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FLIGHT TIME (FTL) AND FLIGHT DUTY PERIOD (FDP) LIMITATIONS (THE AVOIDANCE OF FATIGUE IN AIRCREWS)

1 FOREWORD

This AIC is issued in the exercise of Director General of Civil Aviation powers by Section 24o of Civil Aviation Act 1969.

DCA Malaysia has previously adopted CAP 371 (UK CAA publication) for its Flight Time Limitation Scheme (FTL). Since AIC 5/95 was issued in 14 September 1995, the scheme was well accepted by operators in Malaysia. This scheme defines a basic framework for the duty hours of flight crew and cabin crew. The application of this scheme by operators to their particular set of circumstances remains the responsibility of that operator. Section B of this AIC deals with the scheme, and the format employed follows a pattern which is designed to lead sensibly from section to section. There are flexibility for operators from seeking changes to the maxima and minima specified, subject to presentation of a suitable case. It is accepted that all the provisions in Section B do not apply to every AOC holder, and that those engaged in air taxi/sole-use charter, air ambulance work, and pleasure flying require less complex schemes. Again, those preparing FTL schemes of this nature are invited to utilise the relevant applicable limitations in the preparation of their individual submission. Any proposed difference will be considered on merit. The regulations contained herein set a working pattern for flight crew and cabin crew to follow and are designed to prevent the onset of fatigue, and yet allow an operator to pursue legitimate business interests.

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3 SECTION A

Introduction

3.1 Requirements of the Civil Aviation Regulation 1996 (CAR 1996) and ICAO Annex

3.1.1 Part VIII of CAR 1996 – Fatigue of Crew, as amended, requires that the operator of an aircraft to which the CAR 1996 applies shall have a scheme for the regulation of flight times of crew and the scheme is approved by the Director General of DCA subject to such conditions as he thinks fit. Additionally, ICAO Annex 6 paragraph 4.2.10 requires that an operator shall formulate rules to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members.

The scheme must be approved by the Department Civil Aviation (DCA) and incorporated in the Company Operations Manual, or when an Operations Manual is not required by the regulations, included in a separate document.

The Operations Manual, or separate document, shall be readily available to every person employed by the operator as a member of an aircraft crew.

3.1.2 The requirements of the regulations apply to an aircraft registered in Malaysia which is either:

- a. engaged on a flight for the purpose of public transport or
- b. operated by an air transport undertaking;

provided that they shall not apply to a flight made for the purpose of instruction in flying, given by or on behalf of a flying club or a flying school, or a person who is not an air transport undertaking.

3.1.3 In essence, the CAR 1996 requires that a crew member shall not fly, and an operator shall not require him to fly, if either has reason to believe that he is suffering, or is likely to suffer while flying, from such fatigue as may endanger the safety of the aircraft or of its occupants.

3.1.4 A flight crew member is required to inform anyone who employs his services as a flight crew member of all flight times and flying duty periods undertaken, whether professionally or privately, except for flying in aircraft not exceeding 1,600 kg maximum weight and not flying for the purpose of public transport or aerial work.

Aerial work includes flying instruction for which the pilot is remunerated. It is also aerial work where valuable consideration is given specifically for flying instruction, even if the pilot receives no reward.

3.2 General Principles Applied to Control of Flight, Duty and Rest Time

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

3.2.2 Planned schedules must allow for flights to be completed within the maximum permitted flying duty period. The DCA, when assessing the planning of a schedule will take into account the time allowed for pre-flight duties, taxiing, the flight and turnaround times. However, it is recognised that on occasion a planned flight will experience unforeseen delays. Under these conditions, the aircraft commander may, within prescribed conditions, extend an FDP.

3.2.3 Other factors to be considered when planning duty periods include:

- a. the allocation of work patterns which avoid such undesirable practices as alternating day/night duties, the positioning of crew so that a serious disruption of established sleep/work patterns occur, or scheduling rest periods of between 18 and 30 hours especially after long flights crossing many time zones;
- b. planning days off and notifying crew well in advance;
- c. consultation between operators and crew to agree basic roster concepts which ensure adequate rest prior to flight but, within that constraint, takes account of the commercial requirements of the company.

Note: DCA will conduct periodic and spot checks on operators' records and aircraft commanders' reports to determine if the planning of flight schedules and duty is compatible with the limitations provided for in the operator's scheme.

3.3 Responsibilities of Operators and Crew Members

3.3.1 It is the responsibility of the operator to prepare duty rosters sufficiently in advance to provide the opportunity for crew to plan adequate pre-duty rest. Operators must establish minimum periods of notification of duty for operating crew, or where this is not practicable due to the nature of the operation, must establish in advance minimum periods of notification of days off, during which a crew member will not be required for any duties. Training for Rostering Staff must include guidance on the effects of disturbing Circadian Rhythms, and sleep deprivation. Away from base, the operator must provide for crew members both the opportunity and facilities for adequate pre-flight rest, in suitable accommodation. When an operator employs a crew member on an irregular basis, then that employer must ensure that the crew member satisfies the provisions of the company approved FTL scheme. Furthermore, operators shall satisfy themselves that crew members who undertake other employment, if allowed by the operator, still have the opportunity to enjoy adequate pre-flight rest.

3.3.2 Responsibility for preventing the onset of fatigue cannot rest on the operator alone. The formal responsibilities of crew members, under the Fatigue of Crew provisions of the CAR 1996, are described in sub-paragraphs 1.3 and 1.4 above; furthermore, individuals shall ensure that they are not in breach of the Company approved FTL scheme. It is emphasised that crew members working on a freelance basis must maintain an individual record of their flying and duty hours which must be presented to an operator before undertaking a duty period. All crew members shall make optimum use of the opportunities and facilities for rest provided, and plan and use their rest periods properly. Before considering additional employment crewmembers must recognise that the responsibility for being sufficiently rested before undertaking a flying duty remains with the individual. Crew members are also reminded that persons are not entitled to act as a member of the crew of an aircraft registered in Malaysia if the individuals know or suspect that their physical or mental condition renders them temporarily unfit so to act.

3.4 Standard Provisions Applicable to an FTL Scheme

3.4.1 Subject to the maxima and minima specified in Section B of this document, it is incumbent on the operator to establish maximum flying duty periods and minimum rest periods appropriate to the nature of flight operations undertaken. The essentials are identified by use of the words 'shall' or 'must'; desirable features are introduced by the words 'should' or 'may'. Comprehensive guidance and instructions shall be included in the Operations Manual for the benefit of all crew members and the staff concerned with the preparation and day to day management of rostering and scheduling.

3.4.2 Although operators must plan their schemes in accordance with the requirements, it is recognised that the standard provisions will not necessarily satisfy every type of operation. In these circumstances operators may apply for a change to the standard provisions. Approval will only be given where an operator can show that his proposal will ensure a better or equivalent level of protection against fatigue than the basic requirements. Approved changes must be brought to the attention of crew members by incorporation into the Operations Manual, or other suitable operating instructions.

3.4.3 It is emphasised that the existence of any industrial agreement cannot in any way absolve either the operator or the crew member from observing any of the conditions contained within an approved FTL scheme.

3.5 Operators' Schemes and Their Approval

3.5.1 The requirements stated above mean that an operator must submit for approval to the DCA a proposed scheme for the regulation of flight and duty times and provision of minimum rest periods.

4 SECTION B

The Scheme

4.1 Introduction

The provisions of this Section set limits on the allowable duty hours and minimum periods of rest for flight crew and cabin crew, employed by holders of a Malaysian Air Operator's Certificate. For the purpose of this document flight crew is as defined by the CAR 1996, and cabin crew has the same meaning with cabin attendant as defined by the CAR 1996, as amended.

The Section contains provisions that are applicable to both flight crew and cabin crew of all aircraft; however, where the nature of the work involved requires the application of other rules then those differences are stated in separate paragraphs. Helicopter flying is covered in paragraph 23 and the rules concerned with the work pattern of cabin crew in paragraph 24.

Paragraphs not applicable to helicopter crew or cabin crew are so annotated.

4.2 Definitions

Unless otherwise defined below all words, phrases, definitions, and abbreviations, have identical meanings to those described in CAR 1996, as amended.

- a. 'Acclimatised'
When a crew member has spent 3 consecutive local nights on the ground within a time zone which is 2 hours wide, and is able to take uninterrupted nights sleep. The crew member will remain acclimatised thereafter until a duty period finishes at a place where local time differs by more than 2 hours from that at the point of departure.
- b. 'Contactable'
A short period of time during the day, other than on a 'day off', during which the company requires a crew member to be at an agreed location for the purpose of giving notification of a duty period which will commence not less than ten hours ahead. The contactable period will be between [*] and [*] local time and shall not exceed 2½ hours.
* Times to be inserted by the company. If required, the 2½ hours can be split into 2 separate periods. Such arrangements must be agreed by the DCA.

- c. 'Crew/Flight Crew/Cabin Crew (Cabin Attendant)'
As defined in the Regulation 2 of the CAR 1996.
- d. 'Days Off'
Periods available for leisure and relaxation free from all duties. A single day off shall include 2 local nights. Consecutive days off shall include a further local night for each additional consecutive day off. A rest period may be included as part of a day off.
- e. 'Dispatch Crew'
A fully qualified and current flight/cabin crew member authorised to carry out pre-flight duties as defined by an operator.
- f. 'Duty'
Any continuous period during which a crew member is required to carry out any task associated with the business of an aircraft operator.
- g. 'Early Start Duty'
A duty is an Early Start Duty if it commences in the period 0500 to 0659 hours local time.
- h. 'Flight Time'
'flight time' means, in relation to any person, all time spent by that person in an aircraft which may or may not be registered in Malaysia, other than an aircraft of which the authorised maximum total weight does not exceed 1,600 kilogrammes and which is not flying for the purpose of public transport or aerial work, while it is in flight and he is carried therein as a member of the crew thereof.
- i. 'Flying Duty Period (FDP)'
Any time during which a person operates in an aircraft as a member of its crew. It starts when the crew member is required by an operator to report for a flight, and finishes at on-chocks or engines off, or rotors stopped, on the final sector.
- j. 'Late Finish Duty'
duty is a Late Finish when the duty finishes in the period 0100 to 0159 hours local time.
- k. 'Local Night'
A period of 8 hours falling between 2200 and 0800 hours local time.
- l. 'Night Duty'
A duty is a Night Duty if any part of that duty falls within the period 0200 to 0459 hours local time.
- m. 'Positioning'
The practice of transferring crew from place to place as passengers in surface or air transport at the behest of an operator.
- n. 'Regular'
Regular, when applied to duties that are Late Finishes, Night or Early Starts, means a run of 4 or 5 consecutive duties, not broken by a period of 34 hours free from such duties, contained in a single 7 consecutive day period.
- o. 'Reporting Time'
The time at which a crew member is required by an operator to report for any duty.
- p. 'Rest Period'
A period of time before starting a flying duty period which is designed to give crew members adequate opportunity to rest before a flight.
- q. 'Rostered/Planned Duty'
A duty period, or series of duty periods, with stipulated start and finish times, notified by the operator to crew in advance.
- r. 'Rostering Period'
A number of consecutive weeks, usually 4, but defined by the operator.
- s. 'Scheduled Duty'
The allocation of a specific flight or flights or other duties to a crew member within the pre notified rostered/planned series of duty periods.
- t. 'Sector'
The time between an aircraft first moving under its own power until it next comes to rest after landing, on the designated parking position.
- u. 'Split Duty'
A flying duty period which consists of two or more sectors, separated by less than a minimum rest period.
- v. 'Standby Duty'
A period during which an operator places restraints on a crew member who would otherwise be off duty. However, it shall not include any time during which an operator requires a crew member to be contactable for the purpose of giving notification of a duty which is due to start 10 hours or more ahead.
- w. 'Suitable Accommodation'
A well furnished bedroom which is subject to minimum noise, is well ventilated, and has the facility to control the levels of light and temperature.
- x. 'Travelling'
All time spent by a crew member transiting between the place of rest, and the place of reporting for duty.
- y. 'Week'
A period of 7 consecutive days starting at any set time and on any set day as specified and stated by the operator.

4.3 Calculation of a Flying Duty Period

4.3.1 The maximum FDP, in hours and fractions of hours, shall be in accordance with paragraph 13, Table A or B (2 or more flight crew, aeroplanes), Table C (single flight crew aeroplanes) or paragraph 23, Table D (helicopters). The times extracted from the tables may be extended by use of in-flight relief, split duty and commander's discretion, under the terms of paragraphs 15, 16 and 18. Where an aeroplane flight crew consists of two pilots only, any FDP involving a sector which is planned to exceed 7 hours must be calculated in accordance with the provisions of paragraph 14.

4.4 Additional Limits on Flying

4.4.1 Late Finishes/Early Starts

4.4.1.1 The conditions set in this paragraph only apply when a crew member is acclimatised.

4.4.2 Sleep deprivation, leading to the onset of fatigue, can arise if a crew member is required to report early for duty, or finishes a duty late, on a number of consecutive days. Therefore, not more than 3 consecutive duties that occur in any part of the period 0100 to 0659 hours local time can be undertaken, nor may there be 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. This 34 consecutive hours may include a duty that is not an Early, Late or Night duty.

4.4.2.1 This paragraph is not applicable to helicopters. However, crew members who are employed on a regular early morning duty for a maximum of 5 consecutive duties shall work to the following:

- a. The minimum rest period before the start of such a series of duties is 24 hours.
- b. The duty will not exceed 9 hours, irrespective of the sectors flown.
- c. At the finish of such a series of duties, crew members will have a minimum of 63 hours free from all duties.

4.4.3 Should a crew member be scheduled for duty that occurs during any part of the period 0200 to 0459 hours local time, for a minimum of 2 and a maximum of 3 consecutive nights, then crew members must be free from all duties by 2100 hours local time before covering the block of consecutive night duties, such that the crew members can take a rest period during a local night.

Note: Operators may replace the above paragraph with one of the following choices, either Options A and B OR Options B and C. The operator may roster crew members for either 2 or 3 consecutive nights, but must ensure that the duty preceding this series of duties finishes by 2359 hours local time (2 nights) or 2100 hours local time (3 nights) as appropriate. If it is preferred to retain the present contents then attention must be paid to the notes attached to the Options listed (below). These notes list the actions to be followed in the event that duty is inadvertently extended beyond the cut-off times (i.e. 2100 or 2359 hours).

Option A

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

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

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

Option B - 2 consecutive night duties

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

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

Option C - 3 consecutive night duties

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

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

Note 2: In all cases the limits in paragraph 7.2 or 7.3 must not be exceeded (i.e. maximum of 3 consecutive nights and 4 in 7 consecutive days).

4.4.3.1 This paragraph is not applicable to helicopters.

However, crew members who are employed on a regular night duty for a maximum of 5 consecutive nights shall work to the following:

- a. The minimum rest period before the start of such a series of duties is 24 hours.
- b. The duty will not exceed 8 hours, irrespective of the sectors flown.
- c. At the finish of such a series of duties crew members will have a minimum of 54 hours free from all duties.

4.4.3.1.1 Options For Night Operations

If an operator elects to roster 4 or 5 consecutive night duties, then the criteria laid down in paragraph 7.3.1 (Section C Annex B paragraph 7.2.1 - Air Taxi) must be complied with and must form part of the approved FTL scheme. Operators are reminded that the normal days off requirements must be met (i.e. the 54 hours off between two blocks of 5 nights is only 1 proper day off). However, if operators find that this part of the Scheme is too restrictive then one of the following options may be employed but, if used, must be fully complied with:

- a. When crew are employed on duty for a total of 20 hours or less during 5 consecutive night duties, (i.e. maximum duty each night is 4 hours) the 54 hours free from all duties will meet the "Days Off" requirements for each 28 consecutive day period. Any positioning flights must be completed within the 20 hours duty.
- b. When crew are employed on duty for a total of more than 20 hours but not more than 40 hours during 5 consecutive night duties, the first 54 hours (between week 1 and week 2) may be counted as 2 "Days Off". For the 28 consecutive day period that starts on the first night of the first duty, crew must be given a minimum of a further 5 "Days Off" (average of a further 6 days). Any positioning flights must be completed within the 40 hours duty.
- c. When crew are employed on duty which requires full use of 40 hours duty during 5 consecutive night duties plus a maximum of 3 hours positioning (pre- and post total) then:
 - i. allowable flying hours (month and year) will be reduced to the following:
 1. a maximum of 75 hours in any 28 consecutive days with a maximum of 60 hours in 28 consecutive days averaged over three 28 day periods, and;
 2. 600 hours in any 12 consecutive months.
 - ii. a minimum of 9 "Days Off" in any 28 consecutive days will be granted;
 - iii. any increase in duty over 40 hours during the block of 5 consecutive night duties is to be added to the subsequent 54 hours rest period which may not be reduced.

4.4.3.1.2 General Rules

When an operator utilises a), b) or c) of paragraph 7.3.1.1, this general rules shall be applied:

- a. The exercise of "Commander's Discretion" is limited to 1 hour per night with a total of 2 hours allowed during any 5 consecutive night cycle. Any duty worked in excess of 40 hours by use of "Commander's Discretion" must also be added to the subsequent 54 hours rest which may not be reduced.
 - b. The absolute maximum duty permitted during a block of 5 consecutive night duties is 45 hours [40 hours, plus 3 hours positioning, plus 2 hours "Commander's Discretion", as per paragraphs 7.3.1.1 c) and 7.3.1.2 a) above].
 - c. Crew cannot be rostered for more than 8 hours per night, except when working to paragraph 7.3.1.1 c) above.
 - d. Split duties and extension of FDP by in-flight rest are not permitted.
 - e. "Commander's Discretion" to reduce rest is not permitted.
- Note: For 5 consecutive earlier, the same rule as in 7.3.1.2 a) above applies (i.e. maximum 1 hour discretion per day and a total of 2 hours in the 5 day cycle).**

4.4.4 Air Taxi/Sole Use Charter/Helicopters - Interrupted Rest

If, prior to the start of an FDP, a crew member's rest period is interrupted for operational reasons between 2300 and 0700 hours local time, the following shall apply: If the disturbance happens earlier than 1 hour before the planned departure from the crew member's place of rest, the time elapsed between that disturbance and the departure time from the place of rest minus 1 hour, shall count as part of the subsequent FDP

Note: The phrase 'operational reasons' applies to such actions as contacting the customer, checking weather, liaison with ATC or any action pertaining to the planned flight. It is anticipated that operators with a 24 hour support organisation will provide these services for crew, leaving their crew members undisturbed.

4.5 Mixed Duties

4.5.1 When a crew member is required to report for duty in advance of the stipulated report time for a scheduled flight, to carry out a task at the behest of an employer, then the time spent on that task shall be part of the subsequent FDP.

4.5.2 Fixed and Rotary Wing Flying

When both fixed wing and rotary wing flying is carried out the more restrictive flight and duty time limitations shall apply.

4.5.3 Mixed Simulator and Aircraft Flying

This paragraph does not apply to cabin crew. When a crew member flies in the simulator, either on a check or training flight, or as a Training Captain or Instructor, and then within the same duty period flies as a crew member on a public transport flight, all the time spent in the simulator is counted in full towards the subsequent FDP, and for helicopters towards the daily flying hour maxima. Simulator flying does not count as a sector, but the FDP allowable is calculated from the report time of the simulator detail.

4.5.4 Mixed Single Pilot/Two Pilot Operations

In one duty period a pilot may fly as a single flight crew up to the point where the total flying and duty hours reach the single flight crew FDP limit. During this time the pilot may fly either in command or as a co-pilot on a 2 flight crew aircraft. The pilot may then continue beyond the single flight crew FDP limit in a 2 flight crew operation up to the 2 flight crew FDP and flying hour maxima, but may only fly as a co-pilot.

(Note: This paragraph does not apply to cabin crew.)

4.6 Travelling Time

4.6.1 Travelling time, other than that time spent on positioning, shall not be counted as duty.

4.6.2 Travelling time, from home to departure aerodrome, if long distances are involved, is a factor influencing any subsequent onset of fatigue. If the journey time from home to normal departure airfield is usually in excess of 1½ hours, crew members should consider making arrangements for temporary accommodation nearer to base.

4.6.3 When crew members are required to travel from their home to an aerodrome other than the one from which they normally operate, any travelling time over and above the journey time from home to the usual operating aerodrome shall be classed as positioning. Notional times for any additional travelling shall be agreed between the operator and the DCA.

4.7 Delayed Reporting Time in a Single FDP

4.7.1 When a crew member is informed of a delay to the reporting time due to a changed schedule, before leaving the place of rest, the FDP shall be calculated as follows. When the delay is less than 4 hours, the maximum FDP allowed shall be based on the original report time and the FDP shall start at the actual report time. Where the delay is 4 hours or more, the maximum FDP shall be based on the more limiting time band of the planned and the actual report time and the FDP starts 4 hours after the original report time.

4.7.2 When an operator informs a crew member before leaving the place of rest of a delay in reporting time of 10 hours or more ahead, and that crew member is not further disturbed by the operator until a mutually agreed hour, then that elapsed time is classified as a rest period. If, upon the resumption of duty, further delays occur, then the appropriate criteria in this paragraph and paragraph 10.1 above shall be applied to the re-arranged reporting time.

4.8 Positioning

4.8.1 All time spent on positioning at the behest of an operator shall count as duty, but positioning does not count as a sector when calculating the FDP. In these circumstances the FDP commences not later than the time at which the crew member reports for the positioning journey, or positions in accordance with paragraph 9.3.

4.8.2 If, after a positioning journey, the crew member spends less than a minimum rest period at suitable accommodation provided by the operator, and then carries out an FDP, the positioning must be counted as a sector if a split duty is claimed when calculating the allowable FDP. If it is not, then a split duty FDP cannot be used.

4.8.3 On occasion, and when agreed by the DCA an operator may recover a crew member from an overseas airfield on a positioning flight on the eighth consecutive day of duty.

4.9 Standby Duty

4.9.1 The time of start, end and nature of the standby duty must be defined and notified to crew members. The time a standby duty starts determines the allowable FDP, except that when the actual FDP starts in a more limiting time band then that FDP limit will apply. However, when standby is undertaken at home, or in suitable accommodation provided by the operator, during the period 2200 to 0800 hours local time and a crew member is given 2 hours or less notice of a report time, the allowable FDP starts at the report time for the designated reporting place.

4.9.2 When a crew member is on standby duty on immediate readiness at an airport, then the allowable FDP is calculated using the start time of the standby duty.

4.9.3 If a crew member is called out from standby, the standby duty will cease when that individual reports at the designated reporting point.

4.9.4 The following limits apply:

Duty	Maximum Duration
Standard Duty (all cases)	12 hours
Standard followed by an FDP	As case A and B below

Case A

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

Case B

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

Notes:

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

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

4.10 Maximum FDP – Aeroplanes

4.10.1 Standard reporting times prior to flight must be specified by an operator. Pre-flight duties are part of the FDP. A period of duty must be allowed for post-flight activities: the minimum for major operators is 30 minutes, 15 minutes for others. If this "period" for post FDP duties is routinely exceeded then the post FDP duty period stated in the scheme must be revised to better represent the actual time taken. The time spent between reporting for a flight and the completion of post-flight tasks determines the length of the subsequent rest period.

4.10.2 The utilisation of a non-standard reporting time, except by use of a dispatch crew, designed to take advantage of an increased FDP from a more favourable time band, must not be used.

4.10.3 Tables A and C apply when the FDP starts at a place where the crew member is acclimatised; Table B applies at other times.

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	13¼	12½	11¾	11	10½	10	9¾
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

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

Maximum FDP - Single Flight Crew

Table C

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

4.10.4 Report times must not be reduced in order for crew members to achieve their required rest prior to an FDP.

4.11 Limits on Two Flight Crew Long Range Operations

This paragraph does not apply to helicopter crew or cabin crew.

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

Scheduled Sector Times	Acclimatised Sectors	Not Acclimatised
Sector Length over 7 hours but not more than 9 hours	2	4
Sector Length over 9 hours but not more than 11 hours	3	4
Sector Length over 11 hours	4	Not Applicable

The appropriate table in paragraph 13 is then entered with the start time of the duty period and the 'modified' number of sectors, to determine the allowable FDP.

4.11.2 When an additional, current, type rated pilot is a crew member, then these limits do not apply and the permissible FDP is determined by entering Table A or B in paragraph 13 with time of start and the actual sectors planned.

4.12 Extension of Flying Duty Period by In-flight Relief

4.12.1 When any additional crew member is carried to provide in-flight relief with the intent of extending an FDP, that individual shall hold qualifications which are equal or superior to those held by the crew member who is to be rested. To take advantage of this facility the division of duty and rest between crew members must be kept in balance. It is unnecessary for the relieving crew member to rest in between the times relief is provided for other crew members.

4.12.2 When in-flight relief is utilised there must be, for the crew members resting, a comfortable reclining seat, or bunk, separated and screened from the flight deck and passengers.

4.12.3 A total in-flight rest of less than three hours does not allow for the extension of an FDP, but where the total in-flight rest, which need not be consecutive, is three hours or more, then the permitted FDP may be extended as follows:

If rest is taken in a bunk	If rest is taken in a seat
A period equal to one half of the total rest taken, provided that the maximum FDP permissible shall be 18 hours; 19 hours in the case of cabin crew.	A period equal to one third of the total rest taken, provided that the maximum FDP permissible shall be 15 hours; 16 hours in the case of cabin crew.

4.13 Extension of Flying Duty Period by Split Duty

4.13.1 When an FDP consists of two or more sectors - of which one can be a positioning journey counted as a sector - but separated by less than a minimum rest period, then the FDP may be extended by the amounts indicated below.

Consecutive Hours Rest	Maximum Extension of the FDP
Less than 3	NIL
3 - 10	A period equal to half the consecutive hours rest taken.

4.13.2 The rest period shall not include the time allowed for immediate post-flight duties and pre-flight duties, a minimum total of 30 minutes. The actual time allowed shall be specified by the operator. When the rest period is 6 hours or less it will suffice if a quiet and comfortable place, not open to the public, is available. If the rest period is more than 6 consecutive hours, then suitable accommodation must be provided.

4.13.3 When rest is taken in the aircraft on the ground, the minimum standards of noise, temperature, light and ventilation are to be specified in the Operations Manual. Such arrangements will only be permitted when the crew have adequate control of the temperature and ventilation within the aircraft, and passengers are not on board.

4.14 Rest Periods

4.14.1 The aircraft operator must notify all crew members in good time of a flying duty period so that sufficient and uninterrupted pre-flight rest can be obtained. When away from base the operator must provide the crew with the opportunity and the facilities for adequate pre-flight rest. The operator must provide suitable accommodation. When flights are carried out at such short notice that it is impracticable for an operator to arrange suitable accommodation, then this responsibility devolves to the aircraft commander.

4.14.2 The minimum rest period which must be provided before undertaking a flying duty period shall be:

- At least as long as the preceding duty period, or
- 12 hours - Whichever is the greater.

4.14.2.1 When away from base, in the case when the rest period earned by a crew member is 12 hours, and suitable accommodation is provided by the operator, then the rest period may be reduced by one hour. In such circumstances, if the travelling time between the aerodrome and the accommodation is more than 30 minutes each way then the rest period must be increased by the amount the total time spent travelling in excess one hour. The room allocated to the crew member must be available for occupation for a minimum of 10 hours. This sub-paragraph does not apply to rest periods that exceed 12 hours.

4.14.2.2 Exceptionally at home base, individual crew members may be asked to exercise their discretion to reduce rest by up to a maximum of one hour but only to a minimum of 12 hours for flight crew and 11 hours for cabin crew. If discretion is used, it is the responsibility of the operator and the crew member to inform the commander of the flight immediately following the rest period, that a reduced rest period has been taken.

4.14.3 If the preceding duty period, which includes any time spent on positioning, exceeded 18 hours, then the ensuing rest period must include a local night.

4.14.4 The rest period following a sequence of reduced rest and then an extended FDP, cannot be reduced.

4.14.5 After being called out from a standby duty the length of minimum rest shall be determined by the length of standby duty, plus any time spent on positioning, and any FDP completed.

4.14.6 Crew members who inform an operator that they are having difficulty in achieving adequate pre-flight rest must be given the opportunity to consult an aviation medical specialist.

4.15 Aircraft Commander's Discretion to Extend a Flying Duty Period

4.15.1 An aircraft commander may, at his discretion, and after taking note of the circumstances of other members of the crew, extend an FDP beyond that permitted in paragraph 13, Tables A, B, C, or paragraph 23, Table D, provided he is satisfied that the flight can be made safely. The extension shall be calculated according to what actually happens, not on what was planned to happen. An extension of 3 hours is the maximum permitted, except in cases of emergency (see Note 1).

4.15.2 The operator's scheme shall include guidance to aircraft commanders on the limits within which discretion may be exercised, and shall include specific limits to which a commander may extend the flying duty period. In a Flying Duty Period involving 2 or more sectors up to a maximum of 2 hours discretion may be exercised prior to the first and subsequent sectors. On a single sector flight and immediately prior to the last sector on a multi-sector flight, a commander may utilise the full amount of discretion authorised by the operator.

4.15.3 A commander may exercise discretion to extend an FDP following a reduced rest period, only exceptionally, and then only to the extent necessary to allow for unforeseen circumstances that become apparent during the last sector.

4.15.4 Whenever a commander extends an FDP, it shall be reported to his employer on a Discretion Report Form, either in the format of Appendix A or on a form acceptable to the DCA. If the extension is greater than 2 hours, or when exercised after any reduced rest period, then the operator shall submit the commander's written report, together with the operator's comments to the DCA, within 14 days of the aircraft's return to base.

Notes:

1. In respect of an extension of a flying duty period, an emergency is a situation which in the judgement of the commander presents a serious risk to the health or safety of crew and passengers, or endangers the lives of others.
2. Discretion reports may be used by the DCA to assess the realism of particular schedules.

4.16 Aircraft Commander's Discretion to Reduce a Rest Period

4.16.1 An aircraft commander may, at his discretion, and after taking note of the circumstances of other members of the crew, reduce a rest period but only insofar as the room allocated to the crew member must be available for occupation for a minimum of 10 hours. The exercise of such discretion shall be considered exceptional and must not be used to reduce successive rest periods. If the preceding FDP was extended, the rest period may be reduced, provided that the subsequent allowable FDP is also reduced by the same amount. In no circumstances may a commander exercise discretion to reduce a rest period below 10 hours at accommodation.

4.16.2 Whenever a commander reduces a rest period, it shall be reported to his employer on a Discretion Report Form, in the format of Appendix B, or on a form acceptable to the DCA. If the reduction is more than 1 hour, then the operator shall submit the commander's written report together with the operator's comments, to the DCA, within 14 days of the aircraft's return to base.

4.17 Days Off (This paragraph does not apply to helicopter crew.)

4.17.1 Wherever possible and if required by the crew member, days off should be taken in the home environment.

4.17.2 A single day off shall include 2 local nights, and shall be of at least 34 hours duration.

4.17.3 A planned rest period may be included as part of a day off.

4.17.4 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.

4.18 Absolute Limits on Flying Hours

This paragraph does not apply to helicopter crew.

4.18.1 A person shall not act as a member of the flight crew of an aircraft if at the beginning of the flight the aggregate of all previous flight times:

- a. during the period of 28 consecutive days expiring at the end of the day on which the flight begins exceeds 100 hours. (This means that on the 28th day a flight crew member may depart on a single sector flight, and may complete that sector, even though at the end of the flight the total flying hours completed in 28 days will exceed 100 hours. Consequently, the flight crew member cannot then continue to operate as a flight crew member on any subsequent sectors during that day); or
- b. during the period of 12 months, expiring at the end of the previous month exceeds 900 hours.

4.19 Cumulative Duty Hours

4.19.1 The maximum duty hours for flight crew, excepting helicopters, shall not exceed: 55 hours in any 7 consecutive days, but may be increased to 60 hours, when a rostered duty covering a series of duty periods, once commenced, is subject to unforeseen delays; 95 hours in any 14 consecutive days; and 190 hours in any 28 consecutive days.

The maximum hours allowed to helicopter crew members are stated in sub-paragraph 23.5.

4.19.1.1 When away from base and where an individual crew member separates from the crew, or the crew as a whole splits up, then any use of discretion to reduce rest becomes a decision for an individual crew member. The decision to continue with the next flight and the submission of an associated discretion report is the responsibility of the relevant commander after the crew member, and operator if in a position to do so, has informed the commander that a reduced rest period has been taken.

4.19.2 When a crew member is not rostered for either standby or flying duties for 28 or more consecutive days then any duty hours worked need not be added to cumulative totals.

However, when a crew member is anticipated to return to either standby or flying duties the duty hours worked in the 28 days preceding that duty must be recorded.

Before allocating a flying duty to a crew member the operator must be satisfied that that crew member is in compliance with the scheme.

4.19.3 Calculation of Cumulative Duty Hours (all aircraft)

Duty hours shall be added to cumulative totals in accordance with the following:

- a. To count in full:
 - i. Duty periods and flying duty periods, plus subsequent post-flight duties
 - ii. All standby duty, except that specified in b) i) and ii) below
 - iii. The time spent on positioning.
- b. To count as half the time on duty:
 - i. The standby duty, when the period of notice given to the crew member by the operator before reporting for duty, is treble or more than the specified minimum report time.

- ii. The standby duty when undertaken at home, or in suitable accommodation provided by the operator, takes place during the period 2200 to 0800 hours, and the crew member can take undisturbed rest and is not called out for duty.

4.20 Limits on Helicopter Flying

4.20.1 Table D Maximum FDP – 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

4.20.2 Additional Limits on Helicopter Flying

4.20.2.1 Repetitive Short Sectors

Crew flying repetitive short sectors, for example pleasure flying, offshore short sector shuttles, at an average rate of 10 or more landings per hour, shall have a break of at least 30 minutes away from the helicopter within any continuous period of 3 hours.

4.20.2.2 When carrying out the more demanding roles of helicopter flying, for example, winching and external load carrying, operators shall specify maximum periods of continuous operation. The limits set shall not exceed the maximum allowed in subparagraph 23.2.1, but depending on the nature and circumstances of a particular operation may need to be more restrictive.

4.20.2.3 After 3 hours shuttle operations between offshore installations in conditions other than day VMC, a rest of 30 minutes free of all duty shall be allowed.

4.20.2.4 Survival Suits

The wearing of survival suits can prove an irritant and be uncomfortable. Therefore:

- a flight crew member should not participate in moving freight or baggage, or any other activity requiring excessive physical effort. His role should be supervisory.
- Schedules which involve continuous flying in excess of 4½ hours must include provisions for a break free of all duty of at least 30 minutes, not including a total of 30 minutes for immediate post-flight duties and pre-flight duties. The break must be scheduled prior to exceeding a total of 6 hours flying.

4.20.3 Helicopter Crew Days Off

4.20.3.1 Wherever possible, and if required by the crew member, days off should be taken in the home environment. A single day off for helicopter crew shall include two local nights, and shall be of at least 36 hours duration. A planned rest period may be included as part of a day off.

4.20.3.2 Crew members shall:

- not work more than 7 consecutive days, and
- have 2 consecutive days off following a period of 7 consecutive days duty, and
- 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.

Note: A single day off can only be allocated when 6 or less consecutive days duty have been worked.

4.20.4 Absolute Limits on Flying Hours

The maximum flying hours for flight crew will be 90 in any 28 consecutive days, and 800 in any period of 12 months.

4.20.5 Cumulative Duty and Flying Hours (Helicopters)

Maximum duty hours for flight crew shall not exceed:

60 hours in any 7 consecutive days and

200 hours in any 28 consecutive days.

4.20.6 The Maximum number of Flying Hours which a pilot may be permitted to undertake are:

Single Day	Table D
Any 3 consecutive days	18 hours
Any 7 consecutive days	30 hours
Any 3 consecutive 28 day periods	240 hours

4.21 Rules Relating to Cabin Crew/ attendant

4.21.1 The requirements detailed in this paragraph shall be applicable to all cabin crew employed as crew members and are not intended to apply only to those cabin crew carried to meet the provisions of the Civil Aviation Regulations 1996.

4.21.2 The limitations which shall be applied to cabin crew are those applicable to flight crew members contained in paragraphs 6 to 23, but with the following differences:

- a. A flying duty period can be 1 hour longer than that permitted for flight crew. The FDP and limits set on early starts for cabin crew shall be based on the time at which the flight crew report for their flying duty period, but that FDP will start at the report time of the cabin crew.
- b. For cabin crew the minimum rest period which will be provided before undertaking a flying duty period shall be:
 - i. at least as long as the preceding duty period less 1 hour;
 - ii. 11 hours;
 - whichever is the greater.
- c. The combined sum of standby time and subsequent FDP can be 1 hour longer than that permitted to flight crew.
- d. The maximum duty hours for cabin crew shall not exceed:
- e. The annual and 28 day limits on flying hours pertaining to flight crew need not be applied.
- f. The limits relating to two pilot flight crew long range operations do not apply.

4.22 Records to be Maintained

4.22.1 Records for the duty and rest periods of all flying staff must be kept. These records shall include:

For each crew member:

The beginning, end and duration of each duty or flying duty period, and function performed during the period. Duration of each rest period prior to a flying duty or standby duty period. Dates of days off. 7 consecutive day totals of duty. With the agreement of the DCA, operators employing more than 100 cabin crew need only record the information required above for a percentage of cabin crew. The size of the percentage and the rate of sampling will be agreed by the assigned Inspector and the operator.

For each flight crew member:

Daily and 7 consecutive day flying hours.

Records shall be preserved for at least 12 calendar months from the date of the last relevant entry.

4.22.2 Additionally, operators shall retain all aircraft commanders' discretion reports of extended flying duty periods, extended flying hours, and reduced rest periods for a period of at least six months after the event.

Appendix A Commander's Discretion Report - Extension Of Flying Duty Period/Flying Hours

Part A Operator Aircraft Type
Flight Number Commander
Date

NOTE: If discretion exercised for part crew or individuals state name(s) and operating capacity below.

Part B Voyage Details

- 1 Crew acclimatised YES/NO
- 2 Length of preceding rest - 18 to 30 hrs/under 18 or over 30 hrs Hrs Mins
- 3 Allowable FDP from Table A or B
- 4 Split duty: actual time off..... time on..... Credit
- 5 In-flight relief; rest taken..... bunk/seat..... Credit
- 6 Revised allowable FDP

Voyage Details						
Schedule (Planned)				Actual		
	Place	UTC	Local		UTC	Local
Duty to start				Duty started		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
FDP to end				FDP ended		
				Actual FDP		

Amount of Commander's Discretion Exercised - Hrs Mins
Maximum Flying Hours Permitted in 28 days/1 year period. Hours Flown

Part C Commander's Report

Signed
Date

Operator's Remarks/Action Taken

Signed
Date

Forwarded to **DCA**
Filed

Appendix B Commander's Discretion Report - Reduction of Rest

NOTE: All times to be recorded as date/time six-figure groups, expressed in both UTC and Local time.

Part A	Operator	Aircraft Type
	Flight Number	Commander
	Date	

NOTE: If discretion exercised for part crew or individuals state name(s) and operating capacity below.

Part B	Last duty started	UTC/Local
	Last duty ended	UTC/Local
	Rest earned	Hours
	Calculated earliest next available	UTC/Local
	Actual start of next FDP	UTC/Local
	Rest period reduced by	
	Crew affected:	

Part C Commander's Report

Signed
Date

Operator's Remarks/Action Taken

Signed
Date

Forwarded to **DCA**
Filed

