

Data Collection and Comparative Assessment of Existing National FTL Provisions for EMS

Report for EASA
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Existing National FTL provisions for EMS
for
EASA

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1.0 Introduction

1.1 Background

In December 2010 the European Aviation Safety Agency (EASA) published the Notice of Proposed Amendment (NPA) No. 2010-14A [1] on 'Implementing Rules on Flight and Duty Time Limitations and Rest Requirements for Commercial Air Transport (CAT) with Aeroplanes'. Following extensive consultation the Comment Response Document (CRD) to NPA 2010-14A was published in January 2012 [2]. Within the CRD is a Draft Opinion of EASA, Annex III, PART-ORO (ORGANISATION REQUIREMENTS) covering Subpart — Flight and duty time limitations and rest requirements. Section 1 of this contains General FTL requirements and Section 2 is for Commercial Air Transport Operators. Also within the CRD is a Certification Specification (CS) for Commercial Air Transport by Aeroplane — Scheduled and Charter Operations, designated FTL 1.

The CRD has placeholders for Certification Specifications FTL 2, 3 and 4 covering Emergency Medical Services (EMS) by aeroplane and by helicopter, Air Taxi by aeroplane (including Single Pilot Operations) and other CAT operations by helicopters respectively.

A rulemaking task will start beginning of 2012 for the development of FTL for EMS. The rulemaking task for Air Taxi will begin third quarter of 2012 and the one for other CAT operations by Helicopters is to follow in 2013.

To support the development of these rules EASA requires the preparation of Regulatory Impact Assessments (RIAs) similar to the one which appears in NPA 2010-14A.

Under framework agreement EASA.2010.FC06 EASA has requested that DNV/Circadian assist in the preparation of the RIAs supported by a data collection exercise as described below in Section 1.3.

1.2 Objectives of Project

The main objectives of the project are to:

- Ensure that the rule development for FTL provisions for EMS, Air Taxi and Helicopters is based on an objective and impartial assessment of current regulations and informed by RIAs complying with the established EASA process.
- Compare the CRD's flight and duty time limitations and rest requirements (Sections 1 and 2) to the currently applicable national FTL provisions to identify any significant difference or conflict.

1.3 Scope of Activities

The scope of the work is to cover different types of operation and aircraft under three separate tasks as follows:

Task 1: EMERGENCY MEDICAL SERVICES (EMS) BY AEROPLANES (A) & EMERGENCY MEDICAL SERVICES (EMS) BY HELICOPTERS (H)¹

- a. Data collection and comparative assessment of existing national FTL provisions covering at least 8 EASA Member States including FR, DE,UK,SP,CH, one Scandinavian country and 2 others as more relevant to the concerned operations.
- b. Comparison of the results of a. with the provisions (Implementing rules in Sections 1 and 2 only) of the CRD to NPA 2010-14 which was published in January 2012;
- c. Preparation of the elements necessary for the Regulatory Impact Assessment (RIA).

Task 2: AIR TAXI AND SINGLE PILOT OPERATIONS (AEROPLANES)

- a. Data collection and comparative assessment of existing national FTL provisions covering at least 8 EASA Member States including FR, DE,UK,SP,CH, one Scandinavian country and 2 others as more relevant to the concerned operations.
- b. Preparation of the elements necessary for the Regulatory Impact Assessment (RIA).

For Air Taxi, EU-OPS Subpart Q applies and it is assumed there are no FTL provisions different from Subpart Q. Therefore there is no requirement for data collection and comparative assessment of existing national provisions on FTL. Single Pilot operations have been excluded from EU-OPS 1.1105. It will therefore be necessary for these operations to include data collection and comparative assessment of the related existing national FTL provisions.

Task 3: COMMERCIAL AIR TRANSPORT OPERATIONS BY HELICOPTERS

- a. Data collection and comparative assessment of existing national FTL provisions covering at least 8 EASA Member States including FR, DE,UK,SP,CH, one Scandinavian country and 2 others as more relevant to the concerned operations.
- b. Preparation of the elements necessary for the Regulatory Impact Assessment (RIA).

For each of the three tasks:

- The preparation of the related RIA necessitates collection of data as relevant for each of the elements to be assessed (e.g. FTL provisions and accident/incident data for safety aspects; number of operators concerned, level of activity and crew numbers for the economic and/or social aspects); and
- The finalisation of the RIA, in particular point 7 'Conclusions and preferred options', and the related decision to be made, will be the task of the concerned rulemaking group.

¹ Hereafter referred to as AEMS when by aeroplane and as HEMS when operated by helicopter

1.4 Scope and Structure of this Report - Deliverable D1

This report is deliverable D1 under this project and covers Tasks 1a and 1b from the task list above. Deliverable D2 will be the RIA for EMS operations, Task 1c.

The rest of this report is structured as follows:

- Section 2 provides an overview of the EMS FTL data collected from the 8 States. In addition to the 5 States specified above, we also contacted Poland, Norway and the Czech Republic. The detailed responses from the 8 States are included in Appendix 2 of this report.
- Section 3 identifies and analyses key EMS issues from the States' data.
- Section 4 compares the FTL requirements from the CRD, Sections 1 and 2, to the States' data to identify any significant differences or inconsistencies.
- Section 5 contains the main findings to be fed forward to the RIA.
- The Appendices contain supporting data namely:
 - Appendix 1 – questionnaire sent to the States
 - Appendix 2 – detailed responses from the States
 - Appendix 3 – supporting FDP tables from States where these vary from Subpart Q values
 - Appendix 4 – example HEMS working patterns.

2.0 Overview of States' Provisions

This section provides an overview of the applicable provisions governing FTL requirements in eight European States. Specifically, it outlines which provisions apply to Emergency Medical Services (EMS) operations by aeroplane and helicopter. The eight European States were chosen with the following criteria in mind:

- To provide a representation across the EU regions;
- To cover a mix of geographies and environments, namely mountainous and non-mountainous and extreme northerly environments;
- To collect information on both HEMS and AEMS; and
- To ensure that the levels of EMS activities in the chosen States were a significant proportion of total European EMS operations.

In terms of the overall scale of EMS, there are over 360 HEMS bases in Europe with additional fixed wing ambulance bases chiefly providing cross-border or inter-continental services such as medical repatriation. Approximately 200,000 HEMS and fixed wing air ambulance missions are flown annually in Europe [17]. The chosen States account for well over 50% of European EMS operations.

The scope of what is covered by EMS varies between countries. There is a general consensus that EMS provisions apply when rapid and immediate transportation of patients (with or without family members), medical staff and supplies is required. Six of the eight member States apply EMS provisions also to transport of stabilised patients between medical facilities and to rescue missions. Spain and the UK exclude these latter two categories from the scope of EMS. France Germany, Norway and the UK have definitions of EMS scope within regulations and these are provided in the State sections below. The other four States do not have formal definitions but have clarified the scope and this is summarised in a table in section 2.10.

A brief explanation is provided below on how information relating to the national FTL provisions has been gathered.

2.1 Approach to Identifying FTL Provisions

In order to focus on key fatigue contributory elements and to ensure a consistent level of responses for identifying what FTL provisions are in place amongst different States, a structured questionnaire was developed (see Appendix 1). The key areas covered under this questionnaire are based on the categories listed in the Hazard/Mitigation Table ref. 2.2.2 within the NPA 2010-14A document [1] and also with reference to the NPA draft implementing rules.

The areas are:

1. Duty hours
2. Cumulative duty
3. Cumulative block times
4. Basic maximum Flight Duty Period (FDP)

5. Night, early and late duties
6. Duty extensions
7. Positioning
8. Travelling
9. Split duty
10. Pilot discretion
11. Airport standby and standby elsewhere
12. Basic minimum rest
13. Basic reduced rest
14. Extended and recovery rest
15. Time zone crossing
16. Nutrition
17. Records for flight duty and rest periods
18. Other elements including FRMS

States were asked to populate the questionnaire under each of these headings providing relevant information on applicable FTL provisions for EMS using Aeroplanes and Helicopters. Some States also provided supporting documents on applicable national legislative requirements, referenced via the questionnaire. Where further clarifications were required, this was subsequently requested via separate email and telephone correspondences.

Subpart Q of EU OPS 1 (in Annex III of EC regulation 3922/91) provides Flight and Duty Time Limitations and Rest Requirements for Commercial Air Transportation by Aeroplane. Subject to the provisions of Article 8 of EC regulation 3922/91, Authorities may grant variations to the requirements in Subpart Q in accordance with applicable laws and procedures within the States concerned and in consultation with interested parties. Each operator has to demonstrate to the relevant Authority that its request for a variation produces an equivalent level of safety (with suitable mitigation measures where appropriate).

In the States' responses extensive reference is made to Subpart Q for AEMS. There is no equivalent baseline for HEMS operations and hence there is reliance on national provisions. This is described further below; each sub-section provides an overview of the eight States' FTL provisions for EMS.

The details of the States responses are provided in Appendix 2. Key EMS issues are compared and analysed in Section 3.

2.2 Czech Republic

2.2.1 Aeroplanes

The FTL provisions for AEMS operators are as specified in EU OPS Subpart Q. The fixed-wing operators in the Czech Republic conduct only secondary medical services such as transport and repatriation flights and for this reason these are subject to the requirements for commercial air operations for aeroplanes.

2.2.2 Helicopters

Specific FTL requirements for HEMS operators are regulated under the national Decree (No. 466/2006 Coll [3]). This Decree sets out the rules for HEMS operators which determine the following areas:

- Maximum duty period and flight duty periods
- Flight time
- Minimum rest requirements.

2.3 France

2.3.1 Aeroplanes

Subpart Q is applicable for AEMS. In addition, there are specific national provisions in place for areas including split duty, reduced rest, standby, extension for in-flight rest and time zone crossing. There are, however, some rules [4] which deviate from the normal CAT operations in the event of an actual emergency and are applicable if an operator is operating with a minimum of two flight crew members and under 'Fatigue Risk Management' (FRM) provisions. In such cases, the deviation allows for extended FDP, up to a maximum of 18 hours.

Operator and crew responsibilities as stated within Subpart Q are applicable for French AEMS operations.

2.3.2 Helicopters

FTL provisions for helicopter EMS operations are specified in a national safety regulation [5] as part of social requirements regulating duty periods for these activities. The French DGAC has highlighted within this regulation the most important aspects with relation to EMS operations with helicopters. These are detailed in Appendix 2.

Within this regulation there is a definition of what is covered by EMS:

“Civil emergency air operation means any operation, regardless of the qualification of flight by regulations, including a flight or series of flights, including an emergency that makes scheduling impossible, carried out to:

1. *Provide transportation directly related to:*

- a) seriously ill or injured persons, accompanied or not by relatives or medical staff, to a place where the means required for urgent treatment can be provided to them;*
- b) medical personnel required;*
- c) medical supplies such as equipment, blood, organs and necessary drugs;*

2. *Ensure a public safety mission, assist a person in danger, safeguarding persons and property, including mountain rescue or at sea, firefighting or fire watch;*"

2.4 Germany

2.4.1 Aeroplanes

In Germany, AEMS operations are covered by Subpart Q supplemented by the national FTL provisions as laid out within the internal document 'DVLuftBO1' [6] under articles §8-15.

2.4.2 Helicopters

FTL provisions for helicopters are regulated under German Subpart Q (referred to as JAR-OPS 3) and DVLuftBO2 [7] under articles §7-22. In particular, articles §21 and §22 of DVLuftBO2 specifically relate to provisions on limiting flight time and rest periods in helicopter rescue services.

In terms of definitions, Germany refers to the HEMS definition from Appendix 1 to JAR-OPS 3.005(d), i.e.

"Helicopter Emergency Medical Service (HEMS) flight. A flight by a helicopter operating under a HEMS approval, the purpose of which is to facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying:

- i. Medical personnel; or*
- ii. Medical supplies (equipment, blood, organs, drugs); or*
- iii. Ill or injured persons and other persons directly involved. "*

2.5 Norway

2.5.1 Aeroplanes

There are very few regulations directly related to EMS operations. However, there is local legislation covering CAT (aeroplanes) operations which is also relevant to some areas of fixed-wing EMS activities with specific references made to air ambulance and emergency service at the airport and elsewhere (standby). These are covered under references [8] and [9].

In cases where there are no national FTL provisions relevant parts of Subpart Q are applicable.

An ambulance flight in the Norwegian regulations means a flight where the purpose is to perform transportation directly connected with:

- a) Seriously ill or injured persons, their families, and medical staff, to a place where appropriate treatment can take place.
- b) Medical staff required to perform necessary tasks.
- c) Vital medical supplies, including equipment, blood, organs and medicines.

- d) Necessary transportation of persons or medical supplies in connection with a), b) or c) above.

2.5.2 Helicopters

For helicopters, the FTL requirements are determined by agreement between the operator and their air crew. These agreements are required to stipulate provisions regarding duty and rest requirements and a roster for at least four weeks is produced and released at least two weeks in advance.

2.6 Poland

2.6.1 Aeroplanes

FTL provisions for AEMS operations are covered by an internal regulation referenced as 'Regulation of the Minister of Infrastructure' (dated 13th December 2002) [10] which outlines national legislation on the working times and rest time of aircraft crew members and air traffic controllers. Chapter 5 of this regulation specifically covers aviation medical rescue service and medical transportation. In Poland these activities are considered under the scope of EMS operations.

In accordance with the Polish Act of Aviation Law (PRAWO LOTNICZE) a new regulation is to come into force but until this happens Chapter 5 of the existing regulation remains valid for EMS operations.

In addition to the internal regulation, relevant parts of Subpart Q are applicable for areas such as block time, standby and basic minimum rest requirements.

2.6.2 Helicopters

Article 103a of the Act of Aviation Law (PRAWO LOTNICZE) [10] has been written for helicopters. Specific allowances have been made for operations involving emergency medical services and provisions laid out on the limitations on working times for crew members. Relevant parts of Chapter 5 of the 'Regulation of the Minister of Infrastructure' as used for AEMS operations are also applicable for HEMS operations.

2.7 Spain

2.7.1 Aeroplanes

FTL provisions related to EMS operations are essentially governed by 3 national regulations. These are:

1. Circular del Director General de Aviación Civil (dated 17th December 2010) [12]
2. Real Decreto 1952/2009 (dated 18th December 2010) – national law which adopts requirements related to flight time limits and crew rest as per CAT operations [13]
3. Circular Operativa 16B – sets out limits on flight time, maximum aviation activity and minimum periods of rest for flight crew [14].

In some cases, provisions include a combination of national regulations and Subpart Q. Spanish EMS airborne activities are restricted to transport of those in urgent need of medical care to appropriate facilities and transport of organs or blood for transplant operations. Transport of stabilised patients between medical facilities or rescue activities are not considered under national EMS provisions.

2.7.2 Helicopters

Applicable FTL regulations for helicopters are also covered by relevant articles within the above mentioned references. See Appendix 2 for more details.

2.8 Switzerland

2.8.1 Aeroplanes

Switzerland has only one AEMS operator and currently there are no special national provisions in place for EMS aeroplane operations. However in most cases accepted procedures in line with Subpart Q are applicable. The single operator is in the process of implementing FRMS. Further details are provided in Appendix 2.

2.8.2 Helicopters

Switzerland's EMS operators, REGA, Air Zermatt and Air Glacier have, between them, over 40 years of search and rescue experience.

The provisions relating to HEMS operations have been addressed within an internal document referenced as 'Duty Time Requirements for HEMS OPS' [15]. These are not regulations but are requirements and policies regarding HEMS operations based on historical practices.

2.9 United Kingdom

2.9.1 Aeroplanes

FTL provisions are principally covered under the UK CAA's Safety Regulation Group (SRG) CAP 371 document on 'The Avoidance of Fatigue in Aircrews' [16]. CAP 371 defines a framework for the duty hours of flight crew and cabin crew. FTL requirements as well as guidance data on applicable limitations and restrictions are provided for operators to follow when developing their flight crew working shift patterns. Although CAP 371 has general provisions under fixed-wing (aeroplanes) it makes specific allowances for EMS operations under its 'Air Ambulance Supplement' provisions. This Supplement defines the allowable FDP increases for air ambulance flights and states the conditions that need to be met for required FDP extensions.

In the UK (as with Spain), the scope for EMS airborne activities only consider those flights for which the sole reason is to transport an ill or injured person to a recognized medical facility or the carriage of a human organ/ blood necessary for transplant operation. Transport of stabilised patients between medical facilities or rescue activities are not considered under national EMS provisions. Air ambulance flights are defined as "*When the sole reason for the*

flight is to carry an ill or injured person to a recognized medical facility, or the carriage of a human organ necessary for a transplant operation.”

2.9.2 Helicopters

As with fixed-wing above, helicopters are also covered under the detailed FTL provisions within CAP 371. Within this document, specific provisions and guidance are provided for HEMS for operators under the Annex D on ‘Air Ambulance Supplement – Helicopter’. CAP 371 provides explicit guidance for limits on cumulative duty and flying hours, maximum FDP allowances and other areas where there are clear differences in limitations between helicopter and fixed-wing operations.

The scope of UK HEMS activities are the same as described above for aeroplanes.

2.10 Summary of EMS FTL Scope for Surveyed States

State	Transport of acute cases	Transport of organs/ blood for transplant	Transport of stabilised patients	Search and rescue (S&R)	Comments
Czech Republic	✓	✓	✓	✓	
France	✓	✓	✓	✓	
Germany	✓ HEMS	✓ HEMS	✓ AEMS	✓ HEMS	
Norway	✓	✓	✓	✓	
Poland	✓	✓	✓	✓	
Spain	✓	✓			
Switzerland	✓	✓	✓	✓	
UK	✓	✓			Has separate S&R requirements

3.0 Key EMS Issues

3.1 Aeroplanes (AEMS)

The key EMS issues identified are:

EMS related extension: Some of the States allow extensions beyond the basic maximum FDPs to deal with EMS events. France, Norway, Poland and the UK allow extensions beyond the 1 hour extension referred to in Subpart Q. These are summarised in Table 3.2 below, together with the additional mitigating measures (e.g. extended rest) adopted to manage the increased risks associated with these extensions.

Basic maximum daily FDPs: In order to fully understand the total daily FDPs that can be possible after EMS extension, Table 3.1 below sets out the relevant basic maximum daily FDPs for each State. Although derived in different ways a daily extended FDP of 18 hours for a two person EMS crew is possible for France and the UK with various mitigating measures in place. Commander's discretion can further extend this value.

Basic Minimum Rest/ Reduced Rest: Basic minimum rest is generally compliant with Subpart Q (see Table 3.3). In addition to this following an EMS extended FDP, France and UK have extended rest requirements (see Table 3.2). For reduced rest, the only EMS specific issue is the way in which an EMS extended FDP can be combined with reduced rest in France – the mitigating measures on this are set out in Table 3.3.

Cumulative Duty Hours and Block Hours: The States have values complying with Subpart Q and some have additional annual limits on duty hours (see Table 3.4) at least one dating from before EU OPS. The UK has an additional provision concerning duty hours within a 14 consecutive day period.

In Flight Rest/ Augmented Crew: Germany, UK and Switzerland make use of augmented crews to extend EMS FDPs to 18 hours and above (see Table 3.5).

Airport and Other Standby: Given that EMS are on-demand services, the manner in which standby is treated is important. Section 11 within Appendix 2 presents the data provided by States on standby provisions. For airport standby there is a wide range of provisions concerning how the standby time is treated when immediately followed by flight duty. The UK treats airport standby in full for daily FDP calculations if a callout occurs, France requires a reduction in the subsequent FDP corresponding to the standby period spent beyond 6 hours whereas Germany and Spain do not count the standby time if suitable accommodation is provided. In terms of counting towards cumulative duty hours there is consistency with Subpart Q. With respect to other forms of standby, there is again a wide range of provisions concerning how the standby time is treated when immediately followed by flight duty. In some cases it contributes 100% to FDP (e.g. UK under certain situations), sometimes 0% (e.g. Spain in hotel standby) plus intermediate provisions (e.g. Norway where standby time outside the airport contributes 50% to daily FDP as well as cumulative duty hours). These ranges are not EMS specific but reflect more general national provisions on standby and are consistent with the ranges of options considered in NPA 2010-14.

Table 3.1: Basic Maximum Daily FDP – Aeroplane

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Basic maximum FDP without extensions	<p>Refer to Tables in Circular Operativa 16B Articles 5.3.1.1 and 5.3.1.2 (see Appendix 3) showing passenger and cargo operations, single and multiple pilots.</p> <p>For 2 or more pilots in passenger ops. the max. FDP is 14 hours.</p> <p>Maximum FDP derived as a function of daily start times & number of sectors flown.</p> <p>Organs/ blood would be considered as 'Cargo'. Medical patient would be considered as 'Passenger'.</p>	<p>As per Subpart Q OPS 1.1105, i.e. maximum FDP is 13 hours with 30 minute-reductions per sector (starting from 3rd sector) and reductions for WOCL encroachment.</p> <p>If EMS involves single pilot, max. FDP is reduced to 10 hours and extension provisions from OPS 1.1105 are not allowed.</p>	<p>Refer to Tables A-C (see Appendix 3) showing two or more flight crew, acclimatised and non-acclimatised, and single flight crew.</p> <p>Maximum FDP permitted for two or more acclimatised pilots, is 14 hours.</p> <p>Maximum FDP derived as a function of daily start times & number of sectors flown.</p>	<p>Maximum FDP is 18 hours for EMS with two pilots and with FRMS implemented.</p> <p>FDP provisions are modified by implementing sector reduction rule as minus 30 minutes per sector starting from the 4th sector with a maximum reduction of 2 hours. WOCL encroachment also factored in.</p> <p>1 hour extension from OPS 1.1105 allowed providing 18 hour cap not exceeded.</p>	<p>Maximum working hours for aviation activities in EMS is 12 hours within 24 consecutive hours.</p>	<p>As per Subpart Q OPS 1.1105.</p>	<p>As per Subpart Q OPS 1.1105. Basic maximum daily FDP is 13 hours.</p> <p>This can be increased by 2 hours for air ambulance.</p> <p>Hence up to 15 hours is possible.</p>	<p>As per Subpart Q OPS 1.1105.</p> <p>See below (Table 3.5) for FDP provisions for augmented flight crew allowing extended EMS operations.</p>

Table 3.2: Extensions in Maximum Allowable FDP due to EMS Scenario – Aeroplane

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Limitations on FDP extension due to EMS scenario	No special provisions for extending due to EMS scenario.	No provisions.	Air ambulance FDP can be extended from values in Tables A-C (Appendix 3) by up to 4 hours subject to conditions (see rows below). Therefore maximum FDP permitted is 18 hours for 2 pilot crew if daily start time and number of sectors allow. In exceptional circumstances, FDP may be extended beyond 4 hour extension – mitigating measures on this are also described below.	Maximum FDP up to 18 hours is allowed (see Table 3.1 above). 1 hour extension on FDP is allowed as in Subpart Q up to 18 hour cap. Although in special cases, under Pilot discretion, a 2-hour maximum (whatever the circumstances) extension is allowed taking total FDP to 20 hours.	Upon approval of aircraft commander, FDP can be extended as follows: - For participation in rescue action - by 2 hours. - Flight with ill or wounded patient to medical care or to deliver blood or human organs for transplants - by 3 hours. Maximum duty time shall not exceed 15 hours 30 minutes in 24 hours.	FDP extension of 1 hour is permitted – as in Subpart Q. No special EMS extension provisions stated.	As above: 13hours + 2hours for EMS.	Extensions beyond 13 + 1 hours (Subpart Q) would involve augmented crew as described below in Table 3.5.
Conditions on EMS related FDP extension	N/A	N/A	FDP extension of up to 4 hours is subject to : a) qualified	FDP extension (up to 18 hours total) permitted without prior	Flying time can also be extended by 2 hours up to	N/A	This is only valid for the ambulance mission itself.	See Table 3.5.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
			medical staff on flight b) only immediate family/next of kin allowed in addition to patient & medical staff c) crew must have had full rest entitlement prior to duty.	authorization providing it is an emergency and operates with at least 2-pilots and FRMS is implemented.	maximum of 10 hours.		As this is not a "planned extension", there are no special rules for the rest afterwards, other than normal subpart Q rest requirements.	
Conditions on Exceptional/ Discretionary Extensions related to EMS	N/A	N/A	Single Pilot: FDP extension > 4hrs permitted providing additional relief Pilot carried until organ/patient is disembarked. Two-Pilot: Commander may use discretion to extend FDP > 4hrs only to offload/deliver patient/organ to destination.	In special cases, under Pilot discretion, a 2-hour maximum (whatever the circumstances) extension is allowed taking total FDP up to 20 hours.	N/A	N/A	With Pilot discretion a maximum of 17 hours FDP is permitted. This rule is only valid for air ambulance missions and normal Subpart Q rules apply for all other operations	In case of unforeseen circumstances, the flight may be continued to destination or alternate. No other PIC discretion.
Rest	N/A	N/A	The crew must	If FDP is greater	Minimum rest	N/A	As above - so if	N/A

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
requirements preceding & post extensions due to EMS scenario			<p>have had the full entitlement of rest relating to the preceding duty prior to starting an air ambulance flying duty.</p> <p>Following an Air Ambulance FDP the appropriate full rest period must be taken.</p> <p>At least 48 hours must elapse between the end of one extended Air Ambulance FDP and the start of another Air Ambulance FDP (an exception to this rule is described in CAP 371).</p>	<p>than 14 hours, subsequent rest must be at least 24 hours including a local night except if reduced rest provisions are applied.</p>	<p>requirements in Subpart Q OPS 1.1110.</p>		<p>FDP is extended to 17 hours upon pilot discretion then rest will be 17 hours minimum.</p>	
Restriction on number of consecutive FDP extensions related to EMS	N/A	N/A	<p>A pilot can only fly 3 air ambulance extended FDPs in any 28 consecutive days.</p>	<p>Two FDP extensions in 7 consecutive days (from Subpart Q OPS 1.1105).</p>	<p>Not stated.</p>	N/A	<p>Not stated.</p>	N/A

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Prohibition on Combining FDP extension with 'split duty'	N/A	N/A	For air ambulance, if FDP is increased by 4 hours (as above) then use of split duty to further extend FDP is not permitted. However, if this extension for dedicated air ambulance has not already been applied then FDP extension using split duty and Pilot discretion is allowed.	Not stated. No specificity under split duty for EMS operations.	Not stated.	N/A	The 2 hour air ambulance extension can be combined with split duty extensions.	N/A
Combining operational regime (e.g. EMS with air taxi)	Not stated.	Not stated.	Combined public transport and air ambulance operations are permitted. In this case, FDP extension using split duty and pilot discretion is permitted. The extension	None stated.	Regulation separates 'aviation medical rescue' missions from 'medical transport' but same FTL provisions are applied. FDP extensions differ depending upon whether	Not stated.	Not stated.	No. Single Swiss EMS operator.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
			permitted for dedicated air ambulance does not apply in this case.		rescue mission or carrying patient/organ.			
Related Records	N/A	N/A	Commanders' discretion reports relating to extensions must be submitted to the CAA. Relevant duty records must show adherence to Air Ambulance supplement of CAP 371.	Not stated.	Not stated.	N/A	Not stated.	N/A

Table 3.3: Basic Minimum Rest and Reduced Rest – Aeroplane

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Minimum Rest Limits	At home: max. of 12 hours or length of the preceding duty period Away from home base (flight crew): max. of 10.5 hours or length of the preceding duty period with 8 hour sleep opportunity.	As per Subpart Q-OPS 1.1110.	Minimum rest period before undertaking an FDP shall be: a) at least as long as preceding FDP or b) 12hrs whichever is greater. If away from home and providing there is suitable accommodation then rest period may be reduced by 1 hour.	If FDP is within limits set out in Subpart Q, then rest provisions in Subpart Q apply. If FDP > 14 hours, then consecutive rest is 24h including a local night except in case of reduced rest.	As in Subpart Q.	As in Subpart Q.	As in Subpart Q OPS 1.1110 paragraph 2.1	As in Subpart Q.
Limit on Reduced-Rest Hours	Minimum duration of reduced rest = 10 hours away from home base or 12 hours in home base. Minimum of 9 hours at the suitable accommodation.	Minimum duration of reduced rest = 10 hours	No reduced rest provisions but Pilot may reduce rest to set minimums i.e. 12hrs at home & 10hrs for away from home.	Maximum 2 reduced rest periods in a week providing FRMS implemented. If the FDP before or the FDP after the reduced rest lasts more than 14h, then : a. reduced rest is 10h or	None stated.	None stated.	None stated.	None stated.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
				more (even in the case of use of captain's discretion). b. The reduced rest shall normally include 2 hours at least of the WOCL.				
Impact on FDP allowance and subsequent rests by Reduced-Rest	FDP following reduced rest shall be reduced by the shortfall. Reduced rest not allowed for when pre or post-FDP is extended by in flight rest and/or time zone crossing at the previous or next FDP.	None stated.	Only in exceptional circumstances and under Pilot discretion is FDP extension permitted following reduced rest.	If the FDP before or the FDP after the reduced rest lasts more than 14h, then: - The subsequent FDP shall be reduced by the time difference between the basic minimum rest and the reduced rest (called shortfall) and the number of sectors of the subsequent FDP is 4 or less -The subsequent rest period shall be extended by	None stated.	None stated.	None stated.	None stated.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
				the time difference between the basic minimum rest and the reduced rest. It shall include one local night and not be less than 24h. -An alternative consists in extending the weekly rest period (OPS 1.1110 §2.1) of all shortfalls generated during the week				

Table 3.4: Cumulative Duty Hours and Block Hours – Aeroplane

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Limits on duty hours over consecutive periods	Subpart Q-OPS 1.1100: 60 duty hours in 7 consecutive days & 190 duty hours in 28 consecutive days spread as evenly as possible. + 1800 duty hours (+200 extra hours for transport other than passenger) in calendar year	Subpart Q-OPS 1.1100 + 2000 hours annual limit spread as evenly as possible.	Maximum cumulative duty hours shall not exceed: 55 hours in any 7 consec. days (but can be increased to 60 hours when a rostered duty schedule is subject to unforeseen delays). 95 hours in any 14 consec. days & 190 hours in any 28 consec. days.	Subpart Q-OPS 1.1100	Subpart Q-OPS 1.1100 although some flights are ad-hoc.	Subpart Q-OPS 1.1100	Subpart Q-OPS 1.1100. A general rule of a yearly maximum 2000 duty hours, including standby hours converted to duty hours apply (based on Council Directive 2000/79/EC for mobile workers).	Subpart Q-OPS 1.1100
Limits on allowable Block Hours	Subpart Q-OPS 1.1100: 900 block hours in a calendar year and 100 block hours in 28 consecutive days. + 945 block hours in 12 consecutive months	Subpart Q-OPS 1.1100	Subpart Q-OPS 1.1100	Subpart Q OPS 1.1100	Subpart Q OPS 1.1100	Subpart Q OPS 1.1100	Subpart Q OPS 1.1100	Subpart Q-OPS 1.1100

Table 3.5: In Flight Rest/ Augmented Crew Requirements – Aeroplane

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Limits on FDP extension with augmented crew	Not specific to EMS	Extensions up to 18 hours possible with augmented crew.	A further 2 hours may be added to the 4 hours EMS extension already allowable subject to the additional conditions below being met.	In practice, the national provisions for extension due to in flight rest are not relevant as 18 hours FDP max is allowed under EMS provisions with 2 flight crew members as described above.	None stated	None stated	None stated	Maximum FDP allowed is up to 34 hours with four flight crew and 6 or less landings on special missions. With three flight crew maximum FDP limitations for augmented operations are: for 3 sectors = 20hours, 5 sectors = 16 hours, 8 sectors = 10 hours.
Conditions associated with extension	N/A	Cannot be pilot flying if served over 12 hours. NAA may grant 2 FDP extensions to 18hrs max within 7 consecutive days providing crew is augmented and there is suitable sleeping arrangement in-flight.	a) A third Captain qualified crew member must be on board. b) A stretcher or comfortable reclining seat must be available for the resting crew member. c) Maximum duty will be 18 hours or as per Table A (Appendix 3) above plus 6 hours whichever is the lesser. d) The air ambulance operation will terminate when the patient or organ has been offloaded	N/A	N/A	N/A	N/A	Compensation in days free of duty will follow these ops.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
			and full rest entitlement must be taken at that point. e) An additional 'day off' (minimum 34 hours which includes 2 local nights) must be taken on completion of the full rest entitlement. f) All 'heavy crew' duty days carried out must be notified to the CAA.					
Cumulative limitations on use of augmented crew	N/A	Not more than once every 7 days.	a) Only 2 'heavy crew' duty days will be permitted in any 28 consecutive days. b) In any 28 day period containing a 'heavy crew' duty day: i) A minimum of 10 days off will be achieved. ii) Maximum duty hours must not exceed 160 hours. iii) Maximum flying hours shall be limited to 75 hours. iv) A maximum of 60 hours flying averaged over 3 such 28 consecutive day periods. v) If one or more such periods contain 'heavy crew' duty days then the allowable flying hours for the 12 month period must be reduced to 700 hours.	N/A	N/A	N/A	N/A	None stated.

The other issues surveyed with the States did not show up significant differences in EMS provisions. They are briefly summarised below, with the details provided in Appendix 2.

Duty Hours: Generally the way in which flight duties are combined with ground duties and definitions of relevant terms are consistent with Subpart Q (see Section 1 of Appendix 2). While some States have daily limits on duty hours, fatigue is generally being controlled through the specification of rest requirements rather than limiting daily duty times in line with Subpart Q.

Night, Early and Late Duties: Only the UK responded with provisions (see Section 5 of Appendix 2). France clarified that the provisions it applies to scheduled and chartered operations are not applied to EMS. The importance of this issue in the context of EMS is currently unclear. It is thus treated as an open issue to be further considered in the RIA.

Positioning and Travelling: Several States indicate that Subpart Q: OPS 1.1105 point 5 on "Positioning" is followed (see Sections 7 and 8 of Appendix 2).

Extension by On-Ground Break/ Split Duty: Section 9 of Appendix 2 presents the States' responses on split duty. No specific EMS provisions were provided by States other than the UK's restriction on combining split duty extensions with EMS related extensions (described in Table 3.2 above). This is an Article 8 issue under Subpart Q.

Pilot in Command Discretion: PIC discretion extensions are included above under Table 3.2 in the context of EMS events. More generally there is consistency with Subpart Q-OPS 1.1120 (see Section 10 of Appendix 2).

Extended and Recovery Rest: Subpart Q OPS 1.1110 paragraph 2 generally applies (see Section 14 of Appendix 2).

Time Zone Crossing: Section 15 of Appendix 2 presents the States' responses on time zone crossing. One State noted that flights across time zones were more likely to be Medevac rather than emergencies and hence controlled by standard CAT regulations (relates to scope of EMS, see Section 2 above). A mixture of FTL regulations were presented by States. This is an Article 8 issue under Subpart Q OPS 1.1110 paragraph 1.3.

Nutrition: Most States follow Subpart Q: OPS 1.1130 (see Section 16 of Appendix 2).

Record Keeping: Commander discretion reports and duty records relating to EMS extensions are covered in Table 3.2. Otherwise Subpart Q OPS 1.1135 is used by most States (see Section 17 of Appendix 2).

3.2 Helicopters (HEMS)

The key EMS issues identified are:

EMS related extensions: Combining the basic maximum FDPs (see Table 3.6) with the permitted extensions leads some of the States to daily FDPs after extension of 15-16 hours maximum. The mitigating measures associated with these extensions are shown in Table 3.6 below.

Basic Minimum Rest/ Reduced Rest/ Extended Recovery Rest: There is some variability in basic minimum rest times from 8.5 hours to 12 hours. Generally where rest time is less than 10 hours there are conditions associated with this, e.g. limitation on number of days for which this can happen. Other mitigating measures are listed in Table 3.7 below. There is a mixture of provisions for reducing rest periods below these basic minimums and for extended/ recovery rest (see Table 3.7).

Cumulative Duty Hours and Block Hours: Some States have duty hour limits similar to those for aeroplanes in Subpart Q but there is variability in these and in cumulative block hours. Some States also have additional limits on daily flying time for helicopters (see Table 3.8).

Airport and Other Standby: Given that HEMS are on-demand services, the manner in which standby is treated is important. Section 11 within Appendix 2 presents the data provided by States on standby provisions. With respect to how airport standby time is treated the UK (as for aeroplane) treats airport standby in full for daily FDP calculations if a callout occurs whereas in Spain for example the FDP counts from the reporting time. In Germany if a secluded room is available with sleeping accommodation the standby time would be counted as a break if it was more than 2 hours uninterrupted. In Switzerland any time between two assignments exceeding one hour is counted as a break and duty is interrupted. In terms of counting towards cumulative duty hours the UK counts airport standby in full, whereas in the Czech Republic it is counted as 50%. With respect to other forms of standby, there is again a wide range of provisions. In some cases it contributes 100% to daily FDP (e.g. UK under certain situations) and cumulative duty, whereas in some States 0% (e.g. Switzerland and Germany at home or suitable accommodation).

In addition to these issues some HEMS operators work with **duty hours** restricted shifts. Examples of shift patterns and airport stand-by cycles are provided in Appendix 4 from Switzerland and France which were the States who provided this information. In the case of France these cycles are set out in the regulations [5] as prescriptive options; in Switzerland the operators proposed the different schedules described in Appendix 4 based on numbers and type of missions and these were approved by the NAA.

Table 3.6: Basic Maximum FDP / Duty Time and Extensions - Helicopter

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Basic maximum FDP for EMS (without extensions)	Maximum FDP is limited to 12 hours . Maximum FDPs are based on Circular Operativa 16B as specified in Tables 5.3.1.1 A, B & C (see Appendix 3) values minus 1 hour.	FDP between 2 rest periods is 10hours (max).	Maximum FDP is 12 hours (with two pilots and when FDP starts between 08:00-13:59) in a single day. <i>See Table 'D' (Appendix 3) for FDP for other start times, limits on maximum flying times and single pilot provisions.</i>	Maximum duty duration is 12hours .	Maximum FDP (carrying out aviation activities) is 12 hours within 24 hours).	Max FDP for multi-pilot helicopter crew is: a) 12hrs for VFR operations b) 10hrs for IFR.	No maximum FDP limit defined. <i>Note: FTL requirements for EMS helicopters are determined by agreement between the operator and their aircrew.</i>	Maximum duty time is determined by number of consecutive pikett ² days. If pikett period is 5 consecutive days then duty time = 9.5 hours and if pikett period is 2 consecutive days then duty time = 13hours .
Limitations on FDP (max) extension due to EMS scenario	No EMS specific provisions for extending. FDP could only be extended by split duty and PIC discretion.	Up to 2 hours FDP extension allowed. Therefore a maximum FDP of 12 hours is permitted. FDP + Standby	Air ambulance FDP can be extended from values in Tables D by up to 4 hours subject to conditions (below). Therefore maximum FDP permitted is 16 hours for 2 pilot crew if daily start time allows.	No special EMS provisions are stated for duty extension on the basic 12 hours. However, there is a possibility of a 2-hour extension through the use of	Upon approval of aircraft commander, FDP can be extended as follows: - For participation in rescue action - by 2	Total duty must not exceed 15hrs during 24hr consecutive hrs.	N/A	FDP can be extended up to 15hours maximum upon PIC discretion – see below.

² Pikett is effectively a period of standby other than at the airport. A pikett day is a period of 24 hours including all pikett time, airport standby time, flight duty period, post flight duty time and block time.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
		time (between two rest periods) must not be more than 15 hours 30 minutes .	In exceptional circumstances, FDP may be extended beyond 4 hour extension – mitigating measures on this are described below. If the 4 hour extension is granted under the following conditions then the use of spilt duty to further extend the FDP is not permitted.	captain's discretion.	hours. - Flight with ill or wounded patient to medical care or to deliver blood or human organs for transplants - by 3 hours.			
Conditions on EMS related FDP extensions	N/A	See Rest condition below.	FDP extension of up to 4 hours is subject to : a) qualified medical staff on flight b) only immediate family/next of kin allowed in addition to patient & medical staff c) crew must have had full rest entitlement prior to duty. Also for two-pilot crew, a pilot can only fly 3 air ambulance extended FDPs in any 28 consecutive days.	See above.	Flying time can also be extended by 2 hours up to maximum of 10 hours.	Air emergency services flight duty can be extended, if during duty a helicopter receives request for HEMS flight, by the time necessary to perform such flight.	N/A	Yes under PIC discretion – see below.
Conditions on Exceptional/	N/A	Decision to extend FDP up	Single Pilot: FDP extension > 4hrs	See above.	N/A	N/A	N/A	At Pilot's discretion the

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Discretionary Extensions (PIC) related to EMS		to 2 hours shall be made by the helicopter pilot.	permitted providing additional relief Pilot carried until organ/patient is disembarked. Two-Pilot: Commander may use discretion to extend FDP>4hrs only to offload/deliver patient/organ to destination.					following may apply: 1) FDP may be extended to max of 15hrs (excl. 30mins of post flight duties at end of FDP & 2) if on final sector within FDP, additional unforeseen circumstances occur after take-off, resulting in permitting hours being exceeded then flight may continue to planned destination or alternate. 3) if life is in danger then Pilot may extend Duty Time after consultation with crew members.
Rest requirements preceding & post extensions due to EMS scenario	N/A	After an extended FDP of more than 11 hours, a rest period of at least 12 hours must be given.	The crew must have had the full entitlement of rest relating to the preceding duty prior to starting an air ambulance flying duty.	Not stated.	Minimum rest post FDP is 8 hours 30 minutes.	Minimum rest pre FDP must be 11 hours (with at least 8hours in a bed).	Not stated.	HEMS FDP Regulation Addendum ref. extreme example: implies a 6 hours rest is

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
			<p>Following an Air Ambulance FDP the appropriate full rest period must be taken.</p> <p>At least 48 hours must elapse between the end of one extended Air Ambulance FDP and the start of another Air Ambulance FDP.</p>					<p>allowed following a full duty/ standby day plus 3 hours additional flight duty.</p>
Provisions for Single Pilot	Not stated.	Not stated.	Yes - maximum FDP allowable is 10 hours .	Not stated.	Yes - Regulation Table No.8: Maximum FDP = 10hours .	Yes - for single pilot helicopter crew FDP maximum is 10hrs .	Not stated.	Not stated.

Table 3.7: Basic Minimum Rest, Reduced Rest and Extended Recovery Rest - Helicopter

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Minimum Rest Limits	Basic minimum rest is 10.5hours or as long as preceding FDP whichever is greater.	Minimum daily rest period is 10hours.	Minimum rest period before undertaking an FDP shall be: a) at least as long as preceding FDP or b) 12hrs whichever is greater.	Minimum daily rest period is 10hours.	Minimum rest is 8hours, 30mins. Used rarely, this value may soon be reviewed/ discussed with stakeholders.	Minimum rest of 11 hours.	Not stated.	Nothing beyond the 6 hours described below under reduced rest.
Conditions on rest limits	At least 8 hours must be in accommodation.	Duty period which include rest time < 10hours within subsequent 24hours must not exceed 4 days.	Exceptionally at home base, rest can be reduced by up to 1 hour but only to minimum of 12hours.	If duty period (including flight) encroaches by 2hours or more the 22.00 – 6.00 window then crew will have 10 consecutive hours rest.	Standby period which include rest time < 10hours within subsequent 24hours must not exceed 4 days.	Within the 11hour minimum rest there should be possibility of at least 8hours in a bed).	N/A	N/A
Limit on reduced rest	Rest reduction limited to 3hours. The duration of this reduced rest is limited to 10hours and an FDP following a reduced rest shall be reduced by the shortfall (difference between planned rest and actual rest).	Minimum rest may be reduced to 8hours 30minutes within 24 hours. This is permitted up to 3 times within 4 consecutive days.	If away from home and providing there is suitable accommodation then rest period may be reduced by 1 hour.	Rest period may be reduced to 8hours. Also if an operation encroaches the planned rest period, the rest period may be reduced by 2hours but not less than 8hours. Subsequent rest period is augmented by	Not stated.	Basic rest of 11hours may be reduced to 9hours provided following conditions are met: -HEMS operations are during daytime only -There is suitable accommodation for crew during	N/A	6hours has been set as the minimum time to get “enough” sleep before the next flight during a 48 hour shift. This also applies for a 5 day pikett period. This value is under review by the NAA.

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
				the shortfall (=difference between planned and actual rest).		basic rest period at home base.		
Extended Rest between Duty Periods / Recovery Rest	Not stated.	A rest period of 48hours is allowed after each period of service.	Additional (recovery) rest requirements for aircrew are: - Not work more than 7 consecutive days - Have 2 consecutive days off following a period of 7 consecutive days duty - Have 2 consecutive days off in any consecutive 14 days and have at least 3 days off in any consecutive 14 days and - Have a minimum of 7days off in any consecutive 4 weeks and - Have an average of at least 8 days off in each consecutive 4 week period averaged over 3 such periods.	Cycle 1 : two consecutive days rest after 5 consecutive days of planned on site standbys Cycle 2 : 6 consecutive days rest after 12 consecutive days of onsite standby Cycle 3 : 7 consecutive days rest after 7 consecutive days of onsite standby	A rest period of 24hours minimum must be taken before each duty period. Also, duty period which includes rest time of less than 10hours within subsequent 24hours shall not exceed 4days.	HEMS operator shall extend the basic rest period as follows: -To 36hours , including 2 local nights with 7 consecutive days -To 60hours including 3 local nights with 10 consecutive days In addition, the HEMS operator shall specify days off in the pilot roster as follows: -7 days in a calendar month, into which the basic rest period can be included -24 days in a calendar quarter, into	Not stated.	Before and after each pikett period, a minimum of 12hours rest period must be ensured. In addition, rest requirements stated are: -within 10 consecutive days, pilot shall receive at least one 48hour rest period. - within each calendar month, pilot shall receive at least 8 local days free of duty and pikett. - within each calendar year, pilot shall receive at least 96 local days free of duty and pikett. Also for rest

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
						which the basic rest period can be included.		period between pikett periods the following limits apply: - for up to 3 pikett days, minimum of 1 (24hours) rest day - for up to 5 pikett days, minimum of 2 (48hours) rest days.

Table 3.8: Cumulative Duty Hours and Block Hours - Helicopter

Parameter/ Issue	Spain	Germany	UK	France	Poland	Czech Republic	Norway	Switzerland
Limits on duty hours over consecutive periods	2000 duty hours per year.	210 hours within 30 consecutive days and 1800hrs within 12 consecutive months.	Maximum duty hours shall not exceed 60hours in any 7 consecutive days & 200 hours in any 28 consecutive days.	Cumulative duty period over a week is limited to maximum of 44hours . 2000 duty hours per year.	190hrs in any 28 consec days spread as evenly as possible, 60hrs in any consec 7 days	Total duty hours must not exceed: 200hrs in any 28 consec days, 60hrs in any 7 consec days & 1800hrs in any 12 consec months.	Annual working hours shall not exceed 2000hours.	2000hours work per year.
Limits on allowable Block Hours	Total duty periods shall not exceed 900 block (flying) hours in calendar year, 945 block hours in 12 consecutive months and 100 block hours in 28 consecutive days.	Block times for aircrew for EMS (rescue service) shall not exceed 600hours within 365 consecutive days.	In a single day, maximum flying hours = 8hrs (2-pilots) & 7hrs (single pilot). Also, beyond this, flying hours are limited as: -to 18hours in any 3 consecutive days -to 30hours in any 7 consecutive days - to 240hours in any 3 consecutive 28 day periods.	Maximum duration of flight duty hours in single day = 8hours. 35 hours per week and 75 hours per month. For single pilot IFR operations total block hours of each FDP shall be less than 6 hours.	Flight time for helicopter EMS shall not exceed: -80hours within the next 28 days -800hours within a calendar year.	HEMS operator shall limit flight time as follows: - 7hours in any 24 consecutive hours - 90 hours in any 28 consecutive calendar days - 900hours in any 12 consecutive calendar months.	Maximum of 900hours per calendar year.	Maximum block time per day is 7hours. Beyond this the following block time limitations apply: -to 60hours per half month -to 110hours per month -to 280hours per 3 months -to 900hours per year.

The other issues surveyed with the States did not show up significant differences in EMS provisions. They are briefly summarised below, with the details provided in Appendix 2.

Night, Early and Late Duties: Only the UK responded with provisions (see Section 5 of Appendix 2). As with AEMS this is an open issue that will be further considered in the RIA.

Duty Extensions due to In-flight Rest/ Augmented Crew: N/A for helicopter operations.

Positioning and Travelling: See Sections 7 and 8 of Appendix 2 for States' responses. No specific HEMS provisions were provided by States.

Extension by On-Ground Break/ Split Duty: Section 9 of Appendix 2 presents the States' responses on split duty. No specific HEMS provisions were provided by States other than restrictions on combining split duty extensions with EMS related extensions (described in Table 3.6 above).

Pilot in Command Discretion: HEMS specific provisions are covered above under Table 3.6. Additional general requirements are presented in Section 10 of Appendix 2.

Time Zone Crossing: Generally N/A for helicopter operations.

Nutrition: No provisions for HEMS were provided by States other than a reference to using Subpart Q OPS 1.1130 by one State.

Record Keeping: Commander discretion reports and duty records relating to HEMS extensions are the same as in Table 3.2 for aeroplanes. Switzerland noted it operates a flat rate recording system of duty hours and hence the flight duty time, the numbers of missions, sectors/legs and flight time per mission are not automatically obvious to the NAA. These figures are available on request (see Section 17 of Appendix 2).

4.0 Comparison to CRD 2010-14 for scheduled and charter CAT operations Sections 1 and 2

Each of the sub-sections of the CRD Sections 1 and 2 of the Subpart on flight and duty time limitations and rest requirements has been compared to the responses received from the eight States. Table 4.1 summarises this comparison. The key findings are as follows:

CRD Section 1 presents general requirements covering scope, definitions, operator and crew member responsibilities and fatigue risk management (FRM). The scope of what constitutes “EMS” together with extra supporting definitions will be required in future documentation. In addition, definitions relating to helicopter activities will be required for HEMS and for helicopter operations more generally.

For AEMS operator and crew responsibilities are well aligned with Subpart Q or equivalent which match fairly closely to the equivalent CRD sub-sections. For HEMS, some States do not have equivalent provisions but the CRD text appears generally suitable for HEMS as well. A couple of specific detailed observations from France about HEMS and operator responsibilities are made in Table 4.1.

FRM is under development in most States, but the high level CRD text in section 1 is consistent with what States have developed so far.

There appear to be no significant conflicts in CRD Section 1 with respect to the States’ EMS provisions. Extra definitions and scope clarifications will be required in future documentation.

CRD Section 2 is more detailed and hence there are more opportunities for potential inconsistencies with EMS provisions. The main issues are identified in Table 4.1 as:

- ORO.FTL.210 Flight duty period (FDP) – there are different basic daily FDP values for helicopters in general and EMS operations in particular. In addition, EMS related extensions without crew augmentation (up to 4 hours) for some States (see Tables 3.2 and 3.6) are significantly longer than the 1 hour extension allowed in the CRD.
- ORO.FTL.215 Flight times and duty periods – there are significant variations in the cumulative values for helicopters (HEMS) from the values in the CRD.
- ORO.FTL.235 Rest periods – again there are significant variations in basic and extended recovery rest durations for helicopters (HEMS) from the values in the CRD.

Table 4.1: Comparison of CRD Sections 1 and 2 to EMS Data supplied by States

CRD Sections	States' Responses
Section 1	
ORO.FTL.100 Scope	<p>The brief text in the CRD is consistent with the type of information provided by States on their FTL provisions.</p> <p>The scope of what constitutes EMS (see "Definitions" below) will need to be considered in future updates of the CRD requirements or a relevant Certification Specification.</p>
ORO.FTL.105 Definitions	<p>No obvious contradictions or conflicts based on information provided by States.</p> <p>Some extra EMS definitions may be required clarifying between different types of EMS flights, i.e. those involving transporting persons in urgent medical need, those who have already been stabilised at a medical facility, transport of organs and blood for transplant operations, rescue, etc.</p> <p>In addition, extra Helicopter related definitions may be required.</p>
ORO.FTL.110 Operator responsibilities	<p>States either have provisions consistent with what is in Subpart Q, OPS 1.1090 paragraphs 1-3 or use Subpart Q for Aeroplanes and hence this is broadly consistent with this CRD sub-section.</p> <p>Half the States surveyed do not have the equivalent yet for HEMS. For HEMS it was noted that paragraph (h) in this sub-section of the CRD about ensuring that flights are planned to be completed within the FDP is potentially difficult as EMS operations can fall outside duty periods and hence some flexibility (e.g. Commander's discretion) is required. In addition, it was noted that avoiding alternating day/ night duties as recommended in paragraph (e) can be difficult to comply with for HEMS.</p> <p>No obvious conflicts nor gaps in CRD provisions.</p>
ORO.FTL.115 Crew member responsibilities	<p>States either have provisions consistent with what is in Subpart Q, OPS 1.1090 paragraph 4 or use Subpart Q for Aeroplanes and hence this is consistent with this CRD sub-section.</p> <p>For HEMS reference is made by States to CAT.GEN.MPA.100 (paragraph (a) of this CRD sub-section) applicable to all crew members, and to EU OPS 3.085 which largely covers the same material. It was noted that paragraph (b) of the CRD requiring crew members to make optimum use of rest opportunities was not consistently represented in existing regulations for HEMS and should be in future regulations.</p>

CRD Sections	States' Responses
	No obvious conflicts nor gaps in CRD provisions.
ORO.FTL.120 Fatigue risk management (FRM)	States indicated that either their provisions were consistent with CRD (and the ICAO guidance manual) or else they had a gap with respect to the provisions in this CRD sub-section. No obvious conflicts nor gaps in CRD provisions.
Section 2	
ORO.FTL.200 Flight time specification schemes	This sub-section could be applied to EMS operations once the relevant EMS Certification Specification has been developed. There is nothing in it that is clearly in contradiction or not applicable to the EMS data provided by the States.
ORO.FTL.205 Home base	Some States note the nomination of a home base explicitly (e.g. Poland and Czech Republic), others implicitly in discussing travel to/ from a home base and in reference to Subpart Q provisions. No obvious conflicts nor gaps in CRD provisions.
ORO.FTL.210 Flight duty period (FDP) (a) Operator responsibilities (b) Basic maximum daily FDP (c) Use of extensions without in-flight rest (d) Use of extensions due to in-flight rest (e) Commander's discretion	The main inconsistencies between the CRD and the States' data for EMS with Aeroplanes (fixed wing aircraft) and Helicopters are the following: <ul style="list-style-type: none"> • Maximum daily FDPs for EMS vary from the tables given in this CRD section (CRD paragraph (b)). Helicopter FDPs are generally lower than those for fixed wing. • Some States follow the concept in the CRD (CRD paragraph (b)) of adapting the FDP based on numbers of sectors and WOCL encroachment. Other States just have a single maximum FDP for EMS. • Some States allow extensions without in-flight rest significantly longer than the 1 hour stated in the CRD (CRD paragraph (c)) in certain EMS situations with the mitigating measures described in Section 3 of this report. • Some States have different formulations under commander's discretion (CRD paragraph (e)) which relate to the need to finish the EMS operation (although this is not such a large difference from CRD

CRD Sections	States' Responses
ORO.FTL.215 Flight times and duty periods	<p>(e)(1)(ii).</p> <p>For fixed wing operations, the States are consistent with the cumulative duty hours and total block times from Subpart Q. Thus the additional constraints in the CRD compared to Subpart Q are not reflected in the States' requirements. In addition some States have annual duty hour limits.</p> <p>For HEMS there are more variations from the CRD in the cumulative duty hours and total block times (see Section 3, Table 3.8 of this report for the range on these parameters).</p>
ORO.FTL.220 Positioning	<p>For fixed wing operations, most of the States are consistent with Subpart Q provisions and hence consistent with CRD on positioning.</p> <p>For helicopters for those States who provided requirements these were consistent with the CRD. No EMS specific issues. No obvious conflicts nor gaps in CRD provisions.</p>
ORO.FTL.225 Split duty	<p>The CRD refers to the relevant Certification Specification for the details of minimum ground break durations, impact on FDP, facilities to be provided and other factors. Thus this does not contradict the split duty arrangements set out by the States.</p> <p>No EMS specific issues raised by States except constraints on combining split duty and EMS related extensions. No obvious conflicts nor gaps in CRD provisions.</p>
ORO.FTL.230 Standby	<p>The CRD refers to the relevant Certification Specification for the details of how Standby should be managed.</p> <p>The States' data are not inconsistent with the high level requirements set out in this sub-section of the CRD.</p>
ORO.FTL.235 Rest periods (a) Minimum rest at home (b) Minimum rest away from home (c) Reduced rest (d) Recurrent/ recovery rest (e) Additional rest periods	<p>For aeroplanes most States are consistent with Subpart Q and CRD requirements for minimum rest at home base and away from home base (paragraphs (a) and (b)). For reduced rest the CRD (paragraph (c)) refers to the relevant Certification Specification for detailed provisions. States are in line with Subpart Q on extended recovery rest (paragraph (d)). Subpart Q does not include the extra provision under the CRD for recurrent extended recovery rest being increased to 2 days twice within every 28 days. The main EMS specific issue raised by States on rest for fixed wing operations was the need for extended rest following an FDP extended for EMS reasons. This could be considered a gap in this section of the CRD or may be better treated in a relevant Certification Specification.</p>

CRD Sections	States' Responses
	<p>For helicopters a range of minimum rest periods are provided by the States, 8.5 hours up to 12 hours (see Table 3.7). For one State reduced rest of 6 hours is possible although for a limited number of days. Some of the States have explicit requirements on extended recovery rest which vary from the CRD (see Table 3.7). As with fixed wing, a significant EMS issue is the implication for rest following an extended FDP to handle an emergency. In addition, there is the limitation on the number of consecutive duty days with reduced rest or extended FDPs that some States require.</p>
<p>ORO.FTL.240 Nutrition</p>	<p>For fixed wing most States are consistent with Subpart Q which covers paragraph (a) of the CRD sub-section.</p> <p>The CRD sub-section has no obvious inconsistencies or gaps with respect to States' data.</p>
<p>ORO.FTL.245 Records of flight and duty times and rest periods</p>	<p>For fixed wing most States are consistent with Subpart Q which is broadly in line with this CRD sub-section. However, the CRD requires records to be kept for 24 months whereas Subpart Q requires at least 15 months.</p> <p>For HEMS there appears to be more variability over records (see Appendix 2 section 17).</p>
<p>ORO.FTL.250 Fatigue management training</p>	<p>In those States that responded on FRM, FRMS and the required training was in the process of being set up. Given the high level nature of the CRD requirements there are unlikely to be inconsistencies between States' developing requirements and this sub-section.</p>

5.0 Main Findings

5.1 Aeroplanes (AEMS)

5.1.1 EMS Related FDP Extensions

Some States allow extensions of up to 4 hours to daily FDP to cope with emergency medical events. PIC discretion can extend this even further. This is judged to have a potentially significant safety impact. Therefore it is proposed to model different options for extending FDP in the RIA (Task 1c).

One form of mitigating measure over such extensions is limiting their use to specific EMS scenarios and having clear criteria for establishing medical need. Some States limit EMS to just the transport of those in urgent need of medical care to appropriate facilities and transport of organs or blood for transplant operations. Other States also include transport of stabilised patients between medical facilities, transport of medical personnel and rescue activities under national EMS provisions. The UK requires that a medical person is on board to justify the EMS extension.

Additional measures before and during the FDP used by States to mitigate extension risks include:

1. Full rest before the extended FDP
2. FRMS
3. Relief pilot for single pilot operations
4. Prohibiting combining EMS operations FDP extension with extension due to split duty
5. Measures covering mixed operations (e.g. air taxi and EMS)
6. Limiting number of persons on aircraft
7. Limiting daily block hours
8. Limiting the frequency of such extended FDPs

After the FDP, mitigating measures include:

9. Extended rest afterwards
10. Records to NAA.

5.1.2 Rest

Beyond the issue of extended rest following extended FDPs from above, there were few EMS specific issues related to rest. Just France had explicit provision for reduced rest before or after an extended FDP. Recovery rest is in line with Subpart Q.

5.1.3 Commander's Discretion

PIC discretion can be used instead of the EMS specific extension provisions in Section 5.1.1 or can be used to further extend FDPs, e.g. up to 20 hours in the case of France. Existing mitigating measures include:

- Establishing medical need – e.g. patient or organ must be on board
- Restricting the additional time available under PIC discretion to a maximum amount (see Table 3.2)
- Restricting to 2 pilot operations
- FRMS
- Records to NAA.

5.1.4 Cumulative Duty Hours and Block Hours

As noted in Section 3.1.1 the cumulative duty hours and block hours in Table 3.4 are consistent with Subpart Q. The significance of the extra annual limits on duty hours that some States have will be considered in the RIA.

5.1.5 In-flight Rest/ Augmented Crew

Some States have provisions for use of crew augmentation to extend EMS FDPs. Options within the RIA can consider lengths of time for extensions and different mitigating measures. Existing measures include:

- Provision of stretcher or comfortable reclining seat for resting crew member
- Establishing medical need
- Extended rest after extended augmented FDP
- Limiting the frequency of such extended augmented FDPs.

5.1.6 Standby – Airport and Elsewhere

There are variations in how States treat standby. Within the RIA the range of airport standby provisions will be converted into options considering:

- The contribution of standby to FDP if there is a callout and to cumulative duty hours
- The quality and type of airport standby facilities
- Standby duration
- Minimum rest after standby with no callout.

An equivalent set of measures will also be considered in the context of standby elsewhere.

5.2 Helicopters (HEMS)

5.2.1 EMS Related FDP Extensions

The findings for HEMS are similar to those in Section 5.1.1 for AEMS. Extended FDPs up to 15-16 hours are possible in Poland, Switzerland and the UK. Therefore it is proposed to model

different options for extending FDP in the RIA (Task 1c) together with various mitigating measures. No additional measures from those listed in Section 5.1.1 were identified for HEMS.

5.2.2 Rest

The States' responses show variability in basic rest, reduced rest and extended recovery rest. Basic rest varies between 8.5 and 12 hours. Reduced rest varies from 6 to 11 hours. The extended rest provisions in Table 3.7 are quite varied across the States and take a number of formats depending on working cycles.

The RIA will look at representative options for these rest parameters.

5.2.3 Commander's Discretion

The same considerations apply for HEMS as those for aeroplanes in Section 5.1.3.

5.2.4 Cumulative Duty Hours and Block Hours

It is understood that most of the values for cumulative duty hours and block hours in Table 3.8 are general to helicopter operations rather than specific to HEMS. However, they will be considered in the Task 1 RIA.

5.2.5 Daily Duty Hours and Block Hours

Examples of duty hour limits are provided in Appendix 4 from Switzerland and France. In addition daily block time limits are set in Czech Republic, Switzerland and the UK. These can also be used for developing RIA options.

5.2.6 Standby – Airport and Elsewhere

As for AEMS in Section 5.1.6.

6.0 References

1. EASA (2010): 'Implementing Rules on flight and Duty Time Limitations and rest requirements for commercial air transport (CAT) with aeroplanes', 20th December 2010, Notice of Proposed Amendment (NPA) No. 2010-14A
2. EASA (2012): 'Comment Response Document (CRD) to NPA No. 2010-14A', 18th January 2012
3. Czech Decree 466/2006 Coll. DECREE of 26 September 2006 on the flight safety standard - SECTION FOUR FLIGHT SAFETY STANDARD FOR HELICOPTER EMERGENCY MEDICAL SERVICE OPERATOR, Articles 21 - 27
4. The Minister of State, Minister for Ecology, Development and Sustainable Planning, 'Arrêté du 25 mars 2008 pris en application du règlement (CEE) n° 3922/91 modifié relatif à l'harmonisation de règles techniques et de procédures administratives dans le domaine de l'aviation civile, et relatif aux dispositions à prendre par l'autorité en vue de la mise en œuvre des dispositions relatives aux limitations de temps de vol et aux exigences en matière de repos des équipages de la sous-partie Q de son annexe III (EU-OPS)'
5. The Minister of State, Minister for Ecology, Development and Sustainable Planning, 'Arrêté du 9 août 2007 relatif au contrôle technique des opérations aériennes civiles d'urgence par hélicoptère', Version consolidée au 24 août 2007
6. Erste Durchführungsverordnung zur Betriebsordnung für Luftfahrtgerät (Anwendungsbestimmungen zu Anhang III – EUOPS - der VO (EWG) Nr. 3922/91 (1. DV LuftBO), 10. Juni 2008
7. Zweite Durchführungsverordnung zur Betriebsordnung für Luftfahrtgerät (Dienst-, Flugdienst-, Block- und Ruhezeiten von Besatzungsmitgliedern in Luftfahrtunternehmen und außerhalb von Luftfahrtunternehmen bei berufsmäßiger Betätigung) (2. DV LuftBO), 6. April 2009
8. Norwegian Regulation on the implementation and harmonization of technical requirements and administrative procedures in civil aviation with additional provisions on working hours for crew members (dated 21st February 2008, reg. no. 189)
9. Norwegian Regulations on working hours and more for crew members in civil aircraft (dated 30th December 2004, reg. no. 1817).
10. Polish 'Regulation of the Minister of Infrastructure' (dated 13th December 2002) on the working time and rest time of aircraft crew members and air traffic controllers
11. Polish Civil Aviation Act 2002, with amendments to Article 103 for HEMS
12. Spanish Circular del Director General de Aviación Civil (dated 17th December 2010)
13. Spanish Real Decreto 1952/2009 (dated 18th December 2010)
14. Spanish Circular Operativa 16B
15. Swiss Supplement, Duty Time Requirements for HEMS OPS, based on directive SR 748.127.1 "Verordnung des UVEK vom 23. November 1973 über die Betriebsregeln im gewerbsmässigen Luftverkehr" (VBR I)
16. UK CAA, The Avoidance of Fatigue in Aircrews CAP 371, Guide to Requirements, January 2004

17. European HEMS and Air Ambulance Committee (EHAC) website: <http://www.ehac.eu/>

7.0 Acronyms/ Abbreviations

Term	Description
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Circadian Alertness Simulator
CAT	Commercial Air Transport
CM	Crew Member
consec.	consecutive
CRD	Comment Response Document
CS	Certification Specification
DNV	Det Norske Veritas
EASA	European Aviation Safety Agency
EMS	Emergency Medical Services
EU OPS	European Union (Safety Regulations) Commercial Air Transportation Operations
FDP	Flight Duty Period
FRM(S)	Fatigue Risk Management System
FTL	Flight Time Limitations
HEMS	Helicopter Emergency Medical Services
hrs	hours
IFR	Instrument Flight Rules
IR	Implementing Rules
JAR OPS	Joint Aviation Requirements on Commercial Air Transportation Operations
mths	months
NAA	National Aviation Authority
N/A	Not Applicable
NM	Nautical Miles
NPA	Notice of Proposed Amendment
para.	paragraph
pg.	page
PIC	Pilot In Command
RIA	Regulatory Impact Assessment
SRG	Safety Regulation Group
TBC	To Be Checked/ Confirmed
TBD	To Be Done
VFR	Visual Flight Rules
WOCL	Window Of Circadian Low

Appendix 1 – Questionnaire Template

This was the questionnaire used to gather information on AEMS. An identical format was used for the HEMS data collection.

Emergency Medical Services (EMS) by 'AEROPLANES' - Flight Time Limitations (FTL) Provisions Data Sheet	Potential Fatigue Contributor (Description)	Examples of Possible FTL Provisions <i>(Note: these are for illustration only & NAA should provide specific FTL provisions)</i>	Flight Time Limitations (FTL) Provisions on Emergency Medical Services (AEROPLANES)
Duty Hours	Combination of flight duties with ground duties	E.g. reduced duty/flight duty periods or limitations on combining flight and ground duties	
Cumulative Duty	High cumulative workload	E.g. limiting successive long duty periods, rolling limits on duty and flying hours, managing fatigue through days-off, longer rest periods.	
Block Time	Excessive block times	E.g. limitations on total block times of flights on which individual crew member is assigned.	
Basic Maximum Flight Duty Period	Length of Flight Duty Period (FDP)	E.g. maximum FDP limits, extra rest requirements, break/meal opportunities, post-flight duty inclusion in FDP.	
Basic Maximum Flight Duty Period	Duties between 02:00-05:59: sleep deprivation/deficit due to waking-up/staying awake/finishing duty in WOCL	E.g. reducing maximum allowable FDP, additional rest, planning for optimum sleep opportunity etc.	
Basic Maximum Flight Duty Period	Number of sectors / workload	E.g. allowable FDP decreased by the number of sectors worked.	
Night, Early & Late Duties	Consecutive night duties	E.g. reducing allowable FDP, maximum number of such duties allowed, limiting number of sectors and/or consecutive nights or additional rest periods.	
Night, Early & Late Duties	Consecutive series of early starts and/or late arrivals	E.g. limit number of consecutive 'earlies' and/or 'late' finishes and provide extended rest period between such series of	

Emergency Medical Services (EMS) by 'AEROPLANES' - Flight Time Limitations (FTL) Provisions Data Sheet	Potential Fatigue Contributor (Description)	Examples of Possible FTL Provisions <i>(Note: these are for illustration only & NAA should provide specific FTL provisions)</i>	Flight Time Limitations (FTL) Provisions on Emergency Medical Services (AEROPLANES)
		duties or limit FDP for regular early starts/arrivals etc.	
Duty Extensions	Planned extension of duty/FDP	E.g. a maximum limit on extension, restrictions on number of extensions, extra rest requirements etc.	
Duty Extensions due to In-Flight Rest	Flight sectors beyond maximum FDP	E.g. in-flight relief planning, augmented flight crew, requirements for minimum rest periods on-board and taking into consideration type of on-board rest.	
Positioning	Positioning duties, before and immediately after an FDP	E.g. does the position duty time count as FDP and for post-FDP positioning are there provisions to prevent excessive duty day.	
Travelling	Excessive travelling time	E.g. maximum travel time to home base, provisions for limiting travelling time out of base	
Extension by on-ground break (split duty)	'Split-duty' beyond maximum FDP	E.g. establishing minimum consecutive number of hours for the break and for setting a maximum FDP based on length of break/time of day, or provide suitable accommodation for break, limit number of sectors etc.	
Pilot-In-Command Discretion	Disruption on the day	E.g. adapt schedules or crewing arrangements, and/or provide a process for Pilot to extend an FDP based on circumstances or to reduce a rest period and requirement for reporting to the NAA above a certain threshold.	

Emergency Medical Services (EMS) by 'AEROPLANES' - Flight Time Limitations (FTL) Provisions Data Sheet	Potential Fatigue Contributor (Description)	Examples of Possible FTL Provisions <i>(Note: these are for illustration only & NAA should provide specific FTL provisions)</i>	Flight Time Limitations (FTL) Provisions on Emergency Medical Services (AEROPLANES)
Airport Standby	Airport standby time	E.g. taking account of airport standby time when calculating duty/FDP and rest period and provisions for ensuring quality and type of airport standby facilities.	
Standby other than Airport	Standby elsewhere	E.g. take account of standby time in duty/FDP and rest calculation. Also are there specific call-out requirements and/or limitation on standby duration.	
Basic (Minimum) Rest	Disruption before the day or a lack of rest opportunity	E.g. crew rosters to allow recovery from cumulative fatigue and are minimum rest periods/sleep hours defined.	
Basic Rest-Reduced Rest	Lack of rest opportunity	E.g. minimum duration of reduced rest, augmentation of rest period following reduced rest, reduced maximum FDP and for limiting number of reduced rest occasions and for number of sectors flown under reduced rest.	
Extended & Recovery Rest	'Circadian disruption' during mixing duty transitions between early/late night duties	E.g. restricting number of early/late/night transitions or for reduced FDP or extended rest periods for time-zone crossings.	
Time Zone Crossing	Time zone de-synchronization	This is predominantly for long-haul operations and therefore may not be applicable for EMS operations. If applicable, examples may include extended recovery rest.	
Nutrition	Lack of nutrition affecting performance	E.g. to ensure meal/drink opportunity when FDP exceeds a certain timeframe.	

Emergency Medical Services (EMS) by 'AEROPLANES' - Flight Time Limitations (FTL) Provisions Data Sheet	Potential Fatigue Contributor (Description)	Examples of Possible FTL Provisions <i>(Note: these are for illustration only & NAA should provide specific FTL provisions)</i>	Flight Time Limitations (FTL) Provisions on Emergency Medical Services (AEROPLANES)
Records for Flight Duty & Rest Periods	Inadequate recording system for flight duty and rest periods	E.g. maintenance of records for flight duty and rest periods and pilot-in-command discretion reports.	
Other Elements	<i>Provide details on specific FTL provisions that are in place for other elements e.g. awareness of fatigue risk (training/other), implementation of safety management system (SMS) and/or FRMS?</i>		

Appendix 2 - Collation of State's FTL Data

1. Duty Hours:

Duty Hours (Regulations)	
CRD	<p>'Duty' means any task that a crew member performs for the operator, including flight duty, administrative work, giving or receiving training, checking, positioning, and some elements of standby.</p> <p>'Duty period' means a period which starts when a crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties.</p> <p>Post-flight duty shall count as duty. The operator shall specify in its Operations Manual the minimum time period for post-flight duties.</p> <p>No limit on maximum allowable daily duty period.</p>
EU OPS Subpart Q	Definitions similar to above. No limit on maximum allowable duty period. However, addressed through rest requirements.

Duty Hours (Aeroplanes)	
UK	<p>Duty defined as "Any continuous period during which a crew member is required to carry out any task associated with the business of an aircraft operator." Any duty that does not have minimum rest between it and an FDP is counted as FDP.</p> <p>No restrictions on duty hours.</p>
Switzerland	Duties shall count in total. Generally no difference between ground or flight duty.
Spain	When a FDP is assigned after ground duty, without a minimum rest period in between, ground duty shall be included as 100% FDP in subsequent FDP.
Germany	Ground and flight duties combined as in Subpart Q.
France	As in Sub Part Q.
Norway	As in Sub Part Q.
Poland	Duty time shall not exceed 15 hours 30 minutes in 24 hours.
Czech Republic	As in Sub Part Q.

Duty Hours (Helicopters)	
UK	As for Aeroplanes table above.
Switzerland	<p>Duty time is a period which starts on reporting to operator for duty & ends 30mins after block of last flight. If duty was not connected to FDP, then it ends after finalising work for operator. The FTL System in Switzerland is based on a flat rate recording regulation. Depending on the time of the "Airport Standby" period during a 24 hour-day a flat rate has to be recorded as "Duty Time", e.g. 9.5 hours a day.</p>

Duty Hours (Helicopters)	
Spain	As for Aeroplanes table above.
Germany	As for Aeroplanes table above.
France	<p>'Duty period' is defined as a period of time including on site standby, flight periods, pre and post flight duties, training, recurrent training and medical examinations.</p> <p>'On site standby' is a defined period of time spent on the work site, including periods of inactivity, during which a technical crew member (including flight crew) may receive an assignment for a flight.</p> <p>Daily limits for onsite standby are set for different cycles ranging from 12-14 hours (see Appendix 4 for more details).</p>
Norway	All duty (ground duty & flight duty) counts as 100%. This is also valid for breaks where suitable rest arrangement does not exist.
Poland	Duty time shall not exceed 15 hours 30 minutes in 24 hours.
Czech Republic	Duty period defined consistent with Subpart Q. Total duty period for HEMS crew member shall not exceed 15 hours during 24 consecutive hours.

2. Cumulative Duty:

Cumulative Duty (Regulations)	
CRD	<p>ORO.FTL.215 Flight times and duty periods</p> <p>(a) The total duty periods to which a crew member may be assigned shall not exceed:</p> <p>(1) 60 duty hours in any 7 consecutive days;</p> <p>(2) 110 duty hours in any 14 consecutive days; and</p> <p>(3) 190 duty hours in any 28 consecutive days, spread as evenly as practicable throughout this period.</p> <p>(c) Post-flight duty shall count as duty. The operator shall specify in its Operations Manual the minimum time period for post-flight duties.</p>
EU OPS Subpart Q	Total duty periods must a) not exceed 190 duty hours in any 28 consecutive days & b) 60 duty hours in any 7 consecutive days

Cumulative Duty (Aeroplanes)	
UK	Max cumulative duty hours shall not exceed: 55 hrs in any 7 consecutive days (but can be increased to 60 hrs when a rostered duty schedule is subject to unforeseen delays), 95 hrs in any 14 consecutive days & 190 hrs in any 28 consecutive days.
Switzerland	If limits are reached according to Subpart Q the flight crew must have a rest period.
Spain	Subpart Q-OPS 1.1100: 60 duty hours in 7 consecutive days & 190 duty hours in 28 consecutive days spread as evenly as possible. Plus 1800 duty hours (+200 extra hours for transport other than passenger) in calendar year.

Cumulative Duty (Aeroplanes)	
Germany	As per Subpart Q. Also, maximum of 2000 hours per calendar year.
France	As in Subpart Q.
Norway	As in Subpart Q. Plus annual maximum of 2000 duty hours, including standby hours converted to duty hours.
Poland	As in Subpart Q but some flights are ad-hoc.
Czech Republic	As in Subpart Q.

Cumulative Duty (Helicopters)	
UK	Maximum duty hours shall not exceed 60hours in any 7 consecutive days & 200 hours in any 28 consecutive days.
Switzerland	2000 hours work per year.
Spain	2000 duty hours per year.
Germany	210 hours within 30 consecutive days and 1800hrs within 12 consecutive months.
France	2000 duty hours per year. Cumulative duty period over a week is limited to maximum of 44 hours.
Norway	Annual working hours shall not exceed 2000hours (including EMS).
Poland	190 hrs in any 28 consecutive days spread as evenly as possible, 60 hrs in any consecutive 7 days
Czech Republic	Total duty hours must not exceed: 200 hrs in any 28 consecutive days, 60 hrs in any 7 consecutive days & 1800 hrs in any 12 consecutive months.

3. Block Time:

Block Time (Regulations)	
CRD	ORO.FTL.215 Flight times and duty periods (b) The total flight time of the flights on which an individual crew member is assigned as an operating crew member shall not exceed: (1) 100 hours of flight time in any 28 consecutive days; and (2) 900 hours of flight time in any calendar year; and (3) 1 000 hours of flight time in any 12 consecutive calendar months.
EU OPS Subpart Q	Total block times must not exceed a) 900 block hours in a calendar year b) 100 block hours in any 28 consecutive days

Block Time (Aeroplanes)	
UK	Subpart Q-OPS 1.1100: 900 block hours in a calendar year and 100 block hours in 28 consecutive days.
Switzerland	As in Subpart Q 1.1100
Spain	Subpart Q-OPS 1.1100: 900 block hours in a calendar year and 100 block hours in 28 consecutive days. 945 block hours in 12 consecutive months

Block Time (Aeroplanes)	
Germany	Subpart Q-OPS 1.1100
France	Subpart Q-OPS 1.1100
Norway	Subpart Q-OPS 1.1100
Poland	Sub Part Q OPS 1.1100 - 1.2. a) and b) - 900 block hours in a calendar year; and 100 block hours in any 28 consecutive days
Czech Republic	Subpart Q-OPS 1.1100

Block Time (Helicopters)	
UK	CAP371ref.23.4/pg16: Absolute limits on flying hours: Maximum flying hrs =90 hrs in any 28 consecutive days & 800 hrs in 12month period. Also, beyond this, flying hours are limited as: -to 18 hours in any 3 consecutive days -to 30 hours in any 7 consecutive days - to 240 hours in any 3 consecutive 28 day periods.
Switzerland	- Per day 7 hours (At one day per month block time can be extended to 8 hours) - Per half month 60 hours - Per Month 110 hours - Per 3 month 280 hours - Per year 900 hours
Spain	Total duty periods shall not exceed 900 block (flying) hours in calendar year, 945 block hours in 12 consecutive months and 100 block hours in 28 consecutive days.
Germany	Block time must not exceed 900 hours during calendar year. But for helicopter rescue service this is limited to 600 hours within 365 consecutive days.
France	Flight duty is defined as total time between rotor engagement and rotor stopped. Maximum durations of flight duty are 8 hours in 24 hrs, 35 hours per week and 75 hours per month.
Norway	Maximum of 900 hours per calendar year.
Poland	Flight time for helicopter EMS shall not exceed: -80 hours within the next 28 days -800 hours within a calendar year.
Czech Republic	Total time of all flights (Decree art.23) must not exceed: a) 7 hrs in any 24 consecutive hours b) 90 hrs in any 28 consecutive days c) 900 hrs in any 12 consecutive months.

4. Basic Maximum FDP:

Basic Maximum FDP (Regulations)			
	Length of Duty Period	Duties between 02:00 & 05:59	Number of sectors/workload
CRD	<p>ORO.FTL.210 Flight duty period (FDP) (a) The operator shall: (1) define reporting times appropriate to the operation;</p> <p>(b) Basic maximum daily FDP. (1) The maximum daily FDP without the use of extensions for acclimatised crew members shall comply with CRD table (pg 78)</p> <p>(2) The maximum FDP when crew members are in an unknown state of acclimatisation shall comply with the next CRD table (page 78)</p>	Max. daily FDP adjusted to take account of this in CRD Table for acclimatised crew members.	Max. daily FDP adjusted to take account of this in CRD Tables for acclimatised and unknown acclimatization state.
EU OPS Subpart Q	Subpart Q of EU OPS 1.1105 states - not relevant to EMS operations	Subpart Q of EU OPS 1.1105 states - not relevant to EMS operations	Subpart Q of EU OPS 1.1105 states - not relevant to EMS operations

Basic Maximum FDP (Aeroplanes)			
	Length of Duty Period	Duties between 02:00 & 05:59	Number of sectors/workload
UK	CAP371/13, pg8-10: Pre & post flight duties are part of FDP. See Tables A-C on FDP allowances with 2 or more crew & with single crew. The FDPs are determined by local start time of duty, number of sectors & whether crew is acclimatised or not.		
Switzerland	As in Sub Part Q OPS 1.1105		
Spain	<p>Circular Operativa 16B Maximum FDP function of report time and number of sectors worked for flight crew (single pilot and minimum 2 pilots) and passenger cabin crew in passenger operations = Tables in Article 5.3.1.1.</p> <p>For 2 or more pilots in passenger ops. the max. FDP is 14 hours.</p>		
Germany	<p>DVLUftBO1ref.§10 For operations with one pilot and for medical emergency operations maximum FDP is in accordance with the provisions of Sub Part Q-</p>	Maximum FDP is 13 hours with 30 minute-reductions per sector (starting from 3 rd sector) and reductions for WOCL encroachment.	

Basic Maximum FDP (Aeroplanes)			
	Length of Duty Period	Duties between 02:00 & 05:59	Number of sectors/workload
	OPS 1.1105. If EMS involves single pilot, max. FDP is reduced to 10 hours and extension provisions from OPS 1.1105 are not allowed.		
France	Subpart Q but if special EMS provisions are in place (with 2 Pilots & FRMS implemented) then: a) FDP is 18hrs max b) if FDP >14hrs then consecutive rest is at least 24hrs including local night except if reduced rest provisions are applied c) Post flight duty = duty, not FDP. Maximum FDP is 18 hours for EMS with two pilots and with FRMS implemented. 1 hour extension from OPS 1.1105 allowed providing 18 hour cap not exceeded.	Subpart Q (reduction by 100% of the encroachment when the FDP starts in the WOCL and reduction by 50% when it ends in the WOCL. Reduction is up to a max of 2 hours.	If special EMS provisions are implemented sector reduction : -30 minutes/sector from the 4th sector (with a maximum reduction of 2 hours)
Norway	Covered by SubpartQ-OPS1.1105. Basic Max FDP for ambulance flights is increased by 2hrs. Hence up to 15 hours is possible.	Covered by SubpartQ-OPS1.1105.	Covered by SubpartQ-OPS1.1105. FDP reduced by 30min from & including 3rd landing.
Poland	Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 36 (working time of aircraft crew member shall not exceed time standards for carrying out aviation activities 12 h within subsequent 24 hours).	No provisions established for this.	No provisions established for this.
Czech Republic	As per Subpart Q OPS 1.1105.		

Basic Maximum FDP (Helicopters)			
	Length of Duty Period	Duties between 02:00 & 05:59	Number of sectors/workload
UK	CAP371: See Table 'D' (page 15) for FDP for different start times, limits on maximum flying times and single pilot provisions. Maximum FDP is 12 hours (with two pilots and when FDP starts between 08:00-13:59) in a single day.		
Switzerland	If duty = 9.5 hours per day can work for 5 consecutive pikett days. If duty = 13 hours per day can work for 2 consecutive pikett days. (Pikett is effectively a period of standby other than at the airport. A pikett day is a period of 24 hours including all pikett time, airport standby time, flight duty period, post flight duty time and block time.)	No FDP adjustments specified for duties between 02:00 & 05.59 but states minimum rest requirements for flights between 22:00h & 06:00.	No FDP adjustments specified to take into account sectors or workload.
Spain	Basic Maximum FDP is limited to 12 hours - see Circular Operativa 16B ref. 5.3.1.1 Tables (minus -1 hour) for details on reporting times & number of sectors worked.		
Germany	Unrestricted flight time between 2 rest periods is 10 hours (max).	No FDP adjustments specified for duties between 02:00 & 05.59.	No FDP adjustments specified to take into account of sectors or workload.
France	Maximum duty duration is 12 hours.	-	-
Norway	N/A - no maximum FDP limit defined. Note: FTL requirements for EMS helicopters are determined by agreement between the operator and their aircrew.		
Poland	Article 103a gives a maximum working time of 15 hours 30 minutes over 24 hours.	No FDP adjustments specified for duties between 02:00 & 05.59 in Article 103a. Other regulations on general 'helicopter flying' include impact of time of day on duty time.	No FDP adjustments specified to take into account of sectors or workload in Article 103a.
Czech Republic	Decree art 25 ref.4, 6 & 7: Total duty must not exceed 15hrs during 24hr consecutive hours. Max FDP for multi-pilot helicopter crew is: a) 12hrs for VFR operations b) 10hrs for IFR. For single pilot helicopter crew this = 10hrs.		

5. Night, Early & Late Duties:

Night, Early & Late Duties (Regulations)		
	Consecutive night duties	Consecutive series of early starts &/or late arrivals
CRD	No explicit provisions	ORO.FTL.110 An operator shall, where applicable to the type of operation: (e) allocate duty patterns which avoid practices that cause a serious disruption of established sleep/work pattern such as alternating day/night duties
EU OPS Subpart Q	No explicit provisions	OPS 1.1090 para 3.3. Operators shall allocate duty patterns which avoid such undesirable practices as alternating day/night duties or the positioning of crew members so that a serious disruption of established sleep/work pattern occurs.

Night, Early & Late Duties (Aeroplanes)		
	Consecutive night duties	Consecutive series of early starts &/or late arrivals
UK	Ref: CAP371-7.2: Max of 3 consecutive duties that occur between 0100 to 0659hrs local time. No more than 4 such duties in any 7 consecutive days. Any run of consecutive duties (late finishes, or nights or early starts) can only be broken by a period of not less than 34 consecutive hours free from such duties. The 34 consecutive hours may include a duty that is not Early, Late or Night duty.	
Switzerland	No provisions.	No provisions.
Spain	N/A (No provisions)	N/A (No explicit provisions)
Germany	No provisions covering this.	No explicit provisions covering this.
France	No provisions covering this.	No provisions covering this.
Norway	N/A - no provisions	N/A - no explicit provisions
Poland	No provisions established for this.	No explicit provisions established for this.
Czech Republic	No special provisions	No special provisions

Night, Early & Late Duties (Helicopters)		
	Consecutive night duties	Consecutive series of early starts &/or late arrivals
UK	As for Aeroplane table above.	
Switzerland	For bases which work regularly between 22.00 and 06.00, pikett duty periods are usually restricted to 2 days.	HEMS Addendum ref. 1.6.6: If during a duty day there is >1 flight starting 22:00-06:00hrs local time, then minimum rest period of 6hrs must be received after flight duty.
Spain	N/A (No provisions)	N/A (No provisions)
Germany	No provisions covering this.	No provisions covering this.
France	No provisions	No provisions
Norway	N/A - no provisions	N/A - no provisions
Poland	No provisions established for this.	No provisions established for this.
Czech Republic	No special provisions	No special provisions

6. Duty Extensions:

Duty Extensions (Regulations)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
CRD	<p>ORO.FTL.210 Flight duty period (FDP) (c) Maximum daily FDP with the use of extensions without in-flight rest. (1) The maximum daily FDP may be extended by up to 1 hour up to two times in any 7 consecutive days. In that case: (i) the minimum pre-flight and post-flight rest periods shall be increased by 2 hours; or (ii) the post-flight rest period shall be increased by 4 hours. (2) The use of the extension shall be planned in advance, and shall be limited to a maximum of: (i) 5 sectors; or (ii) 4 sectors, when the WOCL is encroached; or (iii) 2 sectors, when the FDP encroaches the WOCL by more than 2 hours. (3) Extension of the maximum basic daily FDP without in-flight rest shall not be combined with extensions due to in-flight rest or split duty in the same duty</p>	<p>ORO.FTL.210 Flight duty period (FDP) (d) Maximum daily FDP with the use of extensions due to in-flight rest. (1) Flight time specification schemes shall specify the conditions for extensions of the maximum basic daily FDP with in-flight rest in accordance with the Certification Specification applicable to the type of operation, taking into account: (i) the number of sectors flown; (ii) the minimum in-flight rest allocated to each crew member; (iii) the type of in-flight rest facilities; and (iv) the augmentation of the basic flight crew.</p>

Duty Extensions (Regulations)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
	<p>period.</p> <p>(4) Where the extensions are used for consecutive FDPs, the additional pre and post-flight rest between the two extended FDPs shall be provided consecutively.</p> <p>(5) Flight time specification schemes shall specify the limits for extensions of the maximum basic daily FDP in accordance with the Certification Specification applicable to the type of operation, taking into account:</p> <p>(i) the number of sectors flown; and</p> <p>(ii) WOCL encroachment.</p>	
EU OPS Subpart Q	OPS 1.1105 is N/A to EMS although some States do make reference to it.	See OPS 1.1115

Duty Extensions (Aeroplanes)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
UK	<p>Ref. CAP371 air ambulance supplement AnnexB,pg16:</p> <p>Air ambulance flight FDP may be extended by max of 4hrs subject to conditions:</p> <p>a) qualified medical staff on flight</p> <p>b) only immediate family/next of kin allowed in addition to patient and medical staff</p> <p>c) crew must have had full rest entitlement prior to duty.</p> <p>Single Pilot: FDP extension >4hrs permitted providing additional relief Pilot used until organ/patient is disembarked.</p> <p>Two-Pilot: Pilot may use discretion to extend FDP >4hrs to offload/deliver patient/organ to destination. At least 48hrs must elapse between end of one extended air ambulance FDP & start of another. Pilot can fly 3 air ambulance extended FDPs in any 28 consecutive</p>	<p>A further 2 hours may be added to the 4 already allowable subject to the following additional conditions being met:</p> <p>a) A third Captain qualified crew member must be on board.</p> <p>b) A stretcher or comfortable reclining seat must be available for the resting crew member.</p> <p>c) Maximum duty will be 18 hours or as per Table A plus 6 hours whichever is the lesser.</p> <p>d) The air ambulance operation will terminate when the patient or organ has been offloaded and full rest entitlement must be taken at that point.</p> <p>e) An additional 'day off' (minimum 34 hours which includes 2 local nights) must be taken on completion of the full rest entitlement.</p> <p>f) All 'heavy crew' duty days carried out</p>

Duty Extensions (Aeroplanes)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
	<p>days.</p> <p>For combined 'public transport/air ambulance work: FDP extension by split duty & Pilot discretion is allowed. The extension permitted for dedicated air ambulance (above), does not apply in this case.</p> <p>Air ambulance FDP can be extended from values in Tables A-C by up to 4 hours subject to conditions. Therefore maximum FDP permitted is 18 hours for 2-pilot crew if daily start time and number of sectors allow. In exceptional circumstances, FDP may be extended beyond 4 hour extension.</p>	<p>must be notified to the CAA.</p> <p>a) Only 2 'heavy crew' duty days will be permitted in any 28 consecutive days. b) In any 28 day period containing a 'heavy crew' duty day: i) A minimum of 10 days off will be achieved. ii) Maximum duty hours must not exceed 160 hours. iii) Maximum flying hours shall be limited to 75 hours. iv) A maximum of 60 hours flying averaged over 3 such 28 consecutive day periods. v) If one or more such periods contain 'heavy crew' duty days then the allowable flying hours for the 12 month period must be reduced to 700 hours.</p>
Switzerland	<p>Not applicable as already at limit.</p> <p>Extensions beyond 13 + 1 hours (Subpart Q) would involve augmented crew.</p>	<p>Augmented flight crew have following limits: - 3 Flight Crew Members (FCM) 3 sectors max 20 hours, 5 sectors max 16 hours, 8 sectors max 10 hours FDP / - 4 FCM < 6 sectors max 34 hours.</p>
Spain	N/A (No provisions)	<p>Article 9 and 10, Real Decree to 1952/2009 Flight Crew; ≥ 70° pitch seats, augmented → +5h, max 16h30min ≥ 70°, double crew → +7h, max 18h30min ≥ 45°, augmented → +4h30min, max 16h15min ≥ 45°, double crew → +6h30min, max 18h < 45°, augmented, additional rest requirements → +4h, max 16h < 45°, double crew, additional rest requirements → +5h30min, max 17h30min</p>
Germany	Subpart Q: OPS 1.1105 is valid	NAA may grant FDP extensions up to 18hrs max twice within 7 consecutive

Duty Extensions (Aeroplanes)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
		days - providing crew is augmented and there is suitable sleeping arrangement in-flight. Cannot be pilot flying if served over 12 hours.
France	<p>The following paragraphs of Subpart Q are applicable for flights operated under special EMS provisions : OPS 1.1105 §2.1 (+1h extension), §2.2 (5 sectors max) and §2.5 (2 extensions in 7 consecutive days). Maximum allowable FDP is 18h in all cases</p> <p>e.g. :</p> <ol style="list-style-type: none"> 1. one may plan a service commencing at 4h30 in the morning (1h30 encroachment) with 4 sectors (0h30 reduction). In that case, allowable FDP would theoretically be: 18h-1h30-0h30 = 16h. It can be extended up to 17h thanks to the +1h extension 2. one may plan a service commencing at 5h30 in the morning (0h30 encroachment) with 3 sectors (no reduction). In that case, allowable FDP would theoretically be: 18h-0h30 = 17h30. It can be extended up to 18h with the 1h extension (18h30 capped to 18h) <p>Maximum FDP up to 18 hours is allowed.</p> <p>1 hour extension on FDP is allowed as in Subpart Q up to 18 hour cap.</p>	<p>Same as for commercial air transport</p> <p><u>Theoretically</u> :</p> <ol style="list-style-type: none"> a. Flight crew : <ul style="list-style-type: none"> _1 additional pilot : . bunks (90°): FDP up to 18h . reclinable seat (not precisely defined) : FDP up to 16h _minimum consecutive rest of 90 minutes b. Cabin crew (no additional cabin crew member required): <ul style="list-style-type: none"> . bunks (90°): FDP up to 18h . reclinable seat : FDP up to 16h (near bunks for the NPA) . minimum rest of 90 minutes c. Sectors requirements : 4 max (-30 minutes/sector from the third) for FDP of 16h or less and 2 sectors max for FDP of more than 16h (which need bunks) d. Minimum rest at home base following extended FDP is 48h with 2 local nights <p><u>In practice</u>, the extension for in flight rest is "pointless" considering the possibility to operate 18h FDP under EMS provisions with 2 flight crew members</p>
Norway	<p>Subpart Q: OPS 1.1105 is valid.</p> <p>2 hours extension allowed for ambulance mission.</p>	N/A (No provisions)
Poland	<p>Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 37 - can extend by 2 hours if participating in rescue action or 3 hours</p>	No provisions established for this.

Duty Extensions (Aeroplanes)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
	<p>if flying ill or wounded patient to medical care or to deliver blood or human organs for transplant.</p> <p>Maximum duty time shall not exceed 15 hours 30 minutes in 24 hours.</p>	
Czech Republic	<p>As in Sub Part Q.</p> <p>FDP extension of 1 hour is permitted – as in Subpart Q. No special EMS extension provisions stated.</p>	No national provisions.

Duty Extensions (Helicopters)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
UK	<p>Same as Aeroplane table.</p> <p>Air ambulance FDP can be extended from values in Tables D by up to 4 hours subject to conditions .</p> <p>Therefore maximum FDP permitted is 16 hours for 2 pilot crew if daily start time allows.</p> <p>In exceptional circumstances, FDP may be extended beyond 4 hour extension – controls on this are described in CAP 371.</p> <p>If the 4 hour extension is granted under the following conditions then the use of spilt duty to further extend the FDP is not permitted.</p>	The Helicopter scheme in Annex D of CAP 371 is based on no use of in-flight relief.
Switzerland	<p>HEMS Addendum ref. 1.7 Exceedances of Flight & Duty Time Limitations: At Pilot's discretion the following may apply:</p> <p>1) FDP may be extended to max of 15hrs (excl. 30mins of post flight duties at end of FDP &</p> <p>2) if on final sector within FDP,</p>	No provisions (Flight sectors N/A).

Duty Extensions (Helicopters)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
	<p>additional unforeseen circumstances occur after take-off, resulting in permitting hours being exceeded then flight may continue to planned destination or alternate</p> <p>3) if life is in danger then Pilot may extend Duty Time as appropriate after consultation with crew members.</p> <p>Also, if exceedance > 1hour then copy of discretion report must be sent to CAA.</p>	
Spain	Stated as N/A	Stated as N/A
Germany	<p>Up to 2 hours FDP extension allowed.</p> <p>Therefore a maximum FDP of 12 hours is permitted.</p> <p>FDP + Standby time (between two rest periods) must not be more than 15 hours 30 minutes.</p>	No national provisions stated.
France	<p>No special EMS provisions are stated for FDP extension (as provided for fixed-wing) on the basic 12 hours.</p> <p>However, there is a possibility of a 2-hour extension through the use of captain's discretion.</p>	No provisions.
Norway	N/A - no provisions	N/A - no provisions
Poland	<p>Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 37 - (in case of participation in rescue action - by 2 h, and flight with an ill or wounded patient to the medical care point or deliver blood or human organs for transplants - by 3 h). § 38 Flight time 8 h within subsequent 24 hours may be exceeded upon of the approval of the aircraft commander when carrying out tasks by 2 hours. § 39 time of carrying out aviation activities, referred to in § 37 or 38 may be exceeded only on two subsequent days, observing a weekly working time</p>	No provisions stated.

Duty Extensions (Helicopters)		
	Duty Extensions	Duty Extensions due to In-Flight Rest
	standard in the assumed settlement period not exceeding 3 months. Maximum working time limit of 15 hours 30 minutes over 24 hours.	
Czech Republic	(Decree art25/5): Air emergency services flight duty can be extended, if during duty a helicopter receives request for HEMS flight, by the time necessary to perform such flight. Total duty must not exceed 15hrs during 24hr consecutive hours.	N/A

7. Positioning:

Positioning (Regulations)	
CRD	ORO.FTL.220 Positioning If operators assign crew members to positioning, the following shall apply: (a) Positioning after reporting but prior to operating shall be counted as FDP but shall not count as a sector. (b) All time spent on positioning shall count as duty time.
EU OPS Subpart Q	N/A to EMS (ref. OPS 1.1105 - 5)

Positioning (Aeroplanes)	
UK	Positioning duties count as FDP prior to a flight but only as duty 'post flight'. Total length of duty day is used for calculating subsequent rest period. CAP371,pg7-ref11: Positioning does not count as a sector when calculating FDP. However, if after positioning journey, CM spends less than minimum rest period at suitable accommodation provided by operator and then carries out an FDP, positioning must be counted as a sector if split duty is claimed when calculating allowable FDP. If it is not, then split duty FDP can't be used.
Switzerland	Before flight it counts as flight duty, after flight as duty only.
Spain	Article 3, Circular Operativa 16B; Position duties shall be counted as FDP when immediately prior to an FDP Article 5 Circular del Director General de Aviación Civil, 17/12/2010;

Positioning (Aeroplanes)	
	After 18 hours of duty (FDP+Post-FDP positioning) crew members will be able to choose if they want to proceed to positioning or take minimum rest
Germany	Subpart Q: OPS 1.1105 point 5 is valid
France	Applicable to Subpart Q ref. OPS1.1105-5 Positioning
Norway	OPS 1.1105 is valid.
Poland	Subpart Q: OPS 1.1105 point 5 is valid
Czech Republic	Subpart Q-OPS 1.1105 - 5

Positioning (Helicopters)	
UK	Same as Aeroplane table above.
Switzerland	No provisions stated.
Spain	Circular Operativa 16B ref. article 3: Position duties shall be counted as FDP when immediately prior to an FDP.
Germany	Time spent on positioning is counted as duty. Positioning at the end of the rest period, but prior to the service shall be included as part of the flight duty time but will not count as a sector.
France	No provisions stated.
Norway	N/A - no provisions
Poland	No provisions stated.
Czech Republic	Decree art.22(1)(b): positioning is part of duty period.

8. Travelling:

Travelling (Regulations)	
CRD	ORO.FTL.205 Home base An operator shall assign a home base for each crew member.
EU OPS Subpart Q	No provisions stated about times, but does have following: OPS 1.1090 3.1. An operator shall nominate a home base for each crew member.

Travelling (Aeroplanes)	
UK	Travelling limit is 90mins to home base as a maximum standard & where travelling is required to another base then all the time >90mins is classed as positioning.
Switzerland	Counts as duty period.
Spain	Article 7 Circular del Director General de Aviación Civil, 17/12/2010; When travelling time out of base goes over one hour, the time exceeding this hour shall be taking into account for the subsequent rest period
Germany	No provisions stated.
France	No provisions stated.
Norway	N/A
Poland	No provisions established for this.

Travelling (Aeroplanes)	
Czech Republic	No provisions stated.

Travelling (Helicopters)	
UK	Same as Aeroplane table above.
Switzerland	If travel time exceeds 3hrs from home to mission then the time is counted as flight duty time.
Spain	Circular Operativa 16B ref. art 6.1: when travelling time out of base is >1hour, the time exceeding this 1hour is taken into account for subsequent rest period.
Germany	No provisions stated.
France	No provisions stated.
Norway	N/A
Poland	No provisions established for this.
Czech Republic	N/A

9. Split Duty:

Split Duty (Regulations)	
CRD	ORO.FTL.225 Split duty (a) Flight time specification schemes shall specify the following elements for split duty in accordance with the Certification Specification applicable to the type of operation: (1) the minimum duration of a break on the ground; (2) by derogation from ORO.FTL.210 (b), the possibility to increase the FDP taking into account the duration of the break on the ground, and facilities provided to the crew member to rest and other relevant factors. (b) The break on the ground shall count in full as FDP. (c) Split duty shall not follow a reduced rest.
EU OPS Subpart Q	N/A to EMS (ref. OPS 1.1105 - 6)

Split Duty (Aeroplanes)							
UK	Air ambulance supplement see note Annex B, pg16-1j: use of split duty to extend the FDP is not permitted as EMS extension capability already covered.						
Switzerland	In accordance with Swiss national provision for split duty. This states the following: A split duty must be defined and announced to the crew before the beginning of the FDP. <table border="0"> <tr> <td>Consecutive hours break</td> <td>Increase in FDP</td> </tr> <tr> <td>0-3 hours</td> <td>NIL</td> </tr> <tr> <td>3-7 hours</td> <td>½ length of break</td> </tr> </table>	Consecutive hours break	Increase in FDP	0-3 hours	NIL	3-7 hours	½ length of break
Consecutive hours break	Increase in FDP						
0-3 hours	NIL						
3-7 hours	½ length of break						

Split Duty (Aeroplanes)	
	<p>7-10 hours 2/3 length of break or full length if 7 hours of the break fall between 2000-0800 local time Parts of the FDP before and after the break may not be longer than 10 hours. The total length of the increased FDP must not be more than 20 hours including the break. Only one break may be used for applying split duty rules. Split duty rules may not be combined with augmented flight crew rules. Suitable accommodation must be provided if planned break is 6 hours or more or when the break is covering 3 hours or more of the period 2200-0600. Otherwise adequate facilities must be provided. In addition there are time difference constraints and split duty shall not be before or after a reduced rest period.</p>
Spain	<p>Article 5, Circular Operativa 16B; Max FDP increase of 4 hours or 50% of the time in the rest facility, whichever is most restricted, is allowed.</p>
Germany	<p>§11 Intermittent flight duty time If the flight time in OPS 1.1105 or § 10 schedule is interrupted by a pause of at least three hours and a secluded room with sleeping accommodation is available for the member of the crew during a break in the immediate vicinity of the airfield the related service period could be extended up to 18 hours.</p>
France	<p>Same as for CAT operations (no specificity for EMS operations). The French national rule is similar to the rule soon to be implemented in the framework of EASA rulemaking :</p> <ul style="list-style-type: none"> a. Minimum consecutive number of hours for the break : $3h \leq \text{break} \leq 10h$ b. Maximum Flight Duty Period (FDP) based on the length of the break : $FDP < FDP_{max} + 0.5$ (break-30min) c. Suitable accommodation for the break: <ul style="list-style-type: none"> - Break <6h : comfortable and quiet place with no public access +...(minimum conditions to be included OPS manual) - Break $\geq 6h$: room d. Take account of non acclimitisation: crew must have spent at least 48h in the time zone where the split duty begins, if a preceding duty was more than 3 time zones away from home base
Norway	<p>The following is valid for all operators that are using Subpart Q. Provisions for split duty are 1) break on ground counts 50% towards max FDP provided a rest facility with bed is available 2) if break is planned to be >4hrs then time is = 0 towards max FDP.</p>
Poland	No provisions established.
Czech Republic	No provisions stated.

Split Duty (Helicopters)

Split Duty (Helicopters)	
UK	Air ambulance supplement see note Annex D, pg17-1j: use of split duty to extend the FDP is not permitted as extension capability already covered.
Switzerland	No provisions stated.
Spain	Circular Operativa 16B ref. art 5: Maximum increase in FDP of 4hours or 50% of the time in the rest facility, whichever is most restricted, is allowed.
Germany	FDP may be extended up to 18 hours providing consecutive rest period (break) is at least 3 hours.
France	No provisions stated.
Norway	No provisions stated.
Poland	No provisions stated.
Czech Republic	No provisions stated.

10. Pilot Discretion:

Pilot Discretion (Regulations)	
CRD	<p>ORO.FTL.210 Flight duty period (FDP)</p> <p>(a) The operator shall:</p> <p>(2) establish procedures specifying how the commander shall — in case of special circumstances which could lead to severe fatigue, and after consultation with the crew members affected — reduce the actual FDP and/or increase the rest period in order to eliminate any detrimental effect on flight safety; and</p> <p>(3) require the commander to submit a report whenever an FDP is increased beyond the maximum at his/her discretion, or when a rest period is reduced below the minimum, in actual operation. Where the increase of an FDP or the reduction of a rest period exceeds 1 hour, the operator shall send a copy of the report, together with its comments, to the competent authority, no later than 28 days after the event.</p> <p>(e) Unforeseen circumstances in flight operations — commander's discretion</p> <p>(1) The conditions to modify the limits on flight duty, duty and rest periods by the commander in the case of unforeseen circumstances in flight operations which start at the reporting time shall comply with the following:</p> <p>(i) the maximum basic daily FDP which results after applying (b) and (c) and ORO.FTL.225 may not be increased by more than 2 hours unless the flight crew has been augmented, in which case the maximum flight duty period may be increased by not more than 3 hours;</p> <p>(ii) if on the final sector within an FDP unforeseen circumstances occur after takeoff and result in the permitted increase being exceeded, the flight may continue to the planned destination or alternate;</p> <p>(iii) the rest period following an FDP may be reduced but never below 10 hours.</p> <p>(2) The commander shall, in case of unforeseen circumstances which could lead to severe fatigue, reduce the actual flight duty period and/or increase the rest period in order to eliminate any detrimental effect on flight safety.</p> <p>(3) The commander shall consult all crew members on their alertness levels before deciding these modifications.</p> <p>(4) The operator shall require the commander to submit a report to the operator when an FDP is increased or a rest period is reduced by his/her discretion.</p> <p>(5) Where the increase of an FDP or reduction of a rest period exceeds 1 hour, a copy of the report, to which the operator shall add its comments, shall be sent to the competent authority not later than 28 days after the event.</p> <p>(6) The operator shall implement a non-punitive process for the use of the discretion described under this provision and shall describe it in the Operations Manual.</p>

Pilot Discretion (Regulations)	
EU OPS Subpart Q	See OPS 1.1120

Pilot Discretion (Aeroplanes)	
UK	<p>Single Pilot: FDP extension >4hrs permitted providing additional relief Pilot used until organ/patient is disembarked.</p> <p>Two-Pilot: Pilot may use discretion to extend FDP >4hrs to offload/deliver patient/organ to destination.</p>
Switzerland	In case of unforeseen circumstances, the flight may be continued to destination or alternate. No other PIC discretion.
Spain	<p>Subpart Q-OPS 1,1120 + Article 11, Circular del Director General de aviación Civil, 17/12/2010;</p> <p>Pilot-in-Command Discretion and FDP extensions by split duty and in flight rest cannot be combined.</p>
Germany	As per Subpart Q-OPS 1.1120.
France	The maximum extension under Captain's discretion is 2 hours, whatever the circumstances.
Norway	N/A - no provisions
Poland	As in Subpart Q-OPS 1.1120
Czech Republic	As in Subpart Q-OPS 1.1120

Pilot Discretion (Helicopters)	
UK	Same as Aeroplane table.
Switzerland	<p>HEMS Addendum ref. 1.7 Exceedances of Flight & Duty Time Limitations:</p> <p>At Pilot's discretion the following may apply:</p> <ol style="list-style-type: none"> 1) FDP may be extended to max of 15hrs (excl. 30mins of post flight duties at end of FDP) & 2) if on final sector within FDP, additional unforeseen circumstances occur after take-off, resulting in permitting hours being exceeded then flight may continue to planned destination or alternate. 3) if life is in danger then Pilot may extend Duty Time as appropriate after consultation with crew members. Also, if exceedance > 1hour then copy of discretion report must be sent to NAA.
Spain	<p>Circular Operativa 16B ref art. 7.1: FDP increase >2hours at Pilot discretion will only allowed under very special circumstances. When FDP is increased at Pilot discretion, due to special circumstances, a report must be sent to CAA no later than 5days after return to home base.</p> <p>Circular Operativa 16B ref art.8.1: Pilot-in Command Discretion & split duty cannot be combined.</p>
Germany	If during the last flight sector within the flight duty time unforeseen circumstances occur, which lead to a violation of the permitted extension, the flight may continue to the destination aerodrome or to an alternate aerodrome. The commander must record the reasons for the decision in writing. If there is an FDP extension or a shortening of the rest period by

Pilot Discretion (Helicopters)	
	<p>more than an hour, this must be reported to the regulatory authority within 30 days, stating the reasons in writing. Important reasons for extending the flight duty period or for shortening the rest period can be in particular:</p> <ol style="list-style-type: none"> 1. Impracticability of a flight due to the required flight duty and rest periods and the lack of suitable airfields for stopovers 2. adverse impact on the overall burden of crew members for compliance with the required flight duty and rest periods, 3. disproportionately high overhead of some flights at Flight Service, and compliance with prescribed rest periods. <p>Extensions of the flight duty time or shortening the rest periods referred to shall only be permitted if overall safety is balanced.</p>
France	No provisions stated.
Norway	N/A - No Provisions
Poland	<p>Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 38 Flight time 8 h within subsequent 24 hours may be exceeded upon of the approval of the aircraft commander when carrying out tasks by 2 hours. §20 1. Time of carrying out aviation activities, including flight time, may be exceeded over subsequent 24 hours upon approval of the aircraft commander, in the event that:</p> <ol style="list-style-type: none"> 1) It is necessary to carry out the flight for search or rescue purposes; 2) The flight is delayed for justified reasons, in particular due to: <ol style="list-style-type: none"> a) Unfavourable weather conditions, b) Waiting for passengers, c) Removing defects, d) Extended taxing <p>- However no more than by 2 hours, notwithstanding §2.</p> <ol style="list-style-type: none"> 2. Time of carrying out aviation activities in the subsequent 24 hours may be exceeded by the 3 hours, if the flight is carried out by a bigger crew. 3. The commander shall submit a written report to the employer about each exceeded time to carrying out aviation activities or reduced rest time. 4. If the time of carrying out aviation activities is exceeded or rest time is reduced by 1 hour or longer, the employer shall submit a copy of the report referred to in §3, together with an explanation of the circumstances in which the time of carrying out aviation was exceeded or rest time reduced, to the President of the Civil Aviation Office, within 14 days from the date of receiving the report
Czech Republic	N/A.

11. Airport Standby & Standby Elsewhere:

Airport Standby & Standby Elsewhere (Regulations)		
	Airport Standby Time	Standby Elsewhere
CRD	<p>ORO.FTL.230 Standby If operators assign crew members to standby, the following shall apply in accordance with the Certification Specification applicable to the type of operation:</p> <p>(a) Standby shall be rostered and the start and end time of standby shall be defined and notified in advance to the affected crew members to provide them with the opportunity to plan adequate rest.</p> <p>(b) Flight time specification schemes shall specify the following elements: (1) the maximum duration of any standby; (2) the impact of standby on the maximum FDP that may be assigned resulting from standby, taking into account facilities provided to the crew member to rest, and other relevant factors such as the need for immediate readiness of the crew member, the interference of standby with sleep and/or sufficient notification to protect a sleep opportunity between the call for duty and the assigned FDP; (3) the basic minimum rest period following standby which does not lead to assignment on an FDP; (4) how time spent on standby shall be counted for the purpose of cumulative duty hours.</p>	
EU OPS Subpart Q	See OPS 1.1125 ref. 1 (Airport Standby)	See OPS 1.1125 ref. 2 (Other forms of standby)

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
UK	<p>Airport standby counts in full as FDP from the start of the standby. Ref.CAP371, pg8,12.4: Standby duty=12hrs max. For Standby followed by an FDP i.e. CM is called out from standby to conduct an FDP - see 'Cases A & B' for calculating total FDP. Rest requirements (CAP371-12.5): When standby period finishes but call-out did not happen then at least 12hrs rest must follow prior to next duty period. Also, following end of contactable period(s) minimum 10hrs must elapse prior to next duty period.</p>	<p>CAP371 ref:12.1: As for 'airport standby' except - when standby is undertaken at home or suitable accommodation provided by operator, during 2200 & 0800hrs local time & CM is given 2hrs or less notice of report time, then allowable FDP starts at the report time for the designated reporting place.</p>
Switzerland	N/A for the single EMS service in	Standby at Hotel or home does not

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
	Switzerland.	count as duty.
Spain	<p>Subpart Q-OPS 1.1125 + Artículo 9, Circular del Director General de aviación Civil, 17/12/2010; When a FDP is immediately followed by a standby and during this standby a new flight duty begins, the previous FDP as well as the standby will be part of the last FDP</p> <p>However, when a rest period is followed by standby and during this standby a new FDP begins, the FDP counts from the reporting time.</p> <p>Article 2, Real Decreto 1952/2009; Standby shall be provided in a suitable accommodation ("suitable accommodation" is defined in the article 3 Real Decreto 1952/2009)</p> <p>Article 11.3 Real Decreto 1952/2009; Airport standby period is limited to 12 hours</p> <p>Article 11.8 Real Decreto 1952/2009; When standby period goes over 8 hours and is not followed of flight duty a minimum rest period shall be provided according to OPS 1.1110</p>	<p>Hotel Standby; Subpart Q-OPS 1.1125+Article 1a), Real Decreto 1952/2009; Hotel standby; is defined as the standby performed in the hotel designated by the operator, providing a suitable accommodation to the crew for adequate resting</p> <p>Article 9, Circular del Director General de aviación Civil, 17/12/2010; When a FDP is immediately followed by a standby and during this standby a new flight duty begins, the previous FDP as well as the standby will be part of the last FDP</p> <p>Article 11.3, Real Decreto 1952/2009; Hotel standby period is limited to 12 hours</p> <p>Article 11.4, Real Decreto 1952/2009; % of Hotel standby vs FDP (and DP); 0% < 6 hrs, 0% FDP > 6 h, 100% DP > 6 h</p> <p>Article 11.5, Real Decreto 1952/2009; The rest period following a hotel standby with FDP shall be increased by the time elapsed between the sixth standby hour and the beginning of the FDP</p> <p>Article 11.8 Real Decreto 1952/2009; When standby period goes over 8 hours and is not followed by flight duty a minimum rest period shall be provided according to OPS 1.1110</p> <p>Home Standby; OPS 1.1125+ Article 1b), Real Decreto 1952/2009; Home standby; standby other than airport and hotel standby</p>

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
		<p>Article 9, Circular del Director General de aviación Civil, 17/12/2010; When a FDP is immediately followed by a standby and during this standby a new flight duty begins, the previous FDP as well as the standby will be part of the last FDP</p> <p>Article 11.3, Real Decreto 1952/2009; Home standby period is limited to 24 hours</p> <p>Article 11.6, Real Decreto 1952/2009; % of Home standby vs FDP (and DP); 0% < 12 hours, 0% FDP > 12 h, 50% DP > 12 h</p> <p>Article 11.7, Real Decreto 1952/2009; When standby begins at home and then changes to hotel or airport, or vice-versa, 50% of the home standby time will contribute as hotel or airport standby, depending on the place where the previous or subsequent standby takes place.</p> <p>Article 11.8 Real Decreto 1952/2009; When standby period goes over 8 hours and is not followed by flight duty a minimum rest period shall be provided according to OPS 1.1110</p>
Germany	<p>As per Subpart Q-OPS 1.1125. §15 Standby (OPS 1.1125) 1) Standby time shall be counted as flight duty time if flight duty time not separated by a rest period in accordance with OPS 1.1110 and either 1. the crew member during the standby time has no secluded space with</p>	<p>(3) Standby time following a rest period in which the crew member is in their own home or an appropriate accommodation at a particular place where he may have the opportunity to sleep shall be counted as rest time. The same applies to a corresponding standby time before a rest period.</p>

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
	<p>sleeping accommodation available, 2. or the crew member during the standby time has a secluded room with sleeping accommodation available, but the standby time is less than two hours, unless the standby time is spent following a rest period.</p> <p>(2) If a secluded room with sleeping accommodation is available to the crew member, the Standby time will be counted as a break.</p>	
France	<p>Same as for CAT operations (no specificity for EMS operations) : At airport (or at a place required by the operator):</p> <ul style="list-style-type: none"> - Standby is considered as duty - Reduction of the subsequent FDP corresponding to the standby period spent beyond 6 hours - Limit on Standby duration : 12h - Minimum rest after standby with no FDP : 11h 	<p>Same as for CAT operations (no specificity for EMS operations) :</p> <ul style="list-style-type: none"> - No impact on Duty and FDP - Limit on standby duration : 24h renewable
Norway	<p>Subpart Q - OPS 1.1125 applies. In addition: 1) if standby is immediately followed by a FDP then 100% of previous standby time counts towards max daily FDP & 2) if standby period is not followed by duty period then minimum rest in accordance with OPS 1.110 applies.</p>	<p>Subpart Q applies & shall not >14hrs. (Valid for all operators that are using subpart Q) FOR 2008- 02-21 § 11. Norway.</p> <ol style="list-style-type: none"> 1) All activities shall be planned ahead and/or the crew shall be informed beforehand. 2) The time of start and end of the standby period shall be defined and the crew informed beforehand. 3) The standby time must not exceed 14 hours. 4) The flight crew shall have access to rest in a bed during the standby period. 5) Not counting the exceptions below, the standby time outside the airport shall count as 50% towards cumulative duty hours (OPS 1.1100 1.1) and daily FDP. 6) If the standby period is preceded by

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
		<p>a rest period, the first 4 hours of the standby period shall not count towards cumulative duty hours (OPS 1.1100 1.1) and daily FDP. If called for flight duty, item 8) below is still valid.</p> <p>7) If there is no call for flight duty between 22.00 and 06.00, the time in this period shall not count towards cumulative duty hours (OPS 1.1100 1.1) and daily FDP.</p> <p>8) By the time being called for flight duty, 50% of the time from the call until start of the flight duty will count towards cumulative duty hours (OPS 1.1100 1.1) and daily FDP.</p> <p>9) If being called in the time period 06.00-22.00 with early enough warning that the time between the call and reporting time for flight duty is at least 5 hours, the time between the call and reporting shall not count towards cumulative duty hours (OPS 1.1100 1.1) and daily FDP.</p> <p>10) Standby duty elsewhere for Emergency Medical Services by aeroplane shall count at least 20% towards cumulative duty hours (OPS 1.1100 1.1)</p>
Poland	<p>Subpart Q-OPS 1.1125 - 1.2. Airport standby will count in full for the purposes of cumulative duty hours.</p> <p>1.4. Where the airport standby does not lead to assignment on a flight duty, it shall be followed at least by a rest period as regulated by the Authority.</p> <p>1.5. While on airport standby the operator will provide to the crew member a quiet and comfortable place not open to the public.</p>	<p>Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 22 - 1. If duty is carried out outside the mother port, when it exceeds 6 hours or when more than 4 hours fall between 22:00 – 06:00 local time, the employer shall provide respective accommodation conditions.</p> <p>2. If duty is carried out at the airport, the employer shall provide respective conditions for carrying out duty.</p> <p>3. Time of telephone duty shall be included in working time as 50 % of the duty time, excluding the first 4 hours.</p> <p>4. If the flight is delayed, the time</p>

Airport Standby & Standby Elsewhere (Aeroplanes)		
	Airport Standby Time	Standby Elsewhere
		between the planned take-off hour and the new take-off hour shall be included in the time of carrying out duty.
Czech Republic	As in Sub Part Q. No extra provisions.	

Airport Standby & Standby Elsewhere (Helicopters)		
	Airport Standby Time	Standby Elsewhere
UK	Same as Aeroplane table	
Switzerland	HEMS Addendum ref. 1.3.4 & 1.1.13: Max standby at airport=12hrs. A 20mins notification time is given by operator during which CM is required to be at airport for assignment. Any time between two assignments exceeding 1 hour is counted as a break and not counted as duty.	HEMS Addendum ref.1.3.3: For standby at accommodation or at home: a) does not count as duty b) no rest time is required after standby at home or accommodation c) notification time in this case is 60mins d) may not be planned into a minimum rest time following a flight duty period or following airport standby.
Spain	Circular Operativa 16B ref. art. 5 & 3: Standby period is limited to 24 hours. When FDP is immediately followed by standby & during this standby a new flight begins, then the previous FDP +Standby will be counted part of the last FDP. However, when a rest period is followed by standby and during this standby a new FDP begins, the FDP counts from the reporting time.	Circular Operativa 16B ref. art. 5 & 3: Standby 'other than at airport' shall be provided in a suitable accommodation. Standby period is limited to 24 hours. When FDP is immediately followed by standby & during this standby a new flight begins, then the previous FDP +Standby will be counted part of the last FDP.
Germany	§14 Standby Time (1) Standby time shall be counted as flight duty time if not separated from flight duty time by a rest period and either 1. the crew member during the standby time has no secluded space with sleeping accommodation available, or 2. the crew member during the standby time has a secluded room with sleeping accommodation available, but the	(3) Standby time following a rest period in which the crew member is in their own home or an appropriate accommodation at a particular place where he may have the opportunity to sleep shall be counted as rest time. The same applies to a corresponding standby time before a rest period.

Airport Standby & Standby Elsewhere (Helicopters)		
	Airport Standby Time	Standby Elsewhere
	standby time is less than two hours, unless the standby time is spent following a rest period. (2) If a secluded room with sleeping accommodation is available to the crew member, the Standby time will be counted as a break.	
France	On site standby is a defined period of time spent on the work site, including periods of inactivity, during which a technical crew member (including flight crew) may receive an assignment for a flight. The daily limit for onsite standby is 12 hours and the 3 cycles have additional limits per 24 hours. Duty periods include on site standby (in full), flight periods, pre and post flight duties, training, recurrent training and medical examinations.	No provisions stated.
Norway	Shall count as at least 50% per duty hour.	Shall count as at least 50% per duty hour.
Poland	No provisions stated.	No provisions stated.
Czech Republic	Decree ref. art25 1b: standby counts as 50% of duty period.	N/A

12. Basic Minimum Rest:

Basic Minimum Rest (Regulations)	
CRD	<p>ORO.FTL.235 Rest periods</p> <p>(a) Minimum rest period at home base. The minimum rest period provided before undertaking an FDP starting at home base shall:</p> <p>(1) be at least as long as the preceding duty period, or 12 hours, whichever is greater; or</p> <p>(2) comply with (b), if the operator provides a suitable accommodation to the crew member.</p> <p>(b) Minimum rest period away from home base. The minimum rest period provided before undertaking an FDP starting away from home base shall be at least as long as the preceding duty</p>

Basic Minimum Rest (Regulations)	
	<p>period, or 10 hours, whichever is greater. This period shall include an 8-hour sleep opportunity in addition to the time for travelling and physiological needs.</p> <p>(e) Flight time specification schemes shall specify additional rest periods to compensate for: (2) additional cumulative fatigue due to disruptive schedules; and (3) a change of home base.</p>
EU OPS Subpart Q	See OPS 1.1110

Basic Minimum Rest (Aeroplanes)	
UK	<p>CAP371, pg11-ref.17: Minimum rest period before undertaking a FDP shall be: a) at least as long as preceding FDP or b) 12 hours, whichever is greater.</p> <p>Other rest period requirements apply for when away from base and when at home base (CAP371 ref.17.2.1-2). If preceding duty period (including positioning time) is >18hrs then rest period must include a local night. After being called out from standby duty, minimum rest period is determined by length of standby duty + time spent on positioning & any FDP completed.</p>
Switzerland	As in Sub Part Q: Basic rest 12 hours at home base. 10 hours away from home base.
Spain	<p>OPS 1.1110 and article 7, Circular del Director General de aviación Civil, 17/12/2010;</p> <ul style="list-style-type: none"> — At home: max (12 hours, length of the preceding duty period) — Away from home base (flight crew): max (10.5 hours, length of the preceding duty period) with 8 hour sleep opportunity — Away from home base (passenger cabin crew): max (10 hours, length of the preceding duty period) with 8 hour sleep opportunity — Operator must take due account of travelling and other physiological needs.
Germany	As per Sub Part Q-OPS 1.1110: basic minimum rest period of 10 hours must not be reduced.
France	<p>If FDP is within limits set out in Subpart Q, then rest provisions in Subpart Q apply.</p> <p>If FDP > 14 hours, then consecutive rest is 24h including a local night except in case of reduced rest.</p>
Norway	N/A - no provisions
Poland	As per Sub Part Q-OPS 1.1110 paras 1.1 and 1.2.
Czech Republic	As Sub Part Q.

Basic Minimum Rest (Helicopters)	
UK	Same as Aeroplane table.
Switzerland	12 hours is the minimum before any Pikett Period regardless of its length (2 days to 5 days). Minimum rest requirements in between duties not explicitly stated – determined by duty hours.
Spain	Circular Operativa 16B ref. art.6.1: Basic (minimum) rest for flight crew is maximum of (10.5 hours or length of the preceding duty period whichever is greater) with at least 8 hours in accommodation.
Germany	Minimum daily rest period is 10 hours.
France	Minimum daily rest period is 10 hours. If duty period (including flight) encroaches by 2hours or more the 22.00 – 6.00 window then crew will have 10 consecutive hours rest.
Norway	N/A
Poland	Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 40 - Minimum rest time is 8 hours and 30 minutes Duty period which include rest time < 10 hours within subsequent 24 hours must not exceed 4 days.
Czech Republic	(Decree art26): basic rest (minimum) 11hours (rest in bed >8hrs). Within the 11 hour minimum rest there should be possibility of at least 8 hours in a bed).

13. Basic (Reduced) Rest:

Basic (Reduced) Rest (Regulations)	
CRD	ORO.FTL.235 Rest periods (c) Reduced rest By derogation from (a) and (b), flight time specification schemes may reduce the minimum rest periods taking into account the following elements in accordance with the Certification Specification applicable to the type of operation: (1) the minimum reduced rest period; (2) the increase of the subsequent rest period; and (3) the reduction of the FDP following the reduced rest.
EU OPS Subpart Q	See OPS 1.1110-1.4.1-2: Reduced rest provisions subject to Article 8, operational experience, scientific knowledge etc.

Basic (Reduced) Rest (Aeroplanes)	
UK	CAP371 ref.17.21-2: No reduced rest provisions but Pilot may reduce rest to set minimums i.e. 12hrs at home & 10hrs for away from home.
Switzerland	Rest may not be reduced below basic rest of 10 hours or as long as

Basic (Reduced) Rest (Aeroplanes)	
	previous duty whichever longer.
Spain	<p>OPS 1.1110 and Article 7, Real Decreto 1952/2009; Rest reduction limited to 3 hours Minimum duration of reduced rest = 10 hours out of home base or 12 hours in base Minimum of 9 hours at the suitable accommodation Subsequent rest shall be augmented by the shortfall FDP following reduced rest shall be reduced by the shortfall Number of reduced rest occasions is limited to 3 times scheduled in 90 days Reduction not allowed when: pre or post-FDP is extended by in flight rest and/or time zone crossing at the previous or next FDP</p>
Germany	<p>§13 Shortened rest periods in special cases (OPS 1.1110 Nr.1.4.1 and 2.1) The supervisory authority may, upon written request grant deviations from the requirements of § 12 and in accordance with OPS 1.1110 permit No. 1.4.1, if there are important reasons for shortening the rest period. The minimum rest periods may be shortened by no more than two hours. A minimum rest period of ten hours must not be reduced.</p>
France	<p>There are French national provisions for CAT operations. All these provisions can also be used under EMS provisions. Yet, there are some differences:</p> <ul style="list-style-type: none"> - no limitation in sector duration on the one hand (sector duration may be greater than 3h contrary to CAT operations) - no possibility to conduct back to back operations on the other hand: if the reduced rest was taken more than two time zones away from home base, the consecutive FDP shall end at home base. In such case, home base shall never be considered as a destination for the purpose of rest calculation. <p>Besides, if the FDP before or the FDP after the reduced rest lasts more than 14h, then :</p> <ol style="list-style-type: none"> a. reduced rest is 10h or more (even in the case of use of captain's discretion) b. The subsequent FDP shall be reduced by the time difference between the basic minimum rest and the reduced rest (called shortfall) number of sectors of the subsequent FDP is 4 or less (instead of 3 or less) c. The subsequent rest period shall be extended by the time difference between the basic minimum rest and the reduced rest. It shall include one local night and not be less than 24h. <p>An alternative consists in extending the weekly rest period (OPS 1.1110 §2.1) of all shortfalls generated during the week.</p> <ol style="list-style-type: none"> d. The reduced rest shall normally include 2h at least of the WOCL. Yet, if needed by circumstances, this rule may not apply, in which case every "non-compliance" shall be reported to the Authority.
Norway	N/A

Basic (Reduced) Rest (Aeroplanes)	
Poland	No provisions stated.
Czech Republic	No provisions stated.

Basic (Reduced) Rest (Helicopters)	
UK	CAP371 ref.17.21-2: No reduced rest provisions but Pilot may reduce rest to set minimums i.e. 12hrs at home & 10hrs for away from home.
Switzerland	HEMS Addendum ref.1.6.6 - minimum of at least 6 hours if flight between 22.00 and 06.00 No provisions for reduced rest stated.
Spain	Circular Operativa 16B ref. art.6.3: Provisions are a) rest reduction limited to 3hours b) minimum duration of reduced rest =10hours c) FDP following reduced rest shall be reduced by the shortfall.
Germany	Duty period which include rest time < 10 hours within subsequent 24 hours must not exceed 4 days. Minimum rest may be reduced to 8 hours 30 minutes within 24 hours. This is permitted up to 3 times within 4 consecutive days.
France	Rest period may be reduced to 8 hours. Also if an operation encroaches the planned rest period, the rest period may be reduced by 2hours but not less than 8hours. Subsequent rest period is augmented by the shortfall (=difference between planned and actual rest).
Norway	N/A
Poland	No provisions stated.
Czech Republic	Basic rest of 11 hours may be reduced to 9 hours provided following conditions are met: -HEMS operations are during daytime only -There is suitable accommodation for crew during basic rest period at home base.

14. Extended & Recovery Rest:

Extended & Recovery Rest (Regulations)	
CRD	ORO.FTL.235 Rest periods. (d) Recurrent extended recovery rest periods Flight time specification schemes shall specify recurrent extended recovery rest periods to compensate for cumulative fatigue. The minimum recurrent extended recovery rest period shall be 36 hours, including 2 local nights, such that there shall never be more than 168 hours between the end of one recurrent extended recovery rest period and the start of the next. The recurrent extended recovery rest period shall be increased to 2 days twice every 28 days.

Extended & Recovery Rest (Regulations)	
EU OPS Subpart Q	See OPS 1.1110-2: Periodic extension of weekly rest periods (36hrs period including 2 local nights so \leq than 168hrs between end of one weekly rest period & start of next.

Extended & Recovery Rest (Aeroplanes)	
UK	Crew members shall: a) not be on duty more than 7 consecutive days between days off, but may be positioned to the usual operating base on the eighth day, provided they are then allocated at least 2 consecutive days off, and b) have 2 consecutive days off in any consecutive 14 days following the previous 2 consecutive days off, and c) have a minimum of 7 days off in any consecutive 4 weeks, and d) have an average of at least 8 days off in each consecutive 4 week period, averaged over 3 such periods. A single day off shall include 2 local nights, and shall be of at least 34 hours duration.
Switzerland	As in Sub Part Q.
Spain	As in Sub Part Q.
Germany	As in Sub Part Q.
France	As in Sub Part Q.
Norway	As in Sub Part Q.
Poland	As in Sub Part Q.
Czech Republic	As in Sub Part Q.

Extended & Recovery Rest (Helicopters)	
UK	Additional (recovery) rest requirements for helicopter aircrew are: - Not work more than 7 consecutive days - Have 2 consecutive days off following a period of 7 consecutive days duty - Have 2 consecutive days off in any consecutive 14 days and have at least 3 days off in any consecutive 14 days and - Have a minimum of 7 days off in any consecutive 4 weeks and - Have an average of at least 8 days off in each consecutive 4 week period averaged over 3 such periods.
Switzerland	Rest requirements stated are: -within 10 consecutive days, pilot shall receive at least one 48 hour rest period. - within each calendar month, pilot shall receive at least 8 local days free of duty and pikett. Within each calendar year, pilot shall receive at least 96 local days free of duty and pikett. Before and after each pikett period, a minimum of 12hours rest period must be ensured. Also for rest period between pikett periods the following limits apply:

Extended & Recovery Rest (Helicopters)	
	-for up to 3 pikett days, minimum of 1 (24hours) rest day -for up to 5 pikett days, minimum of 2 (48hours) rest days.
Spain	No provisions stated.
Germany	A rest period of 48hours is allowed after each period of service.
France	Cycle 1 : two consecutive rest days after 5 consecutive days of planned on site standbys Cycle 2 : 6 consecutive days after 12 consecutive days of onsite standby Cycle 3 : 7 consecutive days after 7 consecutive days of onsite standby
Norway	No provisions stated.
Poland	A rest period of 24hours minimum must be taken before each duty period. Also a duty period which includes rest time of less than 10hours within subsequent 24hours shall not exceed 4 days.
Czech Republic	(Decree art26/3): operator can extend basic rest period a) to 36hrs - including 2 local nights during 7 consecutive days b) to 60hrs including 3 local nights during 10 consecutive days c) or pursuant to this provision.

15. Time Zone Crossing:

Time Zone Crossing (Regulations)	
CRD	ORO.FTL.235 Rest periods (e) Flight time specification schemes shall specify additional rest periods to compensate for: (1) the effects of time zone differences and extensions of the FDP;
EU OPS Subpart Q	OPS 1.1110: 1.3 An operator will ensure that effects on crew members of time zone differences will be compensated by additional rest, as regulated by the Authority subject to the provisions of Article 8.

Time Zone Crossing (Aeroplanes)	
UK	The UK has air ambulance flights that cross time zones but these are not emergency flights (more medevac).
Switzerland	Rest times have to be increased beyond time zone crossing >3 hours.
Spain	SubpartQ-OPS 1.1110 + Article 6, Real Decree to 1952/2009; Rotation; FDPs starting and finishing at home base, or in a place where time difference is no more than one hour compared to the home base, and including at least one flight crossing 4 or more time zones . Additional rest will be achieved following the rotation and at home base or in a place with time difference no more than one hour compared to the base. Additional rest + basic minimum rest (due to previous duty) will include 2 local nights and will be as follows:

Time Zone Crossing (Aeroplanes)	
	<p>a) When time elapsed between departure and arrival to the home base is less or equal to 60 hours = max (36, 4 times the time difference between the home base and the location with the greatest local time difference).</p> <p>b) When time elapsed between departure and arrival to the home base is greater than 60 hours = max (36, 6 times the time difference between the home base and the location with the greatest local time difference).</p> <p>c) With FDP extension by in flight rest, the rest defined in a) and b) will not be in any case less than 48 hours.</p> <p>Before a FDP crossing 4 or more times a minimum 14 hours rest shall be respected.</p> <p>Rest according to a), b) and c) could be reduced (respecting OPS 1.1110) when: prior FDP finishing at home base a rest including 3 local nights had been provided and subsequent flight duty less than 11 hours and its following rest includes 3 local nights as well.</p> <p>Period rest between Eastward-Westward and Westward-Eastward time zone transitions, or vice-versa, shall be at least 3 local nights. This rest could be reduced to 2 local nights if the rest following both rotations includes 4 local nights.</p> <p>Article 12, Circular del Director General de aviación Civil, 17/12/2010; In the computation of time differences, seasonal time corrections will not be taken into account.</p> <p>The number of rotations in 28 consecutive days or in one month is limited to 5 for each crew member being not applicable split duty.</p>
Germany	<p>§ 12 Taking into consideration resting periods between time zone differences</p> <p>If there exists between the place of commencement of the air service and the location of the termination of air service a time zone difference of four or more time zones, the minimum rest period is increased to 14 hours.</p>
France	<p>Same as for CAT operations (no specificity for EMS operations) :</p> <p>a. Rest / days off requirements at home base following time zone crossing duties :</p> <p>If one sector > 3000 NM or crew away more than 3 time zones, minimum rest is 36h including 2 local nights.</p> <p>b. Augmented minimum rest at destination :</p> <p>If FDP takes crew more than 3 time zones away from home base, rest = max[duty, 14h]</p>
Norway	No provisions stated.
Poland	No provisions stated.
Czech Republic	No provisions stated.

Time Zone Crossing (Helicopters)	
UK	Annex D on Helicopters within CAP 371 assumes "Operations are confined within an area where local time varies by not more than one hour"

Time Zone Crossing (Helicopters)	
Switzerland	No provisions stated.
Spain	Circular Operativa 16B ref. art.6.2 referenced.
Germany	No provisions stated.
France	No provisions stated.
Norway	No provisions stated.
Poland	No provisions stated.
Czech Republic	No provisions stated.

16. Nutrition:

Nutrition (Regulations)	
CRD	ORO.FTL.240 Nutrition (a) A meal and drink opportunity shall occur in order to avoid any detriment to a crew member's performance, especially when the FDP exceeds 6 hours. (b) An operator shall specify in its Operations Manual how the crew member's nutrition during FDP is ensured.
EU OPS Subpart Q	See OPS 1.1130: Meal/drink opportunity must occur especially when FDP >6hrs.

Nutrition (Aeroplanes)	
UK	Subpart Q requirements apply to EMS & Air Ambulance.
Switzerland	No provisions stated.
Spain	As in Sub Part Q-OPS 1.1130
Germany	Subpart Q ref. OPS 1.1130 applies .
France	Subpart Q ref. OPS 1.1130 applies.
Norway	N/A stated.
Poland	As in Sub Part Q-OPS 1.1130
Czech Republic	As in Sub Part Q-OPS 1.1130

Nutrition (Helicopters)	
UK	Subpart Q requirements apply to EMS & Air Ambulance.
Switzerland	No provisions stated.
Spain	N/A stated.
Germany	No provisions stated.
France	No provisions stated.
Norway	N/A stated.
Poland	No provisions stated.
Czech Republic	N/A stated.

17. Records for Flight Duty & Rest Periods:

Records for Flight Duty & Rest Periods (Regulations)	
CRD	<p>ORO.FTL.245 Records of flight and duty times and rest periods</p> <p>(a) Operators shall maintain, for a period of 24 months:</p> <p>(1) Individual records for each crew member including:</p> <p>(i) flight times;</p> <p>(ii) start, duration and end of each duty period and FDP;</p> <p>(iii) rest periods and days free of all duties; and</p> <p>(iv) assigned home base.</p> <p>(2) Reports on extended flight duty periods and reduced rest periods.</p> <p>(b) Upon request, the operator shall provide copies of individual records of flight and duty times and rest periods to:</p> <p>(1) the crew member concerned; and</p> <p>(2) to another operator, in respect of a crew member who is or becomes a crew member of the operator concerned.</p> <p>(c) Records referred to in CAT.GEN.MPA.100 (b)(5) in relation to crew members who perform functions for more than one operator shall be kept for a period of 24 months.</p>
EU OPS Subpart Q	See OPS 1.1135: records to be kept for block times, start/end times of flight duty periods, rest periods & free days.

Records for Flight Duty & Rest Periods (Aeroplanes)	
UK	As per CAP371 ref. 25 requirements: 12 mths of flight and duty records & 6 mths of discretion reports maintained.
Switzerland	Have to be filed by individual crew member and by company.
Spain	As in Sub Part Q OPS 1.1135
Germany	Subpart Q ref. OPS 1.1135 applies.
France	Subpart Q ref. OPS 1.1135 applies.
Norway	N/A stated.
Poland	Subpart Q ref. OPS 1.1135 applies.
Czech Republic	As in Sub Part Q OPS 1.1135

Records for Flight Duty & Rest Periods (Helicopters)	
UK	Same as Aeroplane table.
Switzerland	Due to the "Flat rate system" of recording the flight duty time the numbers of missions, sectors/legs and flight time per mission are not automatically obvious to the NAA. These figures are available on request.
Spain	Circular Operativa 16B ref. art.8.4: provisions for operator to establish a recording system containing flight time, duty time and rest time.
Germany	Records are kept by the operator for at least 3 months.

Records for Flight Duty & Rest Periods (Helicopters)	
France	No provisions stated.
Norway	N/A stated.
Poland	Art.149 Labour Code - records of working time shall be held by the employer
Czech Republic	As in JAR-OPS 3, Subpart P.

18. Other Elements – including SMS/FRMS:

Other Elements – including SMS/FRMS (Regulations)	
CRD	<p>ORO.FTL.250 Fatigue management training</p> <p>(a) The operator shall provide initial and recurrent fatigue management training to crew members, crew rostering personnel and concerned management personnel.</p> <p>(b) This training shall follow a training programme established by the operator. The syllabus for the training shall cover the possible causes and effects of fatigue, and fatigue countermeasures.</p>
EU OPS Subpart Q	-

Other Elements – including SMS/FRMS (Aeroplanes & Helicopters)	
UK	None yet but SMS provisions will become a requirement with the introduction of the Basic Regulation for Air Operations - this year.
Switzerland	The operator has to run a SMS system and will start a new FRMS to mitigate risks.
Spain	Not stated.
Germany	Not stated.
France	<p>1. Operators conducting EMS operations may not apply provisions of §3 and 4 of OPS 1.1105 (difference in reporting time between cabin crew and flight crew members + operational robustness)</p> <p>2. As stated before, operators conducting EMS operations shall comply with CAT FTL rules. If they operate their aircraft with two pilots and under FRM, they may use specific provisions as described above.</p> <p>3. For single pilot operations :</p> <p>For IFR operations or operations at night, total block hours of each FDP shall be less than 6h</p> <p>Maximum block hours for each sector shall be :</p> <ul style="list-style-type: none"> - 4h or less if the aeroplane is equipped with a full autopilot - 2h in all other cases
Norway	BSL D2-4 §6, §7 and §10: The operators and the flight crew (or their organisations) should make agreements regarding duty and rest restrictions, and they shall produce a rosters for at least four weeks, released at least two weeks ahead.
Poland	Regulation of the Minister of Infrastructure, 2002 - Journal of Laws, § 42 duty time shall not exceed 15 hours 30 minutes per 24 hours, § 44 If due to special circumstances the pilot gets tired prematurely, which poses a threat to safety, the pilot shall be obliged to take a decision to finish duty.
Czech Republic	None stated.

Appendix 3 – States' Basic Maximum FDP Tables

Spain

Table A – Single Pilot, Passenger Operations

TRIPULACIONES TÉCNICAS CON UN SOLO PILOTO

Hora de Presentación	Número de aterrizajes			
	1 a 4	5	6	>= 7
0700 - 1159	1030	0945	0900	0830
1200 - 1359	1000	0915	0830	0830
1400 - 1559	0930	0845	0830	0830
1600 - 1759	0900	0830	0830	0830
1800 - 0359	0830	0830	0830	0830
0400 - 0459	0900	0830	0830	0830
0500 - 0559	0930	0845	0830	0830
0600 - 0659	1000	0915	0830	0830

Table B – Two or More Pilots, Passenger Operations

TRIPULACIÓN TÉCNICA MÍNIMA DE 2 O MAS (*)

Hora de Presentación	Número de aterrizajes							
	1a2 (**)	3	4	5	6	7	8	>= 9
0700 - 1159	1400	1315	1230	1145	1100	1015	0930	0900
1200 - 1359	1330	1245	1200	1115	1030	0945	0900	0900
1400 - 1559	1300	1215	1130	1045	1000	0915	0900	0900
1600 - 1759	1230	1145	1100	1015	0930	0900	0900	0900
1800 - 0359	1200	1115	1030	0945	0900	0900	0900	0900
0400 - 0459	1230	1145	1100	1015	0930	0900	0900	0900
0500 - 0559	1300	1215	1130	1045	1000	0915	0900	0900
0600 - 0659	1330	1245	1200	1115	1030	0945	0900	0900

Table C – Single Pilot, Cargo Operations

OPERACIONES CON UN SOLO PILOTO

Hora de Presentación	Número de aterrizajes			
	1 a 4	5	6	>= 7
0700 - 1159	1030	0945	0900	0830
1200 - 1359	1000	0915	0830	0830
1400 - 0559	0930	0845	0830	0830
0600 - 0659	1000	0915	0830	0830

Table D - Two or More Pilots, Cargo Operations

TRIPULACIÓN MÍNIMA DE 2 O MAS

Hora de Presentación	Número de aterrizajes						
	1 a 3	4	5	6	7	8	>= 9
0700 - 1159	1400	1315	1230	1145	1100	1015	0930
1200 - 1359	1330	1245	1200	1115	1030	0945	0900
1400 - 0559	1300	1215	1130	1045	1000	0915	0900
0600 - 0659	1330	1245	1200	1115	1030	0945	0900

UK

Table A - Two or More Flight Crew, Acclimatised

Local time of start	Sectors							
	1	2	3	4	5	6	7	8 or more
0600-0759	13	12¼	11½	10¾	10	9½	9	9
0800-1259	14	13¾	12½	11¾	11	10½	10	9½
1300-1759	13	12¼	11½	10¾	10	9½	9	9
1800-2159	12	11¼	10½	9¾	9	9	9	9
2200-0559	11	10¼	9½	9	9	9	9	9

Table B - Two or More Flight Crew, Not Acclimatised

Length of preceding rest (hours)	Sectors						
	1	2	3	4	5	6	7 or more
Up to 18 or over 30	13	12¼	11½	10¾	10	9¼	9
Between 18 and 30	11½	11	10½	9¾	9	9	9

Table C - Single Flight Crew

Local time of start	Sectors				
	Up to 4	5	6	7	8 or more
0600-0759	10	9¼	8½	8	8
0800-1259	11	10¼	9½	8¾	8
1300-1759	10	9¼	8½	8	8
1800-2159	9	8¼	8	8	8
2200-0559	8	8	8	8	8

Table D in UK CAP 371 shows maximum FDP hours in any single day.

MAXIMUM FDP TABLE - HELICOPTERS				
Local time of Start	SINGLE PILOT		TWO PILOTS	
	Max. Length of Flying Duty Period (Hours)	Maximum Flying Time (Hours)	Max. Length of Flying Duty Period (Hours)	Maximum Flying Time (Hours)
0600 - 0659	9	6	10	7
0700 - 0759	10	7	11	8
0800 - 1359	10	7	12	8
1400 - 2159	9	6	10	7
2200 - 0559	8	5	9	6

Appendix 4 – Example HEMS Shift Patterns

Certain States noted that operators adopted patterns of duty hours suited to HEMS operations. Switzerland and France provided the examples below. The FTL System in **Switzerland** is based on a flat rate recording regulation. Depending on the time of the “Airport Standby” period during a 24 hour-day a flat rate has to be recorded as “Duty Time”. Some example schedules are given below:

			Flat Rate Duty Time over the year
a)	Fix Airport Standby Time:	0800 h to 1800 h	9.5 hours
	Max. 15 duty/ standby days per month		
b)	Or changing duty times as follows:		
	January – March:	0800 h to 1730 h	
	April – June:	0800 h to 1830 h	
	July – August:	0800 h to 1930 h	9.5 hours
	September – October:	0800 h to 1830 h	
	November – December:	0800 h to 1630 h	
	Max. 5 duty/ standby days per period and max 15 duty/ standby days per month		
c)	Or changing duty times as follows:		
	Summer: 01.04. – 31.10.	0800 h to 2200 h	
	Winter: 01.11. – 31.3.	0800 h to 2000 h	13 hours
	Max. 2 duty/ standby days per period and max 11 duty/ standby days per month		

If the Airport Standby Time is extended to 14 hours the recording flat duty time over the year has to be increased to 13 hours of flight duty time.

The duty pattern in c) is typically used at bases in the non-mountainous parts of Switzerland. Extensions into the night beyond 2200 are relatively common in such bases. The shorter daily duty times in a) and b) are typical of the HEMS bases serving the mountainous parts of Switzerland.

In **France**, duty hours and on-site standby can be organised in three different cycles:

1. Weekly cycle: comprising 5 on-site standbys, by day only (no night standby) between periodic rests (periodic rest being : 24h+rest generated by previous on-site standby)).
2. 18 weeks cycle: comprising on site standbys, by day only (no night standby), limited to 12 consecutive days between periodic rests.
3. 12 weeks cycle : comprising on site standbys, by day or by night, limited to 7 consecutive on site standbys, between periodic rests.

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