight crew members are able to maintain a sleep pattern consistent with the days immediately before and after the reserve day. This replaced the previously used term 'surrounding days'.

When e.g. the operational pattern requires nighttime readiness, the operator should shift the aircrew to a night-duty pattern in the days preceding the reserve day.

If the crew had been sleeping at night in the days prior to the reserve, and will revert to that schedule afterward, imposing a one-off daytime sleep would violate the principles of fatigue management.

GM2 ORO.FTL.231(f) Reserve

ROSTERING OF RESERVE

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. By definition the rest period explicitly excludes reserve.

GM3 CS.FTL.2.231 (g) Reserve

METHOD FOR COMMUNICATION

The method for communication with an aircrew member during reserve should as much as possible avoid interference with sleeping patterns.

CS FTL.2.236 Rest periods

(a) Disruptive schedules

(1) If a transition at home base is planned from a late finish/night duty period to an early start duty period:

(i) the rest period between the two duty periods includes 1 local night; or

(ii) the second duty period is limited to 11 hours and the rest period after the second duty period includes 1 local night.

(2) For an aircrew member performing four or more night duties, early starts or late finishes between two extended recovery rest periods, as defined in point ORO.FTL.236(d), the second extended recovery rest period is extended to 60 hours.

(b) Time zone differences

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

(i) At home base, when returning to home base after a rotation involving a crossing of four or more time zones has finished, the minimum consecutive local nights of rest are specified in Table 7a.

***Table 7a.* Minimum consecutive local nights of rest to compensate for time zone differences**

Time zone difference (h) (*)	Elapsed time since reporting (h) (**)			
	< 48	48–71:59	72–95:59	≥96
≥4 and ≤ 6	2	2	3	3
≤ 9	2	3	3	4
≤ 12	2	3	4	5
	Minimum consecutive local nights			

Notes:

(*) Time zone difference is either:

— between home base time zone and the time zone of the farthest rest location during a rotation involving a crossing of four or more time zones, if the aircrew member is still acclimatised to home base time zone at the end of the rotation; or

— between the time zone of the last known acclimatised location and home base time zone, if the aircrew became acclimatised to a different time zone during a rotation involving a crossing of four or more time zones.

(**) Corresponding time elapsed since reporting is either:

— from reporting at home base for the first duty period in a rotation involving a crossing of four or more time zones, if the aircrew member is still acclimatised to home base; or

— from reporting at the last known acclimatised location, if the aircrew member became acclimatised to a different time zone during a rotation involving a crossing of four or more time zones.

The time elapsed since reporting stops counting when the flight crew member returns to his or her home base for the compensatory rest period during which the operator is no longer responsible for the accommodation of the flight crew.

(ii) During a rotation, the minimum rest following a duty period that involves a crossing of four or more time zones is at least as long as the duty period duration, or 14 hours, whichever is greater.

(2) In the case of an eastward-westward or westward-eastward transition through the time zone of the reference time:

(i) at least 2 local nights of rest are provided prior to the pattern shift, regardless of whether the operator provides accommodation at the transition time zone or whether the transition occurs without a layover;

(ii) the operator applies appropriate FRM prior to the operation to:

— identify the reference time zone where a change in the pattern involves a major circadian phase shift – this is the transition time zone;

— avoid early reporting times or night duties immediately after a transition or, if avoidance is not practicable, plan additional rest days before or after the transition;

(iii) in addition, the operator provides training and awareness to aircrew, rostering personnel and management personnel about the physiological burden of these transitions, and collects fatigue data to validate and refine mitigation measures.

(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) The aircrew member is acclimatised;

(3) The rest period includes a local night;

(4) The rest period takes place at a location no further than 3 time zones away from where the aircrew is acclimatised;

(5) The flight time in the FDP prior to the reduced rest period is no more than 8 hours;

(6) The FDP prior to the reduced rest period is up to four sectors; and

(7) The operator schedules nutrition opportunities such that the sleep opportunity at night is not further reduced and provides meal and drink.

Rationale

Subpart Q lacks appropriate provisions for rest periods that compensate for disruptive schedules and time zone crossings, particularly in the context of air taxi and AEMS operations. As a result, earlier NPA proposals for certification specifications followed the model designed for scheduled operations.

Feedback to the focused NPA 2024-106 indicated that the table specifying minimum consecutive local nights of rest at home base to compensate for time zone differences (Table 7a)—which mirrored the corresponding table for scheduled operations—was not suitable for air taxi and AEMS. Stakeholders argued that the table should be revised to account for 'progressive acclimatisation', ensuring that rest

upon return to home base is proportionate to the aircrew member's circadian disruption relative to the home base time zone.

EASA therefore decided to develop a hybrid model that combines the existing fixed reference clock approach—used in scheduled operations—with a model that accounts for progressive re-acclimatisation to a new time zone during extended rotations. The underlying assumption is that aircrew will gradually adjust to the local time of their operational theatre over the course of a long rotation. EASA believes this approach aligns with the objectives of a scientifically grounded fatigue management: integrating the physiological realism of acclimatisation tracking with the operational stability of the fixed-reference model. The core idea in the hybrid model is to default to home base as the reference point, unless the crew clearly meets the criteria for acclimatisation elsewhere.

The hybrid model is linked to Table 1a. If the aircrew member remains acclimatised to the home base time zone at the end of a rotation, the model accounts for the greatest circadian displacement experienced during the rotation—even if acclimatisation to another time zone did not occur. This approach captures the worst-case scenario for circadian misalignment and reflects the maximum potential circadian stress.

If the aircrew member became acclimatised to a different time zone during the rotation, the model accounts for the shift in the body clock resulting from sufficient time spent in the new time zone and a difference of at least four hours. This covers scenarios where the crew was already acclimatised to another time zone and is now returning to home base.

In this way, the hybrid model maintains the principle that the more fully acclimatised a crew member becomes to a time zone other than their home base, the more compensatory rest is required upon return. Importantly, the model does not ignore fatigue risk simply because the crew's current location matches their last acclimatised time zone—it also considers whether the crew experienced circadian strain beyond that zone.

As regards the minimum rest in the so-called back-to-back rotations—where aircrew remain in operator-provided accommodation at their home base airport mid-rotation—stakeholders argued that limiting the number of times this arrangement can be used, as was proposed in the two NPAs, would create significant scheduling challenges for operators conducting long rotations, as well as for operators with operational bases. This restriction is therefore removed.

The 4-hour threshold

In EASA FTL context, the operator should look at the entire rotation and, if any part of that rotation involves crossing ≥4 hours of time-zone difference from the reference time, then Table 7a applies. ***The 4-hour threshold is used to determine whether the rotation qualifies as long-range/time-zone-disruptive, not whether the first FDP itself crosses that threshold****.*

Alternating rotations/ alternating sequences of duties

Today, "home base" is used as the administrative anchor for many FTL and roster planning requirements for simplification purposes, not a reflection of actual physiology. Now, with this Opinion we change this practice by also considering if acclimatization has shifted to another location. A transition at that new acclimatization point is as important as (or more relevant than) the one "at home base", because acclimatization defines the true reference time. The westward–eastward transition or vice versa should always be measured relative to the current acclimatization time zone, wherever that is (it may be home base).

Two local nights of rest prior to the pattern shift is a proactive fatigue management measure. For comparison, two local nights of rest is the minimum compensatory rest in Table 7a, so this should be an economically viable option.

Example: a Paris-based crew operates Paris → Singapore (eastward, +6h).

Several days in Singapore operating regional routes — they acclimatize to Singapore time.

Next, they operate Singapore → Los Angeles (eastward again, +15h relative to Singapore).

In this case the transition is eastward relative to Singapore, not relative to Paris.

If they then returned to Paris after LA, they'd face a massive westward transition (LA → Paris), again measured against their current circadian alignment -Singapore, and not their contractual home base – Paris.

<u>Reduced rest arrangements</u>

Reduced rest arrangements in the context of predictable airline schedules require a compensation mechanism for mandatory rest extensions and fixed FDP reductions. This assumes predictable start and end times and cannot, therefore, be reliably applied to air taxi and AEMS, because the operator cannot plan rest, FDP length, or sequence structure with the same stability as in scheduled operations. On-demand air-taxi and AEMS operations are fundamentally different: short-notice bookings, variable routings, irregular duty start times, uncertain end times.

Air-taxi operators typically have small pilot pools, no standby aircrew bases, no large rostering department. Mandatory extensions or reductions (as required by 2–5) may make it operationally impossible to accept last-minute flights.

Reduced rest requirements for scheduled operations also tie rest and FDP adjustments to the difference between minimum rest and actual reduced rest. This assumes that fatigue scales linearly with minutes of rest lost and that all duties have similar fatigue impacts. However, in air-taxi operations fatigue drivers are non-linear: night operations, weather diversions, duty unpredictability, long positioning legs, or long waits before late-night returns. Applying a fixed numerical compensation fails to address the real risk and, in some cases, over-compensates when unnecessary and under-compensates when truly fatigued. The "reduced-rest-followed-by-shorter-FDP" configuration does not always match the real fatigue source. A mandatory shorter FDP might happen on a light, easy-fatigue day, while a demanding duty could occur before the reduced rest.

On the other hand, if e.g. an operator must always reduce the next FDP, then the required FRMS cannot optimize fatigue mitigation based on real operational data. The FRMS becomes merely a permission layer on top of prescriptive FTL rather than a performance-based fatigue management system. So, if FRMS is required for reduced rest arrangements, then prescriptive rules should not dictate exact rest extensions, FDP reductions, or fixed limits on reduced rests. FRMS should replace such rules—not coexist with them—so operators can manage fatigue risk in a scientifically valid and operationally feasible way.

AMC/GM to Regulation (EU) 965/2012

GM1 Article 2 Definitions

DEFINITION OF AEMS

AEMS with aeroplanes follows the same emergency-response philosophy as HEMS (cf. GM1 SPA.HEMS.100(a)), but no special performance or operational privileges are required, unlike for helicopters where alleviations from PC1 may apply and an approval under SPA.HEMS is needed.

Air ambulance flights with aeroplanes, where no emergency response is involved, remain standard CAT operations and do not fall under AEMS. When a mission does not meet the criteria for AEMS, the flight is treated as an air taxi flight.

How does an operator determine urgency before the patient is seen? The decision to classify a flight as AEMS rests with a medical professional — not with the pilot. Urgency is typically based on dispatch centre triage codes; trauma mechanism classifications; reported symptoms; etc.

These are mission-classification tools, not clinical severity scores. Patient severity is based on actual clinical evaluation of the patient once the team arrives. The NACA (National Advisory Committee for Aeronautics) Score is a clinical severity score of a particular patient's condition and is commonly used in pre-hospital emergency medicine for medical decision-making. It can support operational decisions (e.g., is an AEMS mission justified?), but for non-patient flights (carrying only personnel or supplies), NACA score may not be assigned.

All personnel involved, especially medical staff and aircrew, should fully understand the regulatory and operational implications of declaring a flight as an emergency (e.g. more flexible flight time limitation provisions and priority access to airspace).

AMC/GM to Subpart AOC of Part-ORO

AMC1 ORO.AOC.125(a) Non-commercial operations of an AOC holder with aeroplanes or helicopters listed on its AOC

FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS

When aircrew members are assigned to perform a series of flights that combine several types of operation (CAT, NCC/NCO) with aeroplanes, the operator should:

(a) comply at any time with ~~the provisions of~~ point ORO.FTL.210 ~~'Flight times and duty periods'~~ or, as applicable, with point ORO.FTL.211~~, the~~ provisions ~~of Council Regulation (EEC) No 3922/91 (EU-OPS, Subpart Q), to ensure compliance with Subpart FTL for any CAT operation~~; and

(b) include any combination of types of operation in its safety risk management process to ensure that the fatigue risks arising from such operations do not affect the CAT operation.

Rationale

This AMC is amended to include a new reference as the requirements for cumulative flight time and duty periods for air taxi and AEMS are now contained in ORO.FTL.211, and to delete the reference to Subpart Q.

AMC/GM to Subpart FTL (A) of Part-ORO

GM1 ORO.FTL.120 Fatigue risk management system (FRMS)

~~ICAO DOC 9966 — MANUAL FOR THE OVERSIGHT OF FATIGUE MANAGEMENT APPROACHES~~ **FURTHER GUIDANCE**

Further guidance on operators' FRMS ~~processes, appropriate fatigue management, the underlying scientific principles and operational knowledge~~ may be found in ICAO Doc 9966 (Manual for the Oversight of Fatigue Management Approaches).

AMC1 ORO.FTL.120(b)(1) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ **FRMS POLICY**

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

(b) The FRMS policy should ~~define to which~~ specify the operations covered by the FRMS, where applicable ~~applies~~.

(c) The FRMS policy should:

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

(2) state the safety objectives of the operator's FRMS;

(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 the FRMS;

(7) declare management commitment to continuous improvement of the FRMS;

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

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

GM1 ORO.FTL.120(b)(1)(iii) Fatigue risk management system (FRMS)

FATIGUE SAFETY ACTION GROUP (FSAG)

A Fatigue Safety Action Group (FSAG) is widely acknowledged to be an essential component of any dedicated FRMS structure. It is responsible for coordinating all fatigue (risk) management activities in the operator's organisation.

The FSAG is a group comprised of representatives of all stakeholder groups (management, aircrew, scheduling, and other personnel) and, depending on the size and complexity of the operations with any additional specialist experts (i.e. scientists, data analysts, and medical professionals).

The size and composition of the FSAG may vary for different operators but should be appropriate to the size and complexity of the operations covered by the FRMS, and to the level of fatigue risk in those operations. In small operators, a single individual may represent more than one stakeholder group.

The principal functions of the FSAG include but are not limited to:

- monitor and contribute to the establishment, functioning and continuous improvement of the FRMS;
- monitor and contribute to the implementation of all FRMS processes;
- maintain FRMS documentation; and
- be responsible for ongoing FRMS training and promotion.

The FSAG should operate under Terms of Reference specifying, among other things, its interactions with other structures of the operator's organisation.

AMC1 ORO.FTL.120(b)(2) Fatigue risk management system (FRMS)

[…]

AMC2 ORO.FTL.120(b)(2) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS DOCUMENTATION

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

(1) the FRMS policy and objectives;

(2) the FRMS processes and procedures;

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

(4) mechanisms for ongoing involvement of the management, ~~flight and cabin crew members~~ aircrew, FSAG, scheduling, and all other involved personnel;

(5) the FRMS training programmes, training requirements and attendance records;

(6) scheduled and actual flight times, duty periods and rest periods with deviations and reasons for deviations; and

(7) the FRMS outputs including findings from collected data, recommendations, and actions taken.

GM1 ORO.FTL.120(b)(3) Fatigue risk management system (FRMS)

SCIENTIFIC METHOD

[…]

AMC1 ORO.FTL.120(b)(4) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS IDENTIFICATION OF HAZARDS

[…]

AMC2 ORO.FTL.120(b)(4) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS RISK ASSESSMENT

[…]

AMC1 ORO.FTL.120(b)(5) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS RISK MITIGATION

An operator should develop and implement fatigue risk mitigation procedures ~~that:~~

~~(a) select the appropriate mitigation strategies;~~
~~(b) implement the mitigation strategies; and~~
~~(c) monitor the strategies' implementation and effectiveness.~~ to select, apply, and monitor appropriate fatigue mitigation strategies and their effectiveness.

AMC1 ORO.FTL.120(b)(6) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS SAFETY ASSURANCE PROCESSES

The operator should develop and maintain ~~FRM~~ safety assurance processes within its FRMS to:

(a) provide for continuous FRMS 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:

[…]

(b) provide a formal process for the management of change which should include, but is not limited to:

(1) identification of changes in the operational environment that may affect the FRMS;

(2) identification of changes within the organisation that may affect the FRMS; and

(3) consideration of available tools which could be used to maintain or improve the FRMS performance prior to implementing changes; and

(c) provide for the continuous improvement of the FRMS. This should include, but is not limited to:

[…]

AMC1 ORO.FTL.120(b)(7) Fatigue risk management system (FRMS)

~~CAT OPERATORS~~ FRMS PROMOTION PROCESS

The operator's FRMS promotion processes should support the ongoing development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels.

The following should be established and implemented by the operator as part of its FRMS:

(a) training programmes to ensure competency commensurate with the roles and responsibilities of management, ~~flight and cabin crew~~ aircrew, scheduling and all other involved personnel under the ~~planned~~ FRMS; and

(b) an effective ~~FRM~~ communication plan that:

(1) explains the FRMS policies, procedures and responsibilities to all relevant stakeholders; and

(2) describes the communication channels used to gather and disseminate the FRMS-related information.

Rationale

Under the ICAO framework, FRMS is the recognised, defined system, whereas FRM is the activity or process carried out within that system or within the safety management system (SMS).
Since ORO.FTL.120 in fact describes a system (requiring adequate policy, processes, structures, responsibilities and other relevant elements), all references to 'FRM' in the implementing rules, as well as in the associated CS/AMC/GM, are replaced by references to 'FRMS'.
Referring only to FRM weakens the legal link to the approved and overseen framework. An "FRM policy" risks describing intentions without anchoring them to governance, assurance, and accountability. A policy is a system-level instrument and therefore must relate to the FRMS.
Processes, procedures, approvals, oversight, and accountability attach to the FRMS as a system, not to an FRM activity in isolation.

GM1 ORO.FTL.125(a) Individual flight time specification schemes (IFTSS)

CONTENT OF THE IFTSS

This guidance provides an overview of the elements of Subpart FTL(A) relevant to the content of the operator's IFTSS. An IFTSS is expected to include, as a minimum, the following elements:

1) the applicable type of disruptive schedule;

2) the home base(s) used by the operator, as well as conditions and time-frame for changes in the assigned home base;

3) the reporting times used by the operator;

4) the pre-flight and post-flight duty times;

5) the conditions for extensions of the maximum basic daily FDP without in-flight rest;

6) the conditions for extensions of the maximum daily FDP with in-flight rest;

7) the policy and conditions for exercising commander's discretion in unforeseen circumstances, including non-punitive policy;

8) the procedures for delayed reporting, if applicable, including notification times;

9) the conditions and elements for split duty;

10) the conditions and elements for standby and duties at the airport;

11) the conditions and elements for reserve;

12) the conditions and elements for reduced rest;

13) the recurrent extended recovery rest period(s);

14) the additional rest periods to compensate for time zone differences and extensions of the FDP, disruptive schedules and change of home base;

15) arrangements to ensure aircrew members' nutrition during the FDP; and

16) where applicable, description of the FRMS, unless it is described in a dedicated manual

Rationale

This GM aims to facilitate the implementation of IFTSS-related requirements by operators, gathering in one place various items that appear in different parts of the regulation.

AMC/GM to Subpart FTL(B) of Part-ORO

GM1 ORO.FTL.106 (a) Definitions

DEFINITIONS OF ORO.FTL.105 APPLICABLE TO AIR TAXI AND AEMS

(a) As regards 'point of departure', GM2 ORO.FTL.105(1) applies

(b) As regards 'ADEQUATE FURNITURE FOR ACCOMMODATION', GM1 ORO.FTL.105(3) applies.

(c) As regards 'OPERATING CREW MEMBER', GM1 ORO.FTL.105(17) applies. The reference therein to 'in-flight rest' is understood to mean 'on-board rest'. The reference therein to point ORO.FTL.210 is understood to refer to ORO.FTL.211.

(d) As regards 'DETERMINATION FOR DISRUPTIVE SCHEDULES', the following applies:
If an aircrew member is acclimatised to his/her home base time zone, the local time at the home base should be used to consider an FDP as disruptive.

(e) As regards 'ELEMENTS OF STANDBY FOR DUTY', the following applies:
Points ORO.FTL.226(c) and (d) and CS FTL.2.226 (b)(6) determine which elements of standby count as duty.

Rationale

This GM clarifies how guidance material to the definitions of ORO.FTL.105 that also apply to air taxi and AEMS should be interpreted.

GM2 ORO.FTL.106 (b)(1) Definitions

ACCLIMATISED - DAYLIGHT SAVING TIME

The switch from daylight to standard time or vice versa is not accounted for in this Regulation. It would be reasonable for the air operator to assume, on the first day of the time change, that a crew member is not acclimatised by 1 hour and apply that when determining the permitted flight duty period. On the second day following the time change, the crew member would be acclimatised.

Rationale

This recommendation is added for greater clarity and better management of crew acclimatisation issues arising from the switch from daylight to standard time or vice versa.

GM3 ORO.FTL.106 (b)(1) Definitions

ACCLIMATISED - 'TIME ELAPSED SINCE REPORTING AT REFERENCE TIME'

If the operator provides suitable accommodation to the aircrew at home base during a rotation, the time elapsed since reporting at home base, when home base is used as reference time, refers to the time elapsed since reporting for the first time at home base for a rotation.

Rationale

This GM clarifies the term 'time elapsed since reporting at reference time' in the context of back-to-back rotations.

GM4 ORO.FTL.106 (b)(11) Definitions

UNFORESEEN OPERATIONAL CIRCUMSTANCES

The definition of "unforeseen operational circumstances" (Annex 6, Part I, Attachment A, ICAO SARPs) is generally understood to refer to unexpected and uncontrollable events that directly impact flight operations — such as weather disruptions, mechanical failures, or air traffic control issues. The core examples provided by ICAO (e.g., bad weather, equipment malfunction, ATC delays) are focused on operational disruptions external to commercial decision-making.

From a regulatory and safety oversight perspective, customer-driven scheduling changes should be considered as a commercial issue, not an operational emergency. Operators are expected to have systems in place to manage such variability within duty limits.

The contract or business model of the air taxi and AEMS typically allows or anticipates flexibility in departure times. Customer-driven schedule changes are commonplace in these types of operation. The operator has discretion to decline or reschedule the request.

Rationale

This GM is aimed to clarify that customer-driven scheduling changes should not be regarded as "unforeseen operational circumstances" under ICAO's intent.

GM1 ORO.FTL.111 (a) Operator responsibilities

ADVANCED PUBLICATION OF DUTY ROSTERS

Advanced publication of duty rosters does not prevent an operator from introducing changes in duty assignments when circumstances so require with proper notification to the aircrew concerned.

Rationale

This GM explains the concept of advanced publication of duty rosters in the context of air taxi and AEMS operations.

AMC1 ORO.FTL.111 (b) Operator responsibilities

NOTIFICATION OF ROSTER CHANGES

(a) The operator should establish in its IFTSS a procedure and method for communication (active and passive) with aircrew members through which changes to duty assignments, rest periods and assigned home base are notified. The method of communication should, as much as possible, avoid disruption of the aircrew member's sleep opportunity.

(b) The procedure and method for communication should be in a form that is clear and readily available to the operator's employees who are involved in rostering activities, as well as to affected crew members.

Rationale

This AMC defines requirements for communicating changes to duty assignments, rest periods and home base to aircrew members. The core principle is to avoid negatively impacting the aircrew member's ability to obtain sufficient sleep and rest prior to a duty.

GM2 ORO.FTL.111(b) Operator responsibilities

METHOD FOR COMMUNICATION OF CHANGES

Examples of passive contact are emails; facsimile transmission; SMS or voice message, etc.

Rationale

This GM is intended to provide examples of methods for communication of changes to aircrew members.

GM3 ORO.FTL.111 (d) Operator responsibilities

REPORTING AND RELEASE TIMES

(a) When specifying reporting times, the operator should consider taking into account the type of operation, the size and type of aircraft and the reporting airport conditions. For the purpose of a safe and efficient departure procedure, the reporting time should normally take into account the time necessary for the completion of all pre-flight duties assigned to the operating flight crew, such as: flight planning, aircraft preparation, including walkaround inspection and flight deck setup and checks, passengers/aircrew briefing and final checks, engine start and taxi checklist.

Shorter reporting times may be established for non-CAT flight sectors, which are operated without passengers, or when some pre-flight services are performed by qualified ground personnel without aircrew involvement.

(b) When specifying release times, the operator should consider taking into account the time needed for completion of post-flight duties, following engine shut-down, such as: securing of aircraft systems; walkaround for damage or leaks; assistance to passengers; logging of flight data; reporting defects; securing and locking the aircraft.

Shorter release times may be established for non-CAT flight sectors, which are operated without passengers, or when some post-flight services are performed by qualified ground personnel without aircrew involvement.

(c) To ensure that actual reporting and release times are accurately and consistently recorded by the aircrew, the operator should be aware that inconsistencies commonly arise between crew logs and:

– fuel uplift documentation (timestamped);
– catering delivery order time (scheduled catering delivery timestamp);
– ground handling logs;
– aircraft systems (e.g., FMS, ACARS, ADS-B);
– flight tracking services (e.g., Mode-S/ADS-B);
– maintenance entries;
– passenger manifests or boarding logs;
– ATC movement logs (especially at controlled airports);

and should maintain synchronisation across all logs.

Rationale

This GM offers basic considerations for determining and recording reporting and release times.

AMC2 ORO.FTL.111 (i) Operator responsibilities

PUBLICATION OF RECURRENT EXTENDED RECOVERY REST PERIODS

Planned recurrent extended recovery rest periods should be published at least 7 days in advance.

Rationale

This AMC requires an advance publication of recurrent extended recovery rest periods in air taxi and AEMS operations. It was already included with NPA 2017-17, and raised some concerns with air taxi and AEMS operators.

However, a 7-day advance publication does not prevent an operator from introducing changes to the rostered extended recovery rest when circumstances so require. Therefore, EASA decided to keep the original proposal for a 7-day advance publication which will apply in normal circumstances, and to propose new AMC and GM to deal with roster changes.

AMC3 ORO.FTL.111 (k) Operator responsibilities

OPERATIONAL ROBUSTNESS OF ROSTERS

(a) To ensure that the planning of duty periods and rest periods is realistic, resilient, and flexible enough to handle everyday irregularities without leading to excessive fatigue or non-compliances, the operator should monitor and control as a minimum:

(1) exceedances of maximum FDP limits;

(2) how often the aircrew pairing for a duty period is achieved within the planned duration of that duty period (crew pairing means positioning and flight sectors for aircrew members in one FDP); and

(3) how often planned rest periods are achieved

(b) The operator should establish performance and fatigue indicators for operational robustness of rosters and keep records of planned rosters and actual flown rosters.

Rationale

This AMC defines the minimum parameters to be monitored and controlled to ensure the operational robustness of rosters in air taxi and AEMS operations.

GM4 ORO.FTL.111 (k) Operator responsibilities

OPERATIONAL ROBUSTNESS OF ROSTERS

Robust is a roster that:

- absorbs normal disruptions (weather delays, technical issues, ATC restrictions, passenger handling delays) without breaking maximum FDP limits or requiring last-minute changes;
- provides adequate buffers (e.g., rest periods, reserve crew, realistic turnaround times) so that small delays don't cascade into large disruptions;
- maintains legal compliance;
- supports fatigue management, so crew remain safe to operate despite operational variability; and
- minimizes operational interventions e.g., reassignments, cancellations.

Rationale

This GM clarifies the meaning of 'a robust roster'. Examples of robust rosters include:

- *Buffer times included: A roster plans 1h 15 min for turnaround instead of the bare minimum 45 min, so a short delay doesn't cause the next sector to bust FDP limits.*
- *Realistic positioning: Positioning legs allow adequate rest after long transfers (e.g., >1h bus ride factored in before duty).*
- *Reserve coverage: Standby crew are distributed across key bases and time periods, so disruptions can be absorbed quickly.*
- *Fatigue-sensitive patterns: Avoids scheduling multiple consecutive early-morning duties after late finishes, even if legally possible.*
- *Seasonal/weather resilience: In winter, extra ground time is scheduled for likely de-icing operations, reducing knock-on delays.*

Examples of non-robust rosters include:

- *Tight connections: Only the legal minimum is allowed between flights, so a 20-minute delay breaks the next duty.*
- *Ignoring positioning time: A roster assumes positioning is "short" but in reality involves a 2-hour drive, pushing FDP limits.*
- *No reserve buffer: Few standby crew available, so even minor sickness or delays lead to cancellations.*

- *Chaining maximum duties: Crew are rostered at the maximum FDP day after day, so any disruption risks immediate rule-breaking or fatigue.*
- *Unrealistic assumptions: Schedules assume perfect on-time performance, ignoring known bottlenecks (e.g., slot delays at congested airports).*

GM5 ORO.FTL.111 (k) Operator responsibilities

OPERATIONAL ROBUSTNESS OF ROSTERS – PERFORMANCE/FATIGUE INDICATORS

Performance/fatigue indicators for operational robustness of rosters may involve the following measurement tools: fatigue reports; commanders' discretion reports; exceedances of planned and maximum FDPs; and delays due to customer's plan changes, technical reasons, commercial reasons or ATC instructions.

Rationale

This GM provides examples of performance metrics that may be used to assess the operational robustness of rosters.

AMC1 ORO.FTL.116 Crew member responsibilities

RESPONSIBILITIES OF AIRCREW MEMBERS

To comply with point ORO.FTL.116, an aircrew member should:

(a) use rest periods effectively in order to be adequately rested and fit for duty;

(b) report for duty well-rested to be able to safely perform their duties;

(c) alert the operator's management when fatigued to perform their flight duties safely;

(d) decide when to use strategies to lessen the risks of personal fatigue while on duty;

(e) complete FRM-related training;

(f) report fatigue, fatigue hazards and fatigue-related events; and

(g) participate in studies and/or surveys for fatigue (risk) management purposes, including when fatigue and alertness levels need to be measured.

Rationale

This AMC is proposed to clarify the expectations under point ORO.FTL.116 and highlights the key individual responsibilities of aircrew members relevant to fatigue (risk) management.

GM1 ORO.FTL.126(a) Individual flight time specification schemes (IFTSS)

CONTENT OF THE IFTSS

This guidance provides an overview of the elements of Subpart FTL(B) relevant to the content of the operator's IFTSS. An IFTSS is expected to include, as a minimum, the following elements:

1) the applicable type of disruptive schedule;

2) the home base(s) used by the operator, as well as conditions and time-frame for changes in the assigned home base;

3) the reporting and release times used by the operator;

4) the pre-flight and post-flight duty times;

5) the maximum basic daily FDP of acclimatised aircrew operating with a single-pilot or with two-pilot flight crew;

6) the maximum basic daily FDP of aircrew in an unknown state of acclimatisation for single-pilot flight crew operations and for two-pilot flight crew operations, including any applicable FDP extensions;

7) the maximum extended daily FDP without on-board rest for acclimatised aircrew operating with a two-pilot flight crew, and associated conditions;

8) the maximum extended daily FDP due to on-board rest in the air and augmentation of the minimum flight crew, and associated conditions;

9) the conditions for extending the maximum basic daily FDP of acclimatised aircrew operating with a two-pilot flight crew during ongoing AEMS missions;

10) the policy and conditions for exercising commander's discretion in unforeseen operational circumstances, including non-punitive policy;

11) the procedure for delayed reporting, including the conditions for its activation;

12) the exceedances, where applicable, of total duty hours and the associated terms;

13) the conditions and elements for positioning;

14) the conditions and elements for split duty;

15) the conditions and elements for standby and duties at the airport;

16) the conditions and elements for reserve;

17) the recurrent extended recovery rest period(s);

18) the conditions and elements for reduced rest;

19) the additional rest periods to compensate for time zone differences and extensions of the FDP, disruptive schedules and for the circadian phase shift during eastward-westward or westward-eastward transition;

20) arrangements to ensure aircrew members' nutrition during the FDP; and

21) where applicable, description of the FRMS, unless it is described in a dedicated manual

Rationale

This new AMC is intended to assist operators in developing their IFTSS by consolidating relevant elements from various implementing rules and specifying the minimum required content.

GM1 ORO.FTL.201 Home base

TRAVELLING TIME FROM RESIDENCE TO HOME BASE

Aircrew 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.

Rationale

This GM clarifies the concept of travelling time in the context of fatigue risk management. It is not the intention of the legislator to regulate the personal lives of aircrew, nor are aircrew members required to change their permanent residence. However, to ensure they report fit for duty and not fatigued from extended travel to the airport of departure, it is recommended that aircrew make suitable arrangements for temporary accommodation—such as a hotel room, rented apartment, or similar—when necessary for flight safety.

AMC1 ORO.FTL.206 (f) Flight Duty Period (FDP)

COMMANDER'S DISCRETION POLICY

(a) When developing a commander's discretion policy, the operator should take into account the shared responsibility of the operator and the aircrew for fatigue management in unforeseen operational circumstances. The use of commander's discretion should remain exceptional and should be avoided at locations where aircrew change is available. As a matter of good practice, the operator should review cases in which commander's discretion has been applied in order to identify possible shortcomings in aircrew rostering.

(b) The policy on commander's discretion should address the associated safety objectives, notably in situations involving extension of the FDP or reduction of the rest period, and should highlight additional factors that may influence aircrew alertness, such as:

(1) WOCL encroachment;
(2) weather conditions;
(3) complexity of the operation and/or airport environment;
(4) aeroplane malfunctions or specifications;
(5) flight with training or supervisory duties;
(6) increased number of sectors;
(7) circadian disruption; and
(8) individual conditions of affected crew members (time since awake, sleep-related factor, workload, etc.).

(c) The operator's policy should make clear that aircrew members are not subject to punitive action whether commander's discretion is used or not used.

Rationale

This AMC provides recommendations on key elements to be addressed in the operator's policy on Commander's Discretion.

AMC1 ORO.FTL.226 (f)(3) Standby and duties at the airport

MINIMUM REST AND STANDBY

(a) If initially assigned airport standby or other-standby is reduced by the operator during actual standby that does not lead to an assignment to an FDP, the minimum rest requirements specified in point ORO.FTL.236 should apply.

(b) If a minimum rest period as specified in point ORO.FTL.236 is provided before reporting for the duty assigned during the standby, this rest period terminates the standby. The duty assigned during the standby may be another standby period.

(c) When an aircrew member receives an assignment during other-standby, the actual reporting time at the designated reporting point should be used for the purpose of point ORO.FTL.236.

Rationale

This AMC is derived from guidance material applicable to scheduled operators but elevates the content to the level of acceptable means of compliance. It further clarifies that when a minimum rest period is provided prior to reporting for a duty assigned during standby, this rest period marks the end of the standby. This clarification resolves a potential contradiction with the definition of 'standby,' which excludes an intervening rest period between the standby and the assigned duty.

GM1 ORO.FTL.226 (f)(2) Standby

OTHER-STANDBY— NOTIFICATION OF DUTIES

Operator procedures for the notification of assigned duties during other-standby should avoid interference with sleeping patterns if possible.

Rationale

This GM recommends that the operator establish procedures to avoid interfering with sleep patterns when notifying aircrew of assigned duties during other-standby.

GM1 ORO.FTL.236(b) Rest periods

MINIMUM REST PERIOD AWAY FROM HOME BASE

When the minimum rest period away from home base is 10 hours, it is recommended that 1 hour be allocated for physiological needs and that the operator ensures travel time to suitable accommodation does not exceed 30 minutes. This is to protect an 8-hour sleep opportunity.

If travel time exceeds 30 minutes, it is recommended that the operator extend the rest period by twice the amount of time by which the travel time exceeds 30 minutes.

For longer rest periods (i.e. exceeding 10 hours), the operator should ensure that travel time does not reduce the aircrew member's opportunity for 8 hours of sleep and time for physiological needs.

Rationale

This GM clarifies the relationship between minimum rest away from home base, time for physiological needs and travelling time to/from a suitable accommodation.

AMC1 ORO.FTL.241 (b) Nutrition

MEAL OPPORTUNITY

The operator's IFTSS should:

(a) 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).

(b) 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.

Rationale

This AMC requires that the operator's IFTSS specifies the minimum duration of the meal opportunity, as well as the time frames within which a regular meal should be consumed.

AMC1 ORO.FTL.251 (b) Fatigue management training

TRAINING SYLLABUS

The training syllabus for fatigue management training should contain at least the following:

(a) applicable regulatory requirements for flight, duty and rest;

(b) the basics of fatigue including sleep fundamentals and the effects of disturbing the circadian rhythms;

(c) the causes of fatigue, including medical conditions that may lead to fatigue;

(d) the effect of fatigue on performance;

(e) fatigue countermeasures;

(f) the influence of lifestyle, including nutrition, exercise, and family life, on fatigue;

(g) familiarity with sleep disorders and their possible treatments;

(h) where applicable, the effects of long-range operations and heavy short-range schedules on individuals;

(i) the effect of operating through and within multiple time zones;

(j) the crew member responsibility for ensuring adequate rest and fitness for flight duty; and

(k) the optimum use of sleep opportunities, in particular before crew reporting for night duties or late finish duties, and during an FDP with in-flight rest.

Rationale

This AMC outlines the training syllabus for fatigue management training, mirroring the requirements for scheduled and charter operators.

AMC2 ORO.FTL.251 (b) Fatigue management training

PRACTICAL ASPECTS

Fatigue management training should cover at least the following practical aspects:

(a) Operational case studies and examples of:

(1) FDP exceedances and how they happen in practice (weather, ATC delays, technical issues, late inbound aircrew);
(2) the use of commander's discretion and correct procedures, documentation, and limits;
(3) fatigue reports and how to submit, what details are useful, and how the operator analyses them;
(4) incidents/accidents where fatigue was a factor.

(b) Roster and duty planning awareness about:

(1) how pairings and rosters affect fatigue risk (e.g., disruptive duties, time zones crossing, split duties);
(2) rostering constraints and the need for schedulers to respect FTL rules and fatigue science (circadian lows, recovery times);
(3) fatigue risk indicators in rosters such as high number of disruptive duties, disruptive rest, scheduling FDPs at or very close to the regulatory maximum limits.

(c) Operational decision-making:

(1) how to recognise symptoms of personal fatigue, use of checklists for self-assessment;
(2) how to make a fit-for-duty declaration and when to call in fatigued;
(3) how to raise fatigue concerns with commander/management;
(4) how to adjust workload distribution in the cockpit/cabin, use of augmented flight crew.

(d) Organisational and reporting aspects:

(1) what is a non-punitive reporting culture and how to build trust in fatigue reporting;
(2) confidential safety reporting vs. fatigue reporting: when to use which;
(3) how fatigue reports feed into operator's SMS or, if applicable, into operator's FRMS
(4) how fatigue data is used to improve rostering.

e) Scenario-based training:

(1) role-play of fatigue-related decision points (e.g., whether to extend FDP, whether to accept a difficult turnaround, what to do when an aircrew member declares unfit);

(2) line-oriented scenarios with built-in fatigue factors (multiple sectors, delays, circadian lows).

Rationale

Fatigue management training isn't just about theory (causes/effects, science of fatigue), but also about practical, operational application. The intent is to make sure aircrews, schedulers, and managers can recognise, mitigate, and handle fatigue risk in day-to-day operations.

The inclusion of real operational data (such as FDP exceedances, CMD, fatigue reports) enhances the effectiveness of fatigue management training by linking theoretical knowledge to concrete operational experience. This approach increases aircrew awareness of real risks, identifies recurrent patterns, reinforces reporting culture, and supports the FRM process through continuous feedback and corrective actions.