European Aviation Safety Agency

Acceptable Means of Compliance (AMC)

and

Guidance Material (GM)

to

Part-ORO (Subpart FTL)

Amendment 3

31 January 2014[1]

[1] For the date of entry into force of this Amendment, kindly refer to Decision 2014/003/R in the Official Publication of the Agency

The following new Guidance Material for Subpart FTL has been added to Part-ORO:

GM1 ORO.FTL.105(1) Definitions

ACCLIMATISED

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

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

GM2 ORO.FTL.105(1) Definitions

ACCLIMATISED 'POINT OF DEPARTURE'

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

GM3 ORO.FTL.105(1) Definitions

ACCLIMATISED 'TIME ELAPSED SINCE REPORTING AT REFERENCE TIME'

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

GM1 ORO.FTL.105(2) Definitions

REFERENCE TIME

(a) Reference time refers to reporting points in a 2-hour wide time zone band around the local time where a crew member is acclimatised.

(b) Example: A crew member is acclimatised to the local time in Helsinki and reports for duty in London. The reference time is the local time in London.

GM1 ORO.FTL.105(3) Definitions

ADEQUATE FURNITURE FOR 'ACCOMMODATION'

Adequate furniture for crew member accommodation should include a seat that reclines at least 45° back angle to the vertical, has a seat width of at least 20 inches (50cm) and provides leg and foot support.

GM1 ORO.FTL.105(8) Definitions

DETERMINATION OF DISRUPTIVE SCHEDULES

If a crew member is acclimatised to the local time at his/her home base, the local time at the home base should be used to consider an FDP as 'disruptive schedule'. This applies to operations within the 2-hour wide time zone surrounding the local time at the home base, if a crew member is acclimatised to the local time at his/her home base.

GM1 ORO.FTL.105(10) Definitions

ELEMENTS OF STANDBY FOR DUTY

ORO.FTL.225(c) and (d) and CS FTL.1.225(b)(2) determine which elements of standby count as duty.

GM1 ORO.FTL.105(17) Definitions

OPERATING CREW MEMBER

A person on board an aircraft is either a crew member or a passenger. If a crew member is not a passenger on board an aircraft he/she should be considered as 'carrying out duties'. The crew member remains an operating crew member during in-flight rest. In-flight rest counts in full as FDP, and for the purpose of ORO.FTL.210.

AMC1 ORO.FTL.110 Operator responsibilities

SCHEDULING

(a) Scheduling has an important impact on a crew member's ability to sleep and to maintain a proper level of alertness. When developing a workable roster, the operator should strike a fair balance between the commercial needs and the capacity of individual crew members to work effectively. Rosters should be developed in such a way that they distribute the amount of work evenly among those that are involved.

(b) Schedules should allow for flights to be completed within the maximum permitted flight duty period and flight rosters should take into account the time needed for pre-flight duties, taxiing, the flight- and turnaround times. Other factors to be considered when planning duty periods should include:

    (1) the allocation of work patterns which avoid undesirable practices such as alternating day/night duties, alternating eastward-westward or westward-eastward time zone transitions, positioning of crew members so that a serious disruption of established sleep/work patterns occurs;

    (2) scheduling sufficient rest periods especially after long flights crossing many time zones; and

    (3) preparation of duty rosters sufficiently in advance with planning of recurrent extended recovery rest periods and notification of the crew members well in advance to plan adequate pre-duty rest.

AMC1 ORO.FTL.110(a) Operator responsibilities

PUBLICATION OF ROSTERS

Rosters should be published 14 days in advance.

AMC1 ORO.FTL.110(j) Operator responsibilities

OPERATIONAL ROBUSTNESS OF ROSTERS

The operator should establish and monitor performance indicators for operational robustness of rosters.

GM1 ORO.FTL.110(j) Operator responsibilities

OPERATIONAL ROBUSTNESS OF ROSTERS

Performance indicators for operational robustness of rosters should support the operator in the assessment of the stability of its rostering system. Performance indicators for operational robustness of rosters should at least measure how often a rostered crew pairing for a duty period is achieved within the planned duration of that duty period. Crew pairing means rostered positioning and flights for crew members in one duty period.

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

COMMERCIAL AIR TRANSPORT OPERATORS FRM POLICY

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

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

(c) The FRM policy should:

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

  (2) state the safety objectives of FRM;

  (3) be signed by the accountable manager;

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

  (2) declare management commitment to effective safety reporting;

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

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

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

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

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

COMMERCIAL AIR TRANSPORT OPERATORS FRM DOCUMENTATION

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

(a) FRM policy and objectives;

(b) FRM processes and procedures;

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

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

(e) FRM training programmes, training requirements and attendance records;

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

(g) FRM outputs including findings from collected data, recommendations, and actions taken.

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

COMMERCIAL AIR TRANSPORT OPERATORS IDENTIFICATION OF HAZARDS

The operator should develop and maintain three documented processes for fatigue hazard identification:

(a) *Predictive*

The predictive process should identify fatigue hazards by examining crew scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include, but are not limited to:

(1) operator or industry operational experience and data collected on similar types of operations;

(2) evidence-based scheduling practices; and

(3) bio-mathematical models.

(b) *Proactive*

The proactive process should identify fatigue hazards within current flight operations. Methods of examination may include, but are not limited to:

(1) self-reporting of fatigue risks;

(2) crew fatigue surveys;

(3) relevant flight and cabin crew performance data;

(4) available safety databases and scientific studies; and

(5) analysis of planned versus actual time worked.

(c) *Reactive*

The reactive process should identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. At a minimum, the process may be triggered by any of the following:

(1) fatigue reports;

(1) confidential reports;

(2) audit reports;

(3) incidents; or

(4) flight data monitoring (FDM) events.

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

COMMERCIAL AIR TRANSPORT OPERATORS RISK ASSESSMENT

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

(a) operational processes;

(b) their probability;

(c) possible consequences; and

(d) the effectiveness of existing safety barriers and controls.

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

COMMERCIAL AIR TRANSPORT OPERATORS RISK MITIGATION

An operator should develop and implement risk mitigation procedures that:

(a) select the appropriate mitigation strategies;

(b) implement the mitigation strategies; and

(c) monitor the strategies' implementation and effectiveness.

AMC1 ORO.FTL.120(b)(8) Fatigue risk management (FRM)

COMMERCIAL AIR TRANSPORT OPERATORS FRM SAFETY ASSURANCE PROCESSES

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

(a) provide for continuous FRM performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:

  (1) hazard reporting and investigations;

  (2) audits and surveys; and

  (3) reviews and fatigue studies;

(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 FRM;

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

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

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

  (1) the elimination and/or modification of risk controls have had unintended consequences or that are no longer needed due to changes in the operational or organisational environment;

  (2) routine evaluations of facilities, equipment, documentation and procedures; and

(3) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.

AMC1 ORO.FTL.120(b)(9) Fatigue risk management (FRM)

COMMERCIAL AIR TRANSPORT OPERATORS FRM PROMOTION PROCESS

FRM promotion processes should support the on-going development of FRM, 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 FRM:

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

(b) an effective FRM communication plan that:

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

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

GM1 ORO.FTL.205(a)(1) Flight Duty Period (FDP)

REPORTING TIMES

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

GM1 ORO.FTL.205(b)(1) Flight duty period (FDP)

REFERENCE TIME

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

AMC1 ORO.FTL.205(f) Flight Duty Period (FDP)

UNFORESEEN CIRCUMSTANCES IN ACTUAL FLIGHT OPERATIONS — COMMANDER'S DISCRETION

(a) As general guidance when developing a commander's discretion policy, the operator should take into consideration the shared responsibility of management, flight and cabin crew in the case of unforeseen circumstances. The exercise of commander's discretion should be considered exceptional and should be avoided at home base and/or company hubs where standby or reserve crew members should be available. Operators should asses on a regular basis the series of pairings where commander's discretion has been exercised in order to be aware of possible inconsistencies in their rostering.

(b) The operator's policy on commander's discretion should state the safety objectives, especially in the case of an extended FDP or reduced rest and should take due

consideration of additional factors that might decrease a crew member's alertness levels, such as:

(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.).

GM1 ORO.FTL.205(f)(1)(i) Flight Duty Period (FDP)

COMMANDER'S DISCRETION

The maximum basic daily FDP that results after applying ORO.FTL.205(b) should be used to calculate the limits of commander's discretion, if commander's discretion is applied to an FDP which has been extended under the provisions of ORO.FTL.205(d).

AMC1 ORO.FTL.210(c) Flight times and duty periods

POST-FLIGHT DUTIES

The operator should specify post-flight duty times taking into account the type of operation, the size and type of aircraft and the airport conditions.

GM1 ORO.FTL.230(a) Reserve

ROSTERING OF RESERVE

Including reserve in a roster , also referred to as 'rostering', implies that a reserve period that does not result in a duty period may not retrospectively be considered as part of a recurrent extended recovery rest period.

GM1 ORO.FTL.235(a)(2) Rest periods

MINIMUM REST PERIOD AT HOME BASE IF SUITABLE ACCOMMODATION IS PROVIDED

An operator may apply the minimum rest period away from home base during a rotation which includes a rest period at a crew member's home base. This applies only if the crew member does not rest at his/her residence, or temporary accommodation, because the operator provides suitable accommodation. This type of roster is known as "back-to-back operation".

AMC1 ORO.FTL.235(b) Rest periods

MINIMUM REST PERIOD AWAY FROM HOME BASE

The time allowed for physiological needs should be 1 hour. Consequently, if the travelling time to the suitable accommodation is more than 30 minutes, the operator

should increase the rest period by twice the amount of difference of travelling time above 30 minutes.

AMC1 ORO.FTL.240 Nutrition

MEAL OPPORTUNITY

(a) The operations manual should specify the minimum duration of the meal opportunity, when a meal opportunity is provided, in particular when the FDP encompasses the regular meal windows (e.g. if the FDP starts at 11:00 hours and ends at 22:00 hours meal opportunities for two meals should be given).

(b) It should define the time frames in which a regular meal should be consumed in order not to alter the human needs for nutrition without affecting the crew member's body rhythms.

AMC1 ORO.FTL.250 Fatigue management training

TRAINING SYLLABUS FATIGUE MANAGEMENT TRAINING

The training syllabus should contain 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; and

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