

COMPLIANCE CHECKLIST***FRM, FATIGUE RISK MANAGEMENT**

Version 2.0 Checked 2018-09-18

Based on:

COMMISSION REGULATION (EU) No 965/2012, Annex III, Subpart FTL

COMMISSION REGULATION (EU) No 2018/1139

EASA Annex to Decision 2017/007/R AMC/GM to Part-ORO – Issue 2, amd 11

Name of organisation:**AOC reference:****Audit reference:** TSL**Audit staff:** **Signature:****Date(s) of Audit:****Date of completion:**

State how and where the rule is implemented – Ref. to OM (If the rule is Not Applicable state N/A)	STA notes	** Assessment
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*Note: Disclaimer: This document is meant as an aid for operators to comply with the applicable rules. If any differences or discrepancies would exist between this document and the applicable EU regulations and EASA CS/AMC/GM the latter prevail and must always be consulted.

** Note: The right hand part of each box above to be completed by STA with one of four indicators:

1. **C** means Compliance;
2. **N/A** means that the rule is Not Applicable to the reviewed activity;
3. **N/R** means the rule is applicable but Not Reviewed;
4. **R** means Remark

Markings in the left margin relate to changes compared with version 1.0

References in this document:

Reference	Description
Article n	Article to Commission Regulation (EU) No 965/2012 as amended by Commission Regulation (EU) No 83/2014 (FTL)
ORO.xxx	Part-ORO Organisation Requirements for Air Operations (Annex III to Commission Regulation (EU) No 965/2012)
ORO.FTL.xxx	Subpart FTL (Flight and Duty Time Limitations and Rest Requirements)
ORO.FTL.1xx	Section 1 (General)
ORO.FTL.1xxx	Section 2 (Commercial Air Transport Operators)
AMCn ORO.FTL.xxx	Acceptable Means of Compliance to Part-ORO (Subpart FTL)
GMn ORO.FTL.xxx	Guidance Material to Part-ORO (Subpart FTL)
CS FTL.1.xxx	Certification Specifications Commercial Air Transport by Aeroplane – Scheduled and Charter Operations
GMn CS FTL.1.xxx	Guidance Material Commercial Air Transport by Aeroplane – Scheduled and Charter Operations



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ANNEX III

SUBPART FTL

FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS

SECTION 1

ORO.FTL.120 Fatigue Risk Management

These requirements are only applicable for an operator which applies for FRM.

The operators FRM should be proportionate to their size, complexity and the scope of the operational application of FRM. The manual should follow the requirements contained in ICAO Doc.9966, as this is the document it will be audited against. Operators should consider reviewing the FRMS Guidance manual for Operators to support this task. ICAO Guidance documents can be found at:

<http://www.icao.int/safety/fatiguemanagement/FRMS%20Tools/Doc%209966%20-%20FRMS%20Manual%20for%20Regulators.pdf>

<http://www.icao.int/safety/fatiguemanagement/FRMS%20Tools/FRMS%20Implementation%20Guide%20for%20Operators%20July%202011.pdf>

ORO.FTL.120 Fatigue Risk Management (FRM)

- (a) When FRM is required by this Subpart or an applicable certification specification, the operator shall establish, implement and maintain a FRM as an integral part of its management system. The FRM shall ensure compliance with the essential requirements in points 7.f, 7.g and 8.f of Annex IV to Regulation (EC) No. 216/2008. The FRM shall be described in the operations manual.
- (b) The FRM established, implemented and maintained shall provide for continuous improvement to the overall performance of the FRM and shall include:
 - (1) a description of the philosophy and principles of the operator with regard to FRM, referred to as the FRM policy;

- (2) documentation of the FRM processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
 - (3) scientific principles and knowledge;
 - (4) a hazard identification and risk assessment process that allows managing the operational risk(s) of the operator arising from crew member fatigue on a continuous basis;
 - (5) a risk mitigation process that provides for remedial actions to be implemented promptly, which are necessary to effectively mitigate the operator risk(s) arising from crew member fatigue and for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions;
 - (6) FRM safety assurance processes;
 - (7) FRM promotion processes.
- (c) The FRM shall correspond to the flight time specification scheme, the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in those activities and the applicable flight time specification scheme.
- (d) The operator shall take mitigating actions when the FRM safety assurance process shows that the required safety performance is not maintained.

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GM1 ORO.FTL.120 Fatigue Risk Management (FRM)

ICAO DOC 9966 — MANUAL FOR THE OVERSIGHT OF FATIGUE MANAGEMENT APPROACHES

Further guidance on FRM 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 (FRM)

CAT OPERATORS FRM POLICY

Audit reference: TSL

- (a) The operator's FRM policy should identify all the elements of FRM.
- (b) The FRM policy should define to which operations FRM applies.
- (c) The FRM policy should:
 - (1) reflect the shared responsibility of management, flight and cabin crew , and other involved personnel;
 - (2) state the safety objectives of FRM;
 - (3) be signed by the accountable manager;
 - (4) be communicated, with visible endorsement, to all the relevant areas and levels of the organisation;
 - (5) declare management commitment to effective safety reporting;
 - (6) declare management commitment to the provision of adequate resources for FRM;
 - (7) declare management commitment to continuous improvement of FRM;
 - (8) require that clear lines of accountability for management, flight and cabin crew , and all other involved personnel are identified; and
 - (9) require periodic reviews to ensure it remains relevant and appropriate.

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AMC2 ORO.FTL.120(b)(2) Fatigue Risk Management (FRM)

CAT 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.

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

SCIENTIFIC METHOD

'Scientific method' is defined as 'a method or procedure that has characterized natural science since the 17th century, consisting in systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses'.

A scientific study may be required as an element of proactive fatigue hazard identification. Such a study should be based on scientific principles, i.e. use the scientific method. That means that the study should consist of the following elements as applicable to each individual case:

- (a) an introduction with a summary and the description of the study design, methods and results;
- (b) a statement of the hypothesis being tested, how it is being tested and a conclusion as to whether the hypothesis was found to be true or not;
- (c) a description of the data collection method and tools, e.g. the sensitivity of the activity monitors, further information on any model and its limitations and how it is being used as part of the study;
- (d) a description of how the study subjects were selected and how representative of the crew member population the study group is;

- (e) a description of the rosters the study participants have worked containing data such as e.g. flight and duty hours, number of sectors, duty start/finish times;
- (f) reports on mean sleep duration and efficiency and data for other standard measures (e.g. sleep timing, self-rated sleepiness/fatigue, sources of sleep disruption, performance, safety);
- (g) a description of how sleep and the other measures varied across the roster (i.e. day-to-day) and where and why minimum sleep occurred;
- (h) statistical data analysis to test the hypothesis; and
- (i) the explanation of how the study results have been used to influence the design of the roster or other fatigue mitigations.

AMC1 ORO.FTL.120(b)(4) Fatigue Risk Management (FRM)

CAT 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) the operator's 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;
- (2) confidential reports;
- (3) audit reports;
- (4) incidents; or
- (5) flight data monitoring (FDM) events.

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AMC2 ORO.FTL.120(b)(4) Fatigue Risk Management (FRM)

CAT 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;

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- (c) possible consequences; and
- (d) the effectiveness of existing safety barriers and controls.

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AMC1 ORO.FTL.120(b)(5) Fatigue Risk Management (FRM)

CAT OPERATORS RISK MITIGATION

An operator should develop and implement risk mitigation procedures that:

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

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AMC1 ORO.FTL.120(b)(6) Fatigue Risk Management (FRM)

CAT 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.

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AMC1 ORO.FTL.120(b)(7) Fatigue Risk Management (FRM)

CAT 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.

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