Advisory Circular

Subject: **Flight Crew Member Fatigue Management – Prescriptive Regulations**

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1.0 INTRODUCTION

(1) This Advisory Circular (AC) is intended to provide guidance for compliance with the Regulations amending the *Canadian Aviation Regulations* (Part I, VI and VII – Flight Crew Member Hours of Work and Rest Periods) as published in the *Canada Gazette*, Part II on December 12, 2018. This document has been updated and reflects the final regulations as published in the *Canada Gazette*, Part II and the feedback received from the stakeholder consultation process.

(2) This Advisory Circular provides information and guidance. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with regulatory requirements. This Advisory Circular on its own does not set minimum standards or change, create, amend or approve deviations from regulatory requirements.

1.1 Purpose

(1) This document explains the intent of the regulatory requirements related to Flight Crew Fatigue Management – Prescriptive Regulations.

1.2 Applicability

(1) This document applies to the holders of Air Operator Certificates in accordance with the Canadian Aviation Regulations (CAR) Part VII, Subparts 3, 4, and 5 (703, 704, and 705).

1.3 Description of Changes

(1) Not applicable.

2.0 REFERENCES AND REQUIREMENTS

2.1 Reference Documents

(1) It is intended that the following reference materials be used in conjunction with this document:

(a) Regulations amending the *Canadian Aviation Regulations* (Part I, VI and VII– Flight Crew Member Hours of Work and Rest Periods), published in *Canada Gazette*, Part II, Volume 152, No. 25 on December 12, 2018; and,

(b) TP 14573 - Fatigue Risk Management System for the Canadian Aviation Industry - Fatigue Management Strategies for Employees.

2.2 Cancelled Documents

(1) Not applicable.

(2) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

2.3 Definitions and Abbreviations

(1) The following **definitions** are used in this document:

(a) **Acclimatized:** the physiological and mental state of a flight crew member whose biorhythm is considered aligned with local time.

(b) **Consecutive days:** more than one twenty-four hour period in a continuous and unbroken sequence.

(c) **Crew member:** means a person who is assigned to duty in an aircraft during flight time.

(d) **Duty:** means any task that a flight crew member is assigned by an air operator at a specific time, including, but not limited to management, flight duty, administration, training, positioning, reserve, and standby – synonymous with hours of work.

(e) **Early duty:** duty that begins between 02:00 and 06:59 local time, at the location where the flight crew member is acclimatized.

(f) **Fit for duty:** a flight crew member whose ability to act as a flight crew member of an aircraft is not impaired by fatigue, the consumption of alcohol or drugs or any mental or physical condition.

(g) **Flight crew member:** means a crew member assigned to act as pilot or flight engineer of an aircraft during flight time.

(h) **Flight crew member on reserve**: a flight crew member who has been designated by an air operator to be available to report for flight duty on notice of at least 12 hours before the start time of the reserve availability period, if no part of the reserve availability period falls during the flight crew member's window of circadian low; or at least 32 hours, if any part of the reserve availability period falls during the flight crew member's window of circadian low.

(i) **Flight crew member on standby:** a flight crew member who has been designated by an air operator to remain at a specified location in order to be available to report for flight duty on notice of one hour or less.

(j) **Flight duty:** duty assigned to a flight crew member during a flight duty period.

(k) **Flight duty period**: period of time that ends at "engines off" or "rotors stopped" at the end of a flight and begins the earlier of the time that a flight crew member:

  (i) carries out any duties assigned by the private air operator or the air operator or delegated by the Minister before reporting for a flight;

  (ii) reports for a flight or, if the flight duty period comprises more than one flight, reports for the first flight;

  (iii) reports for positioning; or

  (iv) reports as a flight crew member on standby.

(l) **Flight time:** the time from the moment an aircraft first moves under its own power for the purpose of taking off until the moment it comes to rest at the end of the flight.

(m) **Home base**: means the location where a flight crew member normally commutes to in order to report for a flight duty period or for positioning.

(n) **Late duty**: duty that ends between midnight and 01:59 local time at the location where the flight crew member is acclimatized.

(o) **Local night's rest**: means a rest period of at least nine hours that takes place between 22:30 and 09:30 local time at the location where the flight crew member is acclimatized. Travel time to or from suitable accommodation is excluded from a rest period.

(p) **Medical evacuation flight**: means a flight carried out for the purpose of facilitating medical assistance and that transports, one or more of the following:

  (i) medical personnel;

  (ii) ill or injured persons;

  (iii) human blood products or organs; or

(iv) medical supplies.

(q) **Night duty:** duty that begins between 13:00 and 01:59 and that end after 01:59 at a location where the flight crew member is acclimatized.

(r) **Positioning:** the transfer of a flight crew member from one location to another, at the request of an air operator, but does not include travel to or from suitable accommodation or the flight crew member's lodging.

(s) **Reserve availability period**: the period of time in any period of 24 consecutive hours during which a flight crew member on reserve is available to report for flight duty.

(t) **Reserve duty period**: the period of time that begins at the time that a flight crew member on reserve is available to report for flight duty and ends at the time that the flight duty period ends.

(u) **Rest period**: the continuous period during which a flight crew member is off duty, excluding the travel time to or from suitable accommodation provided by a private operator or an air operator.

(v) **Single day free from duty**: means time free from duty from the beginning of the first local night's rest until the end of the following local night's rest.

(w) **Suitable accommodation**: a single-occupancy bedroom that is subject to a minimal level of noise, is well ventilated and has facilities to control the levels of temperature and light or, where such a bedroom is not available, an accommodation that is suitable for the site and season, is subject to a minimal level of noise and provides adequate comfort and protection from the elements.

(x) **Transoceanic**: crossing or extending across the ocean.

(y) **Unforeseen operational circumstances:**

(i) An event, such as unforecasted adverse weather, or an equipment malfunction or air traffic control delay, which is beyond the control of an air operator or private operator.

(ii) For the purposes of this guidance material, the terms 'unforeseen', 'unexpected' and 'unanticipated' have the same meaning.

(z) **Window of Circadian Low:** the period of time beginning at 02:00 and ending at 05:59 at the location where the flight crew member is acclimatized.

(2) The following **abbreviations** are used in this document:

(a) **AC:** Advisory Circular;

(b) **CARs:** Canadian Aviation Regulations;

(c) **SAE ARP:** Society of Automotive Engineers Aerospace Recommended Practice;

(d) **TCCA:** Transport Canada Civil Aviation;

(e) **VFR:** Visual Flight Rules.

2.4 Background

(1) With the recent publication in the *Canada Gazette*, Part II of new regulations for Flight Crew Fatigue Management, Transport Canada Civil Aviation (TCCA) has committed to provide guidance material to assist in the interpretation of these regulations.

3.0 RELATED CHANGES IN CAR PART VI

(1) There are changes in CAR Part VI (602.02, 602.03, and 602.47) that relate to fitness for duty and suitable accommodation.

3.1 CAR 602.02 – Fitness of Flight crew members

(1) Prohibits an operator from requiring that any person act as a flight crew member or carry out a preflight duty, if the operator or the person believes that they are not, or are not likely to be, fit for duty.

(2) If for any reason a person believes that they are not, or are not likely to be, fit for duty, then they shall not act as a flight crew member nor carry out preflight duties – nor be assigned by the air operator to these duties.

(3) This applies broadly to performance impairments caused by: fatigue (i.e., too tired or likely to be too tired during the flight duty period in question), alcohol (i.e., under the influence or consuming alcohol within 12 hours of a flight duty period), drugs (e.g., legal, prescription, over-the-counter or illegal drugs) and mental, or physical condition (e.g., having a broken arm and not being able to manipulate the controls).

(4) This is an obligation to act on an obvious situation: after observing a flight crew member who smells of alcohol, cannot walk in a straight line, and is slurring their speech – a reasonable person observing this behaviour may conclude that this individual is not fit for duty. If a flight crew member were plainly having a mental health crisis, such that the person observing the situation felt that something was wrong, the flight crew member should be prevented from flying until it is confirmed that the flight crew member is fit for duty.

3.2 CAR 602.03 – Alcohol or Drugs — Flight crew members

(1) CAR 602.03 prohibits any person from acting as a flight crew member

(a) within 12 hours after consuming an alcoholic beverage.

3.3 CAR 602.47 – Suitable Accommodation

(1) Requires that an air operator or private operator provide suitable accommodation to flight crew members for the purpose of rest periods while away from home base.

4.0 CAR PART VII, DIVISION III - FLIGHT CREW MEMBER FATIGUE MANAGEMENT GUIDANCE MATERIAL

4.1 CAR 700.19(1) – Non-Application and Interpretation

(1) Stipulates that Division III does not apply to flight operations under Subpart 2 of Part VII (702 air operators and their flight crews) or medical evacuation flights (air operators and their flight crews).

(2) Where an air operator holds multiple air operator certificates – a 703, 704, or 705 certificate and a 702 or 604 certificate or conducts medical evacuation flights – the air operator must include all flight time, flight duty periods, duty time (hours of work), rest periods and time free from duty occurring under Subpart 702, Subpart 604 or during medical evacuation flights operated under Division IV when applying the limitations found in Division III.

4.2 CAR 700.19(2) – Meaning of Local Time

(1) This subsection indicates that references to a time of day are:

(a) to the local time at their location if the flight crew member is acclimatized to that location; and

(b) to the local time of the last location at which the flight crew member was acclimatized, if the flight crew member is not acclimatized to their current location.

(2) Acclimatization, occurring at a rate of one hour per twenty-four hours in the new location, means that a flight crew member has been in the location long enough to recover from circadian disruptions resulting from time zone travel (i.e. jet lag) and practically it means that they sleep at night and are awake during the day.

4.3 CAR 700.20(1) – Monitoring System and Records

(1) Requires an air operator to have a system that monitors the flight times, flight duty periods, hours of work (duty periods) and rest periods of each of its flight crew members. The air operator must document in its company operations manual the details of the system: how it works and how it is used.

(2) The purpose of the monitoring system is to ensure that air operators do not assign flight crew members to duty (and flight crew members will not accept any duty) that will exceed any limitations and that flight crew members are provided with the required rest periods and time free from duty.

(3) The requirement for a monitoring and recording system remains unchanged in scope from the current system that is required by the *Regulations*.

4.4 CAR 700.20(2) – Items to be Recorded

(1) Requires that, for each flight crew member, the air operator shall keep a record of:

(a) all flight times;

(b) flight duty periods - the start time, duration and end time of each;

(c) duty periods (hours of work) - the start time, duration and end time of each period of duty as defined in section 1.6 of this document;

(d) rest periods – the start time, duration and end time of each; and

(e) all time free from duty.

(2) An air operator holding a 702 or 604 certificate or conducting medical evacuation flights under Division IV shall include this information from those flight operations in the calculation of limitations under Division III.

4.5 CAR 700.20(3) – Records of Use of Unforeseen Operational Circumstances

(1) Requires an air operator to keep all notifications from a pilot-in-command of the use of the unforeseen operational circumstance provisions to extend or reduce a flight duty period, or increase a rest period. The method of communication of the use of the provision is not specified but the operator must keep a record of when, why and how the unforeseen operational circumstance provision was used.

4.6 CAR 700.20(4) – Period to be Kept

(1) Requires that the records referred to in this Section (700.20) be kept for a period of 24 months after the record was made. For example, a record made on February 12, 2018 would need to be kept until February 12, 2020 (the record can be destroyed after February 12, 2020).

4.7 CAR 700.21(1) – Air Operator Obligations — Scheduling

(1) Requires that a flight crew member be provided with his or her schedule sufficiently in advance for the flight crew member to plan for adequate rest.

(2) If the air operator is unable to provide the schedule sufficiently in advance, they can choose to use the “flight crew member on reserve” (CAR 700.70) or “flight crew member on standby” (CAR 700.71) provisions as long as all requirements of these alternatives are followed.

(3) This subsection requires advanced notification that will permit the flight crew member to plan for and obtain adequate rest.

(4) Being able to obtain at least one local night rest prior to the flight duty could meet this requirement, if the situation permits. For example, if the flight crew member reported for a flight duty period at 07:00 and then at 15:00 they are informed that the next day the reporting time will be 07:00. Assuming that the established sleep/wake cycle is not being disturbed and the required rest period can be obtained, this would be reasonable. However in the same situation, if the reporting time the next day will be 03:00 and the flight crew member is being informed at 15:00, this would not meet the standard for ‘sufficiently in advance’.

(5) For example:

(a) If no part of the of the planned flight duty period occurs during the flight crew member’s window of circadian low, 12 hours’ notice before the beginning of the flight duty period; or

(b) If any part of the planned flight duty period occurs during the flight crew member’s window of circadian low, 32 hours’ notice before the beginning of the flight duty period.

4.8 CAR 700.21(2) – Monitoring for Exceedances

(1) The intent of the amendment to CARs – (Flight crew member Hours of Work and Rest Periods) is to minimise the risk of fatigue adversely affecting a flight crew member. The monitoring system is intended for operators to provide oversight of their own operational control systems to ensure that flight crew members are not scheduled in such a way as to exceed any flight and duty time limitations at any time.

(2) This provision requires that the air operator monitor for exceedances to the planned flight duty periods by determining on a monthly basis if the planned flight duty periods are being exceeded more than 10% of the time in a period of 90 consecutive days.

(3) The subsection allows the air operator to determine if their planning process is realistic and functioning properly. It will also determine if the air operator is relying on the use of unforeseen operational circumstances. Use of unforeseen operational circumstances on a particular flight duty period more than 10% of the time would indicate that the planned flight duty period cannot reasonably be expected to be completed within the allowed flight duty period and would indicate that a change in the planning process may be required.

(4) Air operators should establish and document a process for monitoring for exceedances to the planned flight duty periods on a monthly basis.

(5) This will require the air operator to review what they have actually flown. For example, the day may be planned with three flights and permit a flight duty period of 13 hours. If additional flights are added to the day’s schedule, the maximum flight duty period may be reduced. The air

operator will need to determine if the allowable flight duty period has been exceeded – was this because of unforeseen operational circumstances?

4.9 CAR 700.21(3) – Unreasonable Planning

(1) Requires that when an air operator has determined that more than ten percent of flight duty periods are exceeded (as in 700.21(2)) as a result of unforeseen operational circumstances, no later than 28 days after the day on which the determination was made, the air operator shall change the schedule or the flight crew member pairing for the flight.

(2) Regularly exceeding the limitation by more than 10% of the time no longer qualifies as reasonable planning and the schedule or pairing needs to be adjusted. The air operator will have 28 days after the day on which the determination is made to re-plan the flight duty period, schedule or pairing.

(3) Air operators may want to assess all of the flight duty periods for their operations to ensure that an exceedance does not occur during more than 10% of the flight crew member's maximum flight duty periods.

4.10 Examples for Unreasonable Planning:

(1) The flights associated with the flight duty period are always the same:

- (a) For example: Toronto to Asia (one-way) or Toronto to Central America (return). In these two examples, the number of variables is reduced and it is straightforward to determine if the flights are being planned realistically. Does the single flight or the two flights fit into the permitted flight duty period? Adjustments must be made within 28 days of discovery and could be used for future planning (e.g., for the same season next year).

(2) The flights that make up the flight duty period change each month:

- (a) More involved as the flight duty period is affected by many individual flights. Determine if the planned time to go from A to B is realistic – including ground delays. For example, a Montreal to LaGuardia return flight should reflect a realistic amount of time for air traffic control delays, taxi time, etc. and, in addition, the other flights that make up the flight duty period have to be considered individually to determine if the flight duty period was planned realistically.

(3) The flights are rarely repeated:

- (a) In general, the individual flights and flight duty periods are planned realistically. For example: Forecast winds are used, additional time for de-icing is included (if applicable), the time between flights is realistic etc. A 20 minute turnaround time (refueling stop) in Thunder Bay may be possible and realistic but a 20 minute turnaround time in Toronto is unrealistic given the size of the airport (taxiing could take 20 minutes).

4.11 CAR 700.21(4) – Seasonal Planning

(1) Provides an alternative to Subsection (3), if an air operator plans on a seasonal basis (for example uses historical seasonal winds – winter, spring, summer and fall) and they are exceeding the flight crew member's maximum flight duty periods by more than 10%, they may apply the correction to the schedule at the beginning of the same season the next year.

4.12 CAR 700.26(1) – Unfit for Duty – At Reporting Time

(1) Requires that if a flight crew member reports for a flight duty period and advises the air operator that they are not fit for duty, the air operator shall not allow the flight crew member to begin a flight duty period.

(2) As a flight duty period begins when the flight crew member reports for duty, the intent is that the air operator, after being advised by the flight crew member that they are not fit for duty, will immediately remove the flight crew member from flight duty – the air operator will not permit the flight crew member to continue to perform any other duties except as explained in subparagraph (6) of this section.

(3) If the flight crew member realizes that they are not fit for duty prior to reporting, they should advise the air operator.

(4) For example, a flight crew member reports for a flight duty period (the flight duty period begins) and shortly after the flight crew member reports they advise the air operator that they are not fit for duty. The air operator then removes the flight crew member from the assigned flight duty period. This is the desired sequence of events. The few minutes where the flight crew member has reported (and may have begun the flight duty period) is not of concern.

(5) If a flight crew member were to advise the air operator that they are unfit for the assigned duty but they are fit for a different duty, it would be reasonable for the air operator to reassign the flight crew member to that duty. When a flight crew member reports that they are not fit for duty due to fatigue, the air operator should investigate the circumstances that resulted in a flight crew member not being fit for duty. For example, is it the schedule that the air operator assigned, the schedule that the flight crew member has chosen or other individual factors?

(6) Acclimatization is not a factor in determining that a flight crew member is not fit for duty unless that person is fatigued to the point where it affects their fitness to report. For example: a flight crew member may report unfit for duty as a result of fatigue caused by previous duty if they had insufficient time to acclimatize to local time in the previous location or due to positioning across multiple time zones.

4.13 CAR 700.26(2) – Unfit for Duty – During Flight Duty Period

(1) Requires that if during a flight duty period a flight crew member becomes fatigued to an extent that they are no longer fit for duty, the flight crew member shall advise all other flight crew members and the air operator as soon as possible.

(2) In cases where a flight crew member becomes no longer fit for duty during a flight duty period, the flight crew member would advise the other flight crew member(s) and the air operator. If the aircraft were on the ground when this occurs, the flight crew member who is no longer fit for duty would be removed from flight duty.

(3) If the flight crew member becomes no longer fit for duty during a flight with a flight crew of two, the other flight crew member would have to manage the situation and safely land the aircraft.

(4) If the flight crew member becomes no longer fit for duty during a flight with additional flight crew members onboard (augmented flights - three or four flight crew in total), the flight crew member who is no longer fit for duty should be replaced by one of the additional flight crew members.

4.14 CAR 700.26(3) – Unfit for Duty – During Flight Duty Period (Single-Pilot)

(1) Sets out the steps to be taken for the case described in subsection (2), but for an aircraft operated by a single-pilot.

(2) In the case where a single-pilot becomes no longer fit for duty during a flight duty period, the flight crew member is required to, as soon as possible, remove himself or herself from the flight duty and advise the air operator.

(3) If the single-pilot becomes fatigued to the extent that they are not fit for duty while the aircraft is in flight, the single-pilot should land the aircraft safely, remove themselves from flight duty and then advise the air operator.

4.15 CAR 700.27(1) – Maximum Flight Time

(1) Requires that flight times flown by flight crew members not exceed specified limitations. Therefore, air operators are prohibited from assigning flight time to a flight crew member, and a flight crew member is prohibited from accepting a flight time assignment, if the limitations will be exceeded.

(2) The flight time limits are:

- (a) 112 hours in any 28 consecutive days;
- (b) 300 hours in any 90 consecutive days;
- (c) 1,000 hours in any 365 consecutive days; or
- (d) 8 hours in any 24 consecutive hours, in the case of a single-pilot operation.

(3) These limitations are cumulative totals over the specified period. To determine how many flight hours a flight crew member can fly today, the total flight time flown in the previous 27 days, 89 days, and 364 days (i.e., the totals not including today) must be determined. The total number of hours flown in the previous 27 days, 89 days, and 364 days is subtracted from the limitations above and the difference is the flight time available to be flown today.

(4) Examples:

- (a) In the previous 27 days, the flight crew member has flown 103.4 hours. The available flight time today is: 112 – 103.4 = 8.6 hours;
- (b) In the previous 89 days the flight crew member has flown 290.2 hours. The available flight time today is: 300 – 290.2 = 9.8 hours; and
- (c) In the previous 364 days the flight crew member has flown 986.7 hours. The available flight time today is: 1,000 – 986.7 = 13.3 hours.

(5) In the case of a single-pilot operation, the 8 hours in any consecutive 24 hours includes all flight time the flight crew member flies in that period and applies when the flight crew member is acting as a single-pilot.

(6) For example, a flight crew member is part of a 2-person flight crew and flies 5 hours of flight time during the first part of a flight duty period. This flight crew member could then act as a single-pilot for an additional 3 hours of flight time during that period of 24 consecutive hours (looking back at the previous 24 hours).

(7) Conversely, the flight crew member could act as a single-pilot for up to 8 hours of flight time and then become part of a 2-person flight crew for the remainder of the available flight duty period. The additional flight hours are not as part of single-pilot operation, so the flight time limitations in CAR 700.27 (1) (a) to (c) apply. The next day, the 24-hour look back would have to be applied to determine what hours are available if a flight crew member wishes to operate single-pilot.

4.16 CAR 700.27(2)(a) and (b) – Augmented Flight Crews

(1) Stipulates that the flight time accumulated by a flight crew member in all flight operations is included in the flight time total and that for augmented flight crews the total flight time with an augmented flight crew is included.

(2) The air operator and the flight crew member are required to include all flight time in the flight time totals. When combined with section 700.20, this means that a flight crew member must advise the air operator of all flight time (e.g., including any accumulated flight time with another air operator) that they accumulate and the air operator is required to include this flight time when assigning flight time to flight crew members.

4.17 CAR 700.27 (2) (b) – Total Flight Time with Augmented Flight Crew Members

(1) Stipulates that for augmented flight crews the total flight time is included in the flight time total (i.e., not just the time that each flight crew member spends at the flight controls).

4.18 CAR 700.28(1) – Maximum Flight Duty Period

(1) Requires that assigned flight duty periods not exceed specified limitations. Therefore, air operators are prohibited from assigning flight duty periods to a flight crew member and flight crew members are prohibited from accepting such an assignment, if the limitations will be exceeded.

(2) The limitations on the duration of the flight duty period are affected by three variables:

- (a) The average flight duration for the planned / flown flight(s)
- (b) The number of flights (planned / flown)
- (c) The time of day that the flight duty period begins (see CAR 700.19(2))

(3) First, the average flight time has to be determined (total flight time / number of flights). There are three tables:

- (a) average flight duration of less than 30 minutes (CAR 700.28(2);
- (b) average flight duration of 30 minutes to less than 50 minutes (CAR 700.28(3); and
- (c) average flight duration of 50 minutes or more (CAR 700.28(4).

(4) Calculate the average flight time (total flight time ÷ number of flights = average flight time). Select the appropriate table based on average flight time.

(5) The average flight time results from the flight planning for the flight duty period in question.

(6) Second, the number of flights to be flown is determined. As changes to the schedule are made or considered (i.e.: flights are added), the effect on the maximum flight duty period must be considered. An additional flight or flights may result in a reduction of the maximum flight duty period. If there is not sufficient time in the flight duty period remaining to operate an additional flight with the reduced flight duty period, the flight cannot be operated by the flight crew member.

(7) If the additional flight is calculated to be completed within the reduced flight duty period, it can be operated as planned.

(8) Flight time is defined in CARs and this definition is repeated in this Advisory Circular.

(9) When the flight crew member is acclimatized to the location where the flight duty period begins, the start time of the flight duty period is local time.

When the flight crew member is not acclimatized to the location where the flight duty period begins, the start time of the flight duty period is local time at the location where the flight crew member is acclimatized.

(10) Examples:

(a) A flight crew member is located in Halifax and is acclimatized to Atlantic Standard Time (AST). If this flight crew member begins a flight duty period in Vancouver at 07:00 Pacific Standard Time (PST), the start time of the flight duty period would be 11:00 (07:00 + four time zones = 11:00).

(b) A flight crew member is located in Calgary and is acclimatized to Mountain Standard Time (MST). If this flight crew member begins a flight duty period in Toronto at 07:00 Eastern Standard Time (EST), the start time of the flight duty period would be 05:00 (07:00 - 2 time zones = 05:00).

4.19 CAR 700.28(2) – Average Flight Duration of Less Than 30 Minutes

(1) Contains the table for the maximum flight duty period with an average flight duration of less than 30 minutes.

(a) Column 1 of the Table contains the start time of the flight duty period;

(b) Column 2 contains the maximum flight duty periods for 1 to 11 flights;

(c) Column 3 contains the maximum flight duty periods for 12 to 17 flights; and

(d) Column 4 contains the maximum flight duty periods for 18 or more flights.

(2) Select the appropriate column based on the number of flights planned.

(3) Then select the appropriate row containing the start time of the flight duty period.

(4) The intersection of this column and row contains the maximum flight duty period.

4.20 CAR 700.28(3) – Average Flight Duration of 30 minutes or More But Less Than 50 Minutes

(1) Contains the table for the maximum flight duty period with an average flight duration of 30 minutes or more but less than 50 minutes.

(a) Column 1 of the Table contains the start time of the flight duty period;

(b) Column 2 contains the maximum flight duty periods for 1 to 7 flights;

(c) Column 3 contains the maximum flight duty periods for 8 to 11 flights; and

(d) Column 4 contains the maximum flight duty periods for 12 or more flights.

(2) Select the appropriate column based on the number of flights planned.

(3) Then select the appropriate row containing the start time of the flight duty period.

(4) The intersection of this column and row contains the maximum flight duty period.

4.21 CAR 700.28(4) – Average Flight Duration of 50 Minutes or More

(1) Contains the table for the maximum flight duty period with an average flight duration of 50 minutes or more.

(a) Column 1 of the Table contains the start time of the flight duty period;

(b) Column 2 contains the maximum flight duty periods for 1 to 4 flights;

(c) Column 3 contains the maximum flight duty periods for 5 or 6 flights; and

(d) Column 4 contains the maximum flight duty periods for 7 or more flights.

(2) Select the appropriate column based on the number of flights planned.

(3) Then select the appropriate row containing the start time of the flight duty period.

(4) The intersection of this column and row contains the maximum flight duty period.

4.22 CAR 700.28(5) – Acclimatization

(1) This subsection describes how to determine if a flight crew member is acclimatized.

(2) General assumption: an air operator may assume that a flight crew member is acclimatized to the home base time zone unless previous duty would have acclimatized them to a different time zone.

(3) Only duty can acclimatize a flight crew member to another time zone (i.e., they have operated an aircraft or positioned to a new time zone and have remained at that location long enough to become acclimatized). However, if a flight crew member flies to a new location and then returns to the start location the next day, they will remain acclimatized to the start location (i.e., they did not spend enough time in the new location to become acclimated to the time at the new location).

(4) Generally, people acclimatize to a new time zone at a rate of one hour per 24 hours spent in the new time zone. If a person travels to a location three time zones away, after spending 72 hours in the new time zone they will be acclimatized to that location. The fact that a flight crew member may have travelled in any direction across time zones should make no difference to the rate of acclimatization.

(5) The regulation does not specifically address the switch from daylight to standard time or vice versa. It would be reasonable for the air operator to assume, on the first day of the time change, that the flight crew member is not acclimatized to the one-hour difference and apply that when determining the permitted flight duty period. On the second day following the time change, the flight crew member would be acclimatized.

(6) When calculating the flight duty period and rest period for a flight crew member, operators should use the local time to where the flight crew member is acclimatized rather than the local time of where the flight crew member is located.

4.23 CAR 700.28(5)(a) – Less than 4 Hours Difference

(1) Stipulates that when a flight crew member leaves a location where they are acclimatized and arrives in a new location with a time zone difference that is less than 4 time zones (less than four hours) from where they started, they will be considered acclimatized to the new location after spending 72 hours in that new location. The flight crew member must also receive the required rest periods during this 72-hour period.

(2) Example: A flight crew member departs on Monday morning from Vancouver for Toronto and will fly out of Toronto for six days. This is a difference of three time zones (three hours difference). If the flight crew member arrives in Toronto on Monday at 18:00 EST. This flight crew member will not be considered to be acclimatized in Toronto until Thursday at 18:00 EST (72 hours after arriving). For each flight duty period that may be assigned during this 72 hour period (on Tuesday, Wednesday, and Thursday) the local time in Vancouver is used to determine the start time of the flight duty period:

   (a) a reporting time of 07:00 EST would be a reporting time of 04:00 PST, so the row in the table to be used will contain 04:00 as the flight duty period start time.

   (b) a reporting time of 23:30 EST would be a reporting time of 20:30 PST, so the row in the table to be used will contain 20:30 as the flight duty period start time.

(3) On Friday, the flight crew member is acclimatized to Toronto, so the flight duty period start time is local time.

4.24 CAR 700.28(5)(b) – Difference of 4 hours or More

(1) Stipulates that when a flight crew member leaves a location where they are acclimatized and arrives in a new location with a time zone difference that is 4 or more time zones (4 hours difference or more) from where they started, they will be considered acclimatized to the new location after spending 96 hours in that new location. The flight crew member must also receive the required rest periods during this 96-hour period.

(2) In the examples below, local time is used. If that creates confusion due to changes between standard and daylight savings time, suggest using universal coordinated time (UTC) for all calculations and then convert back to local time.

(3) Example: A flight crew member departs on Monday morning from Vancouver for London, England and will fly out of London for three weeks. This is a difference of eight time zones (eight hours difference). Supposing that the flight crew member arrives in London on Tuesday at 11:00 Greenwich Mean Time (GMT). This flight crew member will not be considered to be acclimatized in London until Saturday at 11:00 GMT (96 hours after arriving). For each flight duty period that may be assigned during this 96 hour period (on Wednesday, Thursday, and Friday) the local time in Vancouver is used to determine the start time of the flight duty period:

- (a) a reporting time of 15:00 GMT would be a reporting time of 07:00 PST, so the row in the table to be used will contain 07:00 as the flight duty period start time.
- (b) a reporting time of 08:00 GMT would be a reporting time of 00:00 PST (midnight), so the row in the table to be used will contain 00:00 PST (midnight) as the flight duty period start time.

(4) On Saturday as of 11:00 GMT, the flight crew member is acclimatized to London, so the flight duty period start time is local time.

4.25 CAR 700.28(5)(c) – Daily Adjustment

(1) Stipulates that when a flight crew member leaves a location where they are acclimatized and arrives in a new location with a time zone difference, for each 24 hours that is spent in the new location the flight crew member's acclimatized time will adjust by one hour towards the new location's time zone.

(2) Example: A flight crew member departs on Monday morning from Vancouver for Toronto and will fly out of Toronto for six days. This is a difference of three time zones (three hours difference). Supposing that the flight crew member arrives in Toronto on Monday at 18:00 EST.

(3) If the flight crew member is assigned a flight duty on Tuesday morning (before 18:00 EST) the local time in Vancouver is used to determine the start time of the flight duty period:

- (a) a reporting time of 07:00 EST would be a reporting time of 04:00 PST, so the row in the Table to be used will contain 04:00 as the flight duty period start time.

(4) If the flight crew member is assigned a flight duty on Wednesday morning (before 18:00 EST) the flight crew member's acclimatized time will have changed by 1 hour in the direction of Toronto (moved 1 time zone to the East (MST): UTC -8 + 1 = UTC -7) is used to determine the start time of the flight duty period:

- (a) a reporting time of 07:00 EST would be a reporting time of 05:00 MST, so the row in the Table to be used will contain 05:00 as the flight duty period start time.

(5) If the flight crew member is assigned a flight duty on Thursday morning (before 18:00 EST) the flight crew member's acclimatized time will have changed by 2 hours in the direction of Toronto (moved 2 time zones to the East (CST): UTC -8 + 2 = UTC -6) is used to determine the start time of the flight duty period:

(a) a reporting time of 07:00 EST would be a reporting time of 06:00 CST, so the row in the Table to be used will contain 06:00 as the flight duty period start time.

(6) If the flight crew member is assigned a flight duty on Friday morning (before 18:00 EST) the flight crew member's acclimatized time will have changed by 3 hours in the direction of Toronto (moved 3 time zones to the East (EST): UTC -8 + 3 = UTC -5) is used to determine the start time of the flight duty period. The flight crew member is now acclimatized to Toronto, so the flight duty period start time is local time (EST).

4.26 CAR 700.28(6) – Positioning Flight(s) Not Counted as Flight(s)

(1) Stipulates that for subsections (2), (3), and (4) positioning flights are not considered a flight (i.e., they do not count towards the "number of flights" used in determining the column of the table to be used).

(2) For example, a flight crew member is required to position before a flight duty. Supposing that the average flight duration is greater than 50 minutes and four flights are planned. This means that the table in CAR 700.28(4) applies and that Column 2 of that table would be used (1 to 4 flights). The positioning flight would not be added to the total number of flights (i.e., Column 3 would not be used (5 or 6 flights).

4.27 CAR 700.28(7) – Time Zones

(1) Stipulates that for the purposes of subsection (5) Canada is considered to have 5 time zones:

(a) Pacific;

(b) Mountain;

(c) Central;

(d) Eastern; and

(e) Atlantic (the Atlantic time zone includes Newfoundland and Labrador)

(2) The time zones are defined for clarity of application.

4.28 CAR 700.28(8) – Beginning of Flight Duty Period on Standby

(1) Stipulates that the flight duty period begins when a flight crew member on standby reports for duty at the location designated by the air operator.

4.29 CAR 700.28(9) – Day VFR

(1) Stipulates that when a flight crew member operates all flights under day VFR, that the maximum flight duty period is determined from the table in this subsection.

(2) The reductions to available flight duty periods due to the average flight duration and number of flights do not apply to day VFR operations. If there is a mix of day VFR with IFR, or night flights then the appropriate table in subsection (2), (3), or (4) applies.

4.30 CAR 700.29(1) – Maximum Number of Hours of Work

(1) Tracking of the number of hours of work may commence with effect from the regulations coming into force and there is no requirement to track the previous hours of work of a flight crew member.

(2) "Duty time" is synonymous with hours of work and all duty time should be tracked. An air operator is not required to track the flight and duty times of another operator if a flight crew member is

working for more than one operator but that flight crew member shall not report for or accept a flight duty that might result in an exceedance of any flight and duty time limitations at any time.

(3) Requires that the total number of hours of work (duty time) assigned to flight crew members not exceed specified limitations. This refers to all hours of duty assigned to a flight crew member. Therefore, air operators are prohibited from assigning hours of duty to a flight crew member and flight crew members are prohibited from accepting a duty assignment, if the limitations will be exceeded. Hours of work are regarded as hard rules and should not be exceeded.

(4) In the context of a flight duty period, the hours of duty begins at the same moment that the flight duty period begins (see definition in CARs or this AC). The flight duty period ends when the aircraft engines are off or the rotors have stopped at the end of the flight but the hours of duty end when the flight crew member is released from all duty.

(5) Limitations: the flight crew member's number of hours of duty cannot exceed the 7 and 28-day limitations, which are tied to time free from duty options. Air operators intending to switch between options (c) and (d) below are to ensure that the conditions stated in each option are met:

- (a) 2,200 hours in any 365 consecutive days;
- (b) 192 hours in any 28 consecutive days;
- (c) 60 hours in any 7 consecutive days when provided with the following time free from duty:
  - (i) 1 single day free from duty which must occur entirely within the 168 consecutive hours stated, and
  - (ii) 4 single days free from duty which must occur entirely within the 672 consecutive hours stated; or
- (d) 70 hours in any 7 consecutive days if the air operator has provided 120 consecutive hours free from duty, including 5 consecutive local nights' rest, that occurs entirely within the 504 consecutive hours stated, and the following conditions are met:
  - (i) no assignment of early duty, late duty or night duty,
  - (ii) no assigned flight duty period greater than 12 hours, and
  - (iii) the maximum number of hours of duty is 24 hours in any consecutive 48 hours.

(6) The intent of this provision is for the air operator to comply with CAR 700.29(1)(a) and (b) and then either 700.29(1)(c) or (d)

4.31 Time Free from Duty

(1) During time free from duty, the flight crew member is not required to do anything for the air operator nor is the air operator permitted to demand that the flight crew member do something for the air operator.

(2) For example: the flight crew member is not obligated to answer the telephone, check the weather, flight plan, or be available for duty.

(3) **Option 1:**

- (a) 1 single day free from duty in the 168 consecutive hours preceding the end of the 168 consecutive hour period; and
- (b) 4 single days free from duty in any 28 consecutive days or 672 consecutive hours.

(4) **Option 2:**

- (a) 120 consecutive hours free from duty, including five consecutive local night's rest, in any 504 consecutive hours (5 consecutive days in any 21 consecutive days) and no assignment of:

(i) early duty, late duty or night duty;

(ii) a flight duty period greater than 12 hours; or

(iii) the maximum number of hours of duty is 24 hours in any 2 consecutive days

(5) Example: 60 hours in any 7 consecutive days and time free from duty, in accordance with paragraph 700.20(1) (c).

Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Daily Duty Hours	10	10	10	10	10	10	0	10
Cumulative Duty Hours	10	20	30	40	50	60	50	60
On or Free from Duty	on	on	on	on	on	on (until 22:30 to 00:30)	Single day free from duty	on (at 07:30 to 09:30)

(a) On day 7 the cumulative total duty hours becomes 50 (60 hours (day 6) – 10 hours (day 1) = 50 hours (days 2 through 8, 7 day total) and then on day 8 the single day free from duty has occurred (after 07:30 or 09:30) there are 10 hours of cumulative duty available.

4.32 CAR 700.29(2) – Switching Between Time Free From Duty Options

(1) In order to switch between the time free from duty options (from 700.29 (1)(c) to 700.29(1)(d) and vice versa) the air operator must provide the flight crew member with 120 consecutive hours free from duty, including five consecutive local night's rest, before making the switch.

4.33 CAR 700.29(3)(a) and (b) – Hours of Work - Reserve and Standby

(1) Stipulates that time spent as a flight crew member on reserve is counted at a rate of 33% of the time they are in a Reserve Availability Period towards the calculation of the maximum number of hours of duty limitations.

(2) Stipulates that time spent as a flight crew member on standby is counted at a rate of 100% towards the maximum number of hours of duty limitations.

4.34 CAR 700.36 – Home Base

(1) Requires that an air operator designate a home base for each of its flight crew members and there should be a degree of permanence with this designation (i.e. not changed on a daily / weekly / monthly basis).

(2) Home base is the location that the flight crew member normally commutes to in order to report for positioning or for a flight duty period and where the air operator is not responsible for the flight crew member's accommodation, or transportation to and from the reporting location. When the flight crew member is required to travel from the home base to another location to perform flight duties (i.e.: for a two week rotation) or other duties, this is positioning. Time spent positioning for flight duty, is regarded as a flight duty period, whereas positioning back to home base due to sickness is regarded as duty and both must be recorded as such.

(3) The air operator does not normally provide the flight crew member with suitable accommodation at home base however, the air operator may provide suitable accommodation with the agreement of the flight crew member.

(4) The local time at home base is the reference point to where the flight crew member is acclimatized when they first report for duty.

4.35 CAR 700.37 – Nutrition Break

(1) Requires that a flight crew member be provided with at least one 15-minute period every 6 hours within a flight duty period to eat and drink.

(2) The air operator may choose to provide the food and drink but should provide the opportunity to consume it. In many cases this could be during cruise (in an aircraft with two flight crew members) where workload permits one flight crew member to assume control and responsibility for the aircraft while the other flight crew member takes a nutrition break.

(3) The requirement to provide potable water is found in Part II s.125 of the *Canada Labour Code - Occupational Health and Safety*.

(4) For flight crews operating as single-pilots or on multiple short duration flights, the nutrition break should be provided on the ground between flights. On single-pilot aircraft, TCCA does not recommend that the pilot-in-command take a break from operating the aircraft in flight, for a nutrition break.

4.36 CAR 700.40(1) – Rest Period - General

(1) Stipulates the duration and timing of the rest period that an air operator must provide to a flight crew member.

(2) Following a flight duty period an air operator must provide the following rest period:

- (a) When a flight duty period ends at home base, either
  - (i) 12 hours; or 11 hours plus travel time to and from the place where the rest period is taken; or
  - (ii) if the air operator provides suitable accommodation, 10 hours in the suitable accommodation; and
- (b) When a flight duty period ends away from home base, 10 hours in the suitable accommodation.

(3) The first option at **home base** is 12 hours from the end of the flight duty period until the flight crew member could be required to report for the next flight duty period.

(4) The second option at **home base** is 11 hours at the location where the rest occurs providing that the total travel time between home base, the location where the rest occurs and back to home base does not exceed one hour.

(5) The third option at **home base** allows the air operator to provide suitable accommodation if the flight crew member agrees. This option is provided for air operators when sufficient time is not available between scheduled flight duty periods or to ensure the availability of flight crew. For example, a winter storm is forecast and a hotel room near the airport is provided to ensure the flight crew member arrives in time for the flight.

(6) When **away from home base**, the 10 hours rest period begins when the flight crew member arrives in the suitable accommodation or when the flight crew member has access to the suitable accommodation (i.e.: the flight crew member has their room key in hand and is, at most, a couple minutes from their room). This permits the flight crew member to either proceed to the room and

sleep or obtain a meal prior to sleeping. If there is a delay in accessing suitable accommodation, the flight crew member and the air operator should agree on the options available to increase the rest period, if required.

(7) The 10-hour rest period provides the opportunity for the flight crew member to obtain 8 hours of sleep and 2 hours for meals and personal hygiene.

(8) The air operator should take into account the availability of meals for their flight crew members. Where there is a restaurant located close to the suitable accommodation (and it is open for the flight crew member to use), it is reasonable to assume that meals will be obtainable during the 10 hour rest period. If there is no place to obtain a meal or the flight crew member must travel (and take significant time) to obtain a meal, the air operator should increase the duration of the rest period to permit the flight crew member to obtain a meal or provide the flight crew member with additional time prior to reporting for the next flight duty period in order to obtain a meal.

(9) The air operator should not interrupt a rest period. Where an air operator wishes to advise a flight crew member of a schedule change during a rest period, the air operator should do so in a passive manner – by sending a text or email or leaving a message with the hotel – so that the flight crew member will receive the message when they wake.

(10) If the time between the end of the last flight duty period and the beginning of the next is longer than the minimum required rest period, the air operator should not actively contact the flight crew member in order to avoid waking the flight crew member.

(11) This section should not be confused with CAR 700.52 which details the circumstances under which an air operator may disturb a flight crew member during a rest period to advise of a delayed reporting time.

(12) Rest periods may be increased in certain circumstances and a flowchart, which may help with understanding which provision applies, is contained in Appendix A to this Advisory Circular.

4.37 CAR 700.40(2) – Extended Duty Following Flight Duty Period

(1) Requires that when an air operator requires a flight crew member to continue working beyond the maximum flight duty period (that may include duty other than flight duty), that if this additional duty time exceeds the maximum flight duty period by 1 hour or more, the flight crew member must be provided with a rest period that is the longer of:

(a) The duration of the maximum flight duty period plus the amount of time worked beyond the maximum flight duty period; or

(b) The rest period required in subsection (1).

(2) Air operators should release flight crew members from duty as soon as possible following the end of the flight duty period.

(3) Examples: Following a 12-hour flight duty period where the maximum flight duty period was 13 hours, the flight crew member is required by the air operator to clean the aircraft for 2.5 hours. The total flight duty period for the flight crew member was 14.5 hours (12 hours + 2.5 hours). The required rest period for the flight crew member is now 14.5 hours.

(4) Following an 8-hour night time flight duty period, that ends at home base, where the maximum flight duty period permitted was 9 hours, the flight crew member is required by the air operator to clean the aircraft for 2.5 hours. The total flight duty period for the flight crew member was 10.5 hours (8.0 hours + 2.5 hours). As the normally required rest period for the flight crew member is 12 hours and the duration of the previous flight duty period is less than this (10.5 hours), the 12 hours rest period is required.

(5) Rest periods may be increased in certain circumstances and a flowchart, which may help with understanding which provision applies, is contained in Appendix A to this Advisory Circular.

4.38 CAR 700.40(3) – Determine Travel Time

(1) Requires that when an air operator provides a rest period of 11 hours plus travel time at home base (in subsection (1)), the air operator must have a means for determining the travel time.

(2) The determination of travel time should reflect reality.

4.39 CAR 700.40(4) – Notice of a Rest Period

(1) Requires that an air operator provide a flight crew member with advance notice of the rest period and its duration.

(2) The advance notice may be provided by any means agreeable to the operator and the flight crew member.

(3) Note: the timings and duration of a rest period are items that should be tracked by an air operator as referenced in this Advisory Circular and CAR 700.20.

4.40 CAR 700.41(1) – Rest Period - Disruptive Schedules

(1) Requires that an air operator provide a flight crew member with a local night's rest, in addition to the rest period required under section 700.40, between the following duty periods:

(a) Between the time when a late duty or night duty ends and an early duty begins; or

(b) Between the time when an early duty ends and a late duty or night duty begins.

Note: In this context, 'duty' means any work activity that meets the definition of duty.

4.41 CAR 700.41(2) – Non-Application of Disruptive Schedules

(1) Stipulates that the requirements in subsection (1) do not apply when there is more than 4 hours difference between local time where the flight crew member is located and the time at the last location where the flight crew member was acclimatized.

(2) These disruptive schedule provisions are not intended to apply when flight crews operate transoceanic flights.

4.42 CAR 700.42(1) – Rest Periods - Time Zone Differences- Additional Rest on Flights Ending Away From Home Base

(1) Requires that the air operator provide the flight crew member with additional rest due to time zone differences as follows:

(2) When a flight duty period ends away from home base at a location where the local time zone differs by:

(a) 4 hours from the time at the location where the flight duty period began, the rest period shall be a minimum of 11 consecutive hours in the suitable accommodation; or

(b) more than 4 hours from the time at the location where the flight duty period began, the rest period shall be a minimum of 14 consecutive hours in the suitable accommodation.

(3) When the time zone difference is less than 4 hours, the normal rest requirements apply (section 700.40).

(4) This subsection addresses the fatiguing effects of long haul flights (i.e., sleep disruption due to trans-meridian (East / West) travel). The greater the number of time zones that a flight crew member crosses, the longer the required rest period.

(5) This subsection addresses flights that end away from home base.

4.43 CAR 700.42(2) – Additional Rest on Return to Home Base

(1) Requires that the air operator provide the flight crew member with additional rest due to time zone differences when the flight duty period begins at a location that is in a time zone that is different from the time zone at home base:

(2) When a flight duty period ends at home base and the home base time zone differs by:

(a) 4 hours from the time at the location where the flight duty period began and the flight crew member has been away from home base for more than 36 consecutive hours, the rest period shall be a minimum of 13 consecutive hours;

(b) more than 4 hours but not more than 10 hours from the time at the location where the flight duty period began and the flight crew member has been away from home base for:

(i) less than or equal to 60 consecutive hours and the returning flight duty period does not encroach on the flight crew member‘s WOCL, the flight crew member shall be provided with a minimum of 1 local night‘s rest prior to the start of the next flight duty period; or,

(ii) more than 60 consecutive hours or the returning flight duty period encroaches upon the flight crew member‘s WOCL, the flight crew member shall be provided with a minimum of 2 local nights’ rest prior to the start of the next flight duty period.

(c) more than 10 hours from the time at the location where the flight duty period began and the flight crew member has been away from home base for:

(i) less than or equal to 60 consecutive hours, the flight crew member shall be provided with a minimum of 2 local nights’ rest prior to the start of the next flight duty period; or,

(ii) more than 60 consecutive hours, the flight crew member shall be provided with a minimum of three local nights’ rest prior to the start of the next flight duty period.

(3) This subsection addresses the return to home base rest requirements which are dependent on how long the flight crew member was away from home base; how many time zones away from home base and the return flight is during the flight crew member’s WOCL.

Note: Timing begins from the moment that the flight crew member leaves home base.

4.44 CAR 700.43(1) – Rest Period - Positioning

(1) Requires that if a flight crew member is required by the air operator to position following a flight duty period and the flight duty period and the positioning exceed the maximum flight duty period, then the air operator must provide a rest period before the beginning of the next flight duty period that is equal to the durations outlined below:

(a) If the maximum flight duty period is exceeded by 3 hours or less, the required rest period is equal to the number of hours of duty (flight duty period plus positioning time); or

(b) If the maximum flight duty period is exceeded by more than 3 hours, the required rest period is equal to the number of hours of duty plus the time in excess of the maximum flight duty period (flight duty period plus positioning time plus positioning time in excess of maximum flight duty period);

(2) This subsection addresses extended periods of wakefulness resulting from positioning – a flight duty period followed by positioning that is longer than the allowed maximum flight duty period.

(3) **Examples:** Following a 12-hour flight duty period where the maximum flight duty period was 13 hours, a flight crew member is required to position for 3.5 hours. The total duty period is 15.5 hours (12 + 3.5). The time in excess of the maximum flight duty period is 2.5 hours (15.5 – 13). The required rest period is 15.5 hours.

(4) Following a 12-hour flight duty period where the maximum flight duty period was 13 hours, a flight crew member is required to position for 6.5 hours. The total duty period is 18.5 hours (12 + 6.5). The time in excess of the maximum flight duty period is 5.5 hours (18.5 – 13). The required rest period is 18.5 + 5.5 = 24 hours.

(5) Note: where multiple rules may apply, the air operator should apply the provision that would result in the longest period of rest for the flight crew member.

(6) Rest periods may be increased in certain circumstances and a flowchart, which may help with understanding which provision applies, is contained in Appendix A to this Advisory Circular.

4.45 CAR 700.43(2) – Minimum Duration of Rest Period

(1) Stipulates that in spite of the calculation provided in (1), the rest period shall not be of a shorter duration than that required in subsection 700.40(1).

4.46 CAR 700.43(3) – Extended Positioning – Flight crew member Agreement

(1) Stipulates that the air operator must have the agreement of the flight crew member if their total duty period will exceed the maximum flight duty period by more than 3 hours when positioning is included.

(2) Notwithstanding the agreement of the flight crew member, the flight duty period may not be exceeded by more than 7 hours.

(3) For example: On a day when the maximum flight duty period would be 11 hours, a flight crew member completes a 10 hour flight duty period then is required to position for 3.5 hours (10.0 hours plus 3.5 hours = 13.5 hours). As this does not exceed the maximum flight duty period by more than 3 hours (13.5 hours minus 11.0 hours = 2.5 hours), flight crew member agreement to the extended positioning is not required.

4.47 CAR 700.43(4) – Rest Period following Positioning without being immediately assigned to a Flight Duty Period

(1) Requires that the air operator provide the flight crew member with a rest period following positioning that is not immediately followed by a flight duty assignment. The air operator is required to consider the positioning to be a flight duty period and assign a rest period that is appropriate following such an assignment (in accordance with section 700.40).

(2) For example: if an air operator needed to position a flight crew member from Toronto to Vancouver the day before a flight duty assignment, the air operator would need to ensure that the flight crew member would arrive in Vancouver and have sufficient time before the flight duty assignment to obtain the appropriate rest period – 10 hours in the suitable accommodation; or

(3) If the flight crew member was positioned from Toronto to Tokyo, the flight crew member would be provided with a rest period of a minimum of 14 hours following the positioning.

4.48 CAR 700.50(1) – Split Flight Duty Period

(1) Provides for increasing the maximum flight duty period found in section 700.28 when a flight crew member is provided with a break in suitable accommodation of at least 60 minutes during a flight duty period. The permitted increase in the maximum flight duty period is related to the time of day

when the break occurs. The maximum flight duty period may be increased by an amount of time equal to:

(a) 100% of the duration of the break provided during the hours of 24:00 to 05:59 at the location where flight crew member is acclimatized;

(b) 50% of the duration of the break provided during the hours of 06:00 to 23:59 at the location where flight crew member is acclimatized; or,

(c) In the case of short-term re-planning of a flight duty period after it as begun, due to unforeseen operational circumstances, 50% of the duration of the break provided.

4.49 CAR 700.50(2) – Calculation of Increase

(1) Stipulates that when calculating the duration of the increase to the maximum flight duty period, 45 minutes is first subtracted from the time spent in the suitable accommodation, and the difference is multiplied by 100% or 50% depending on the time of day.

(2) The 45 minutes accounts for the time required to:

(a) get ready for bed;

(b) fall asleep;

(c) wake up, overcome sleep inertia and get ready for duty.

(3) The minimum break duration of 60 minutes does not include any time spent in travelling to or from the suitable accommodation nor the 45 minutes stipulated in subsections (1 & 2) above. In the case of the minimum break of 60 minutes, the maximum flight duty period could be increased by 15 minutes (at 100%) or 7.5 minutes (at 50%). Although the break must be at least 60 minutes, the air operator may provide a longer break period.

4.50 CAR 700.50(3) – Use Limited to Three Consecutive Nights

(1) Stipulates that a flight crew member may have their flight duty period extended during a night duty using the Split Flight Duty Period provision, for a maximum of three consecutive night duties.

4.51 CAR 700.50(4) – Local Time

(1) Specifies that the times referred to in subsection (1) are the times at the location where the flight crew member is acclimatized.

4.52 CAR 700.50(5) – Split Flight Duty and On Reserve

(1) Stipulates that when a flight crew member on reserve is assigned to flight duty that includes split flight duty, the flight crew member's reserve duty period may be extended by two hours if a break is provided in accordance with this section. Following the break, there may not be more than two flights flown.

4.53 CAR 700.51(1) – Consecutive Night Duty Periods

(1) Requires that an air operator not assign more than three consecutive flight duty periods, if any part of those periods falls between 02:00 and 05:59 local time (which means acclimatized time), unless the flight crew member is provided with one local night's rest at the end of the third flight duty period.

4.54 CAR 700.51(2) – Conditions

(1) Stipulates that a flight crew member may be assigned more than three and up to five consecutive flight duty periods, even if any part of those periods falls between 02:00 and 05:59, if they are provided with:

(a) A three hour rest period in suitable accommodation during each flight duty period; and

(b) At the end of the last consecutive flight duty period, at least 56 consecutive hours free from duty.

(2) The rest periods and subsequent hours free from duty, which permit up to five consecutive flight duty periods, cannot be used to increase the duration of the flight duty period. These periods are used to overcome the fatiguing effect of the consecutive flight duty periods.

4.55 CAR 700.52(1) – Delayed Reporting Time

(1) Applies to situations where a flight crew member is advised of a delay in their reporting time before they have left their suitable accommodation to report for duty. In these cases, the flight duty period will be calculated starting from either the initial reporting time or the delayed reporting time, whichever results in the shorter period.

(2) For example, it applies when an event occurs during the rest period prior to the beginning of a flight duty period that will prevent the departure from occurring as planned (e.g., technical or weather related delays).

(3) The maximum flight duty period cannot be extended due to a delayed reporting time even if the flight crew member is reassigned to a different route or pairing unless CARs 700.52(2) is complied with and the appropriate rest period is provided as set out in CARs 700.52(3).

(4) Examples: Using the Maximum Flight Duty Period tables, if the initial reporting time was 06:00 where the number of 30-minute flights would be fewer than 11, the maximum flight duty period would be 12 hours. If the delayed reporting time became 09:00, the maximum flight duty period from the Maximum Flight Duty Period tables would be 13 hours. However, the shorter flight duty period is the one at 06:00; therefore, the maximum flight duty period would remain at 12 hours.

(5) Under the same circumstances, if the initial reporting time was 22:30 the maximum flight duty period would be 11 hours. If the delayed reporting time became 02:00, the maximum flight duty period from the Maximum Flight Duty Period tables would be 9 hours. However, the shorter flight duty period is the one at 02:00; therefore, the maximum flight duty period would remain at 9 hours.

4.56 CAR 700.52(2) – Delayed Reporting Time - When Does Flight Duty Period Begin

(1) Stipulates when the flight duty period begins during the use of a delayed reporting time. When the delayed reporting time is less than 4 hours the flight duty period begins at the delayed reporting time.

(2) When the delayed reporting time is 4 hours or more but less than 10 hours the flight duty period begins 4 hours after the initial reporting time.

(3) **Examples:** If the initial reporting time was 06:00 and the delayed reporting time became 09:00, the flight duty period would begin at 09:00.

(4) If the initial reporting time was 06:00 and the delayed reporting time became 12:00, the flight duty period would begin at 10:00.

4.57 CAR 700.52(3) – Delayed Reporting Time - 10 Hours or more

(1) A delayed reporting time of 10 hours or more may be considered a rest period if:

(a) The flight crew member is advised of the delayed reporting time prior to departing the suitable accommodation; and

(b) The air operator does not disturb the flight crew member before a mutually agreed time.

(2) If the delay is more than 10 hours, effectively the flight crew member is being assigned to a new flight duty period.

4.58 CAR 700.52(4) – Contacting Flight crew members

(1) Stipulates when an air operator may contact a flight crew member during the delay in subsection (3), unless they have mutually agreed upon another time to be contacted:

(a) When a flight crew member is in suitable accommodation, the air operator may contact the flight crew member within 30 minutes of the originally scheduled departure time from the suitable accommodation; or

(b) The air operator may contact the flight crew member during the 60-minute period before the originally scheduled reporting time.

(c) The air operator may choose option (a) or (b) if they need to contact a flight crew member.

(2) These criteria outline when the air operator can actively disturb the flight crew member (e.g., a phone call). Sending a message (passively, e.g. text or email) that does not disturb the flight crew member is permitted at any time.

(3) It is recommended that the flight crew member silence their phone (do not disturb) when going to sleep.

4.59 CAR 700.60(1) – Maximum Flight Duty Period — Augmented Flight Crew and Rest Facilities

(1) General: notwithstanding the maximum length of a flight duty period specified in CARs 700.28, a flight duty period may be extended to the maximum flight duty period set out in the table contained in CARs 700.60 (1) according to the assignment of additional flight crew members and available on-board rest facilities.

(2) **Class 1 rest facility** means a bunk or other horizontal surface located in an area that:

(a) is separate from the flight deck and passenger cabin;

(b) has devices to control temperature and light; and

(c) is subject to a minimal level of noise and other disturbances.

(3) To ensure the suitability of a rest facility, the SAE ARP 4101/3, Crew Rest Facilities, should be used in conjunction with ARP 4101, Flight Deck Layout and Facilities, for the design and installation of flight crew member rest facilities. The following SAE documents may also be useful and may be obtained for a fee from:

(a) SAE World Headquarters
400 Commonwealth Drive
Warrendale, PA 15096
1-877-606-7323 (U.S. and Canada)
1-724-776-4970 (International)
CustomerService@sae.org

(b) SAE ARP 1323, Type Measurements of Aircraft Interior Sound Pressure Levels during Cruise.

(c) SAE ARP 4245, Quantities for Description of the Acoustical Environment in the Interior of the Aircraft.

(4) **Class 2 rest facility** means a seat that allows for a horizontal sleeping position in an area that

(a) Is separated from passengers by a curtain or other means of separation that reduces light and sound;

(b) Is equipped with portable oxygen equipment; and

(c) Minimizes disturbances by passengers and flight crew members.

(d) A bunk that allows for a horizontal sleeping position but is not a seat and does not qualify as a Class 1 rest facility is regarded as a Class 2 rest facility

(5) **Class 3 rest facility** means a seat that reclines at least 40 degrees from vertical and that has leg and foot support.

(6) Stipulates the maximum flight duty period available when a flight is augmented with one or two additional flight crew members and a rest facility is provided. A rest facility is required to be provided for each additional flight crew member.

(7) With one additional flight crew member and a:

(a) Class 3 rest facility: the maximum flight duty period would be 14 hours;

(b) Class 2 rest facility: the maximum flight duty period would be 15 hours; or

(c) Class 1 rest facility: the maximum flight duty period would be 15 hours

(8) With two additional flight crew members and a:

(a) Class 3 rest facility: the maximum flight duty period would be 15.25 hours;

(b) Class 2 rest facility: the maximum flight duty period would be 16.50 hours; or

(c) Class 1 rest facility: the maximum flight duty period would be 18 hours.

4.60 CAR 700.60(2) – Restrictions

(1) Stipulates conditions around the use of augmented flight crews and restricts the use on the extended flight duty periods in subsection (2 & 3) to three or fewer flights.

(2) For a flight duty period that includes one flight, all flight crew members are provided in-flight rest in the rest facility during the flight. This rest time should be equally distributed among the flight crew members.

(3) For a flight duty period that includes two or three flights, the flight crew member who will be landing the aircraft on the final landing (manipulating the flight controls) will receive two consecutive hours of in-flight rest in the rest facility. The other flight crew members will receive 90 consecutive minutes of in-flight rest in the rest facility.

(4) An air operator who requires the use of augmented flight crew to extend the maximum flight duty period by a small amount may submit a Fatigue Risk Management System Safety Case for consideration.

4.61 CAR 700.60(3) – Flight Duty Period – Rest Facility

(1) Stipulates that a flight crew member's flight duty period includes all of the time spent in the rest facility.

4.62 CAR 700.60(4) – Augmented Flight Crew Unity

(1) Stipulates that the flight duty period for all flight crew members who are part of an augmented flight crew, shall begin and end at the same location.

(2) In cases where more than one flight is planned, this subsection allows for additional flight crew member(s) to join the flight crew after the first flight if it is planned to be less than 105 minutes of flight time. All flight crew members must end their flight duty period at the same location.

(3) Example 1: The flight duty period begins in Toronto for all flight crew members and it ends in Abu Dhabi for all flight crew members.

(4) Example 2: The flight duty period begins in Toronto, has a stop in Montreal, continues and ends in Abu Dhabi for all flight crew members. Assuming the flight time from Toronto to Montreal is less than 105 minutes, the additional flight crew member(s) may join the flight in Montreal.

4.63 CAR 700.60(5) – Augmenting Flight Crew on Flight Deck

(1) Requires that at least one additional flight crew member must be on the flight deck for all take-offs and landings.

(2) This subsection does not apply when additional flight crew members join the flight after the first flight (as outlined in subsection (4).

4.64 CAR 700.60(6) – Determining Time Available for In-Flight Rest

(1) Stipulates that the air operator use the planned period of the flight between the time at which the aircraft reaches 10,000 feet above aerodrome elevation and 15 minutes prior to the planned beginning of the descent, in order to determine the time available for in-flight rest, as per subsection (3).

4.65 CAR 700.60(7) – Increased Rest Period

(1) Requires that, following a flight duty period, which was extended by the assignment of additional flight crew members and provision of in-flight rest facilities, the rest period be the longer duration of the following:

- (a) The duration of the duty period that was just completed; or
- (b) 16 hours when the flight duty period ends at home base; or
- (c) 14 hours in the suitable accommodation.

(2) Rest periods may be increased in certain circumstances and a flowchart, which may help with understanding which provision applies, is contained in Appendix A to this Advisory Circular.

4.66 CAR 700.61 – Long-range Flights

(1) Stipulates restrictions to flight duty periods involving long-range flights with augmented flight crew members. Air operators are prohibited from assigning flight duty periods to a flight crew member and flight crew members are prohibited from accepting a flight duty period assignment, when a flight duty period occurs during the flight crew member’s window of circadian low, and includes a second flight that follows a flight with a planned duration of more than 7 hours flight time.

(2) In order to operate a flight longer than 7 hours followed by an additional flight (with the same flight crew) that infringes on the flight crew member’s window of circadian low, a fatigue risk management system would be required.

(3) Air operators are reminded that all activities that meet the definition of 'duty' (including, but not limited to 'positioning' and 'deadheading') are to be included in the calculation of a flight crew member's duty period.

4.67 CAR 700.62(1) – Ultra Long-range Flights – Maximum Flight Duty Period

(1) Prohibits air operators from assigning flight duty periods of more than 18 hours to a flight crew member and flight crew members are prohibited from accepting such assignments.

4.68 CAR 700.62(2) – Ultra Long-range Flights - Maximum Flight Time

(1) Prohibits the air operator from assigning a flight crew member to a flight with a scheduled flight time of more than 16 hours, and prohibits flight crew members from accepting such assignments.

(2) In order to operate an ultra-long-range flight (i.e., flight of more than 16 hours) a fatigue risk management system would be required.

4.69 CAR 700.63 – Unforeseen Operational Circumstances — Flight Duty Period and Rest Period

(1) A flight duty period may only be extended beyond the maximum due to unforeseen operational circumstances.

(2) In order to be considered an unforeseen operational circumstance the event has to occur within 60 minutes of the beginning of, or during the flight duty period.

(3) Example: Adverse weather conditions that were forecast within 60 minutes prior to the start or encountered during the flight duty period and caused an extension beyond the maximum, would qualify as an unforeseen operational circumstance.

(4) An event that occurs more than 60 minutes prior to the flight crew member reporting for a flight duty period is not unforeseen and it may not be extended as a result.

(5) After the flight duty period has ended (at engines off or rotors stopped), delays caused by airport operational issues or unannounced inspections by customs, immigration, law enforcement or the National Aviation Authority are to be recorded as duty time (hours of work), as applicable, and are not unforeseen operational circumstances.

(6) A Reserve Duty Period cannot be extended for unforeseen operational circumstances.

4.70 CAR 700.63(1) – Authority of Pilot-in-Command

(1) If the pilot-in-command is of the opinion that an unforeseen operational circumstance that occurred within 60 minutes of the beginning of the flight duty period, that could lead to a level of fatigue that may jeopardize the safe operation of the flight; and

(2) After consulting all crew members on their levels of fatigue, the pilot-in-command may:

- (a) Reduce a flight crew member's flight duty period;
- (b) Extend a flight crew member's flight duty period in excess of the maximum flight duty period as follows:
  - (i) by one hour, in the case of a single-pilot operation;
  - (ii) by two hours, in the case of two pilot flight crews;
  - (iii) by three hours, in the case of augmented flight crews where there is one flight in the scheduled flight duty period;

(iv) by two hours, in the case of augmented flight crews where there are two or three flights during the scheduled flight duty period; or

(c) Increase the duration of the flight crew member's rest period.

(3) The air operator should provide guidance on the use of this authority for their pilots-in-command in their company documentation. The authority to reduce the flight duty period compliments the obligation of flight crew members to declare themselves no longer fit for duty, if that is the case and end the flight duty period as soon as possible.

(4) The authority to extend or reduce a flight duty period due to unforeseen operational circumstances rests solely with the pilot-in-command and not the air operator.

4.71 CAR 700.63(2) – Exceeding the Extended Flight Duty Period due to further Unforeseen Operational Circumstances

(1) Addresses the instance where a pilot-in-command has extended the flight duty period due to unforeseen operational circumstances and after take-off on the final flight, another unforeseen operational circumstance is encountered. In these cases, the pilot-in-command may, despite the previous subsection, continue the flight to the destination aerodrome or to an alternate aerodrome.

(2) Example: Assuming a flight crew of two and a maximum flight duty period for the day of 12 hours. The day's flights are planned to be completed in 11 hours. An unforeseen operational circumstance that occurred within 60 minutes of the beginning of the flight duty period, results in a 2.5-hour delay. Assuming that the pilot-in-command decides to apply the available extension in subsection (1), the maximum flight duty period will be exceeded by 1.5 hours (with 2 hours permitted). Due to weather at the destination (i.e., a second unforeseen operation circumstance), the final flight diverts to an alternate aerodrome that is 1 hour of flight time away. This will result in a 2.5-hour exceedance of the maximum flight duty period which is permitted by subsection (2).

4.72 CAR 700.63(3) – Increased Rest Period

(1) Stipulates that the rest period after a flight duty period that is extended due to unforeseen operational circumstances, is increased by an amount of time that is at least equal to the extension of the flight duty period.

(2) Example: If the flight duty period is extended beyond the maximum by 1.5 hours, the next rest period will increase in duration by 1.5 hours.

(3) Rest periods may be increased in certain circumstances and a flowchart, which may help with understanding which provision applies, is contained in Appendix A to this Advisory Circular.

4.73 CAR 700.63(4) – Requirement to Notify Air Operator

(1) The pilot-in-command is responsible for ensuring that the air operator is notified of any change in the flight duty period or rest period made under this section. The method by which the notification is made is not specified.

(2) Once notified, the air operator can provide the increased rest period and schedule the flight crew member appropriately (see section 700.21).

4.74 CAR 700.64(1) – Unforeseen Operational Circumstances — Split Flight Duty

(1) In the event of an unforeseen operational circumstance that occurs **after the beginning of the flight duty period**, an air operator may change a flight crew member's flight duty period to include a split flight duty (per CARs 700.50) if the pilot-in-command agrees to the change. The

change may only occur if it is made prior to the beginning of the scheduled break on the ground and the scheduled break starts after the decision is made to split the flight duty. Any time spent waiting for a decision to be made to introduce a split flight duty does not count towards the scheduled break.

(2) Example: after the first of several planned flights, there is a mechanical problem with the aircraft. Initially it is thought that it will, be fixed in 30 minutes. After one hour it is determined that it will take 4 hours to repair. At this point a split flight duty could be introduced. The first hour on the ground is not part of the scheduled break. However, the break can be introduced into the anticipated 4-hour delay (after the first one-hour delay).

4.75 CAR 700.64 (2) – Introduction of Split Flight Duty Period

(1) Requires that the pilot-in-command not agree with the introduction of a split flight duty period if, after consulting all crew members on their levels of fatigue, is of the opinion that the split flight duty period could lead to levels of fatigue that may jeopardize the safe operation of the flight.

4.76 CAR 700.70 – Flight crew member on Reserve

(1) This section establishes the parameters for the assignment of a flight crew member on reserve.

(2) A flight crew member's flight duty period can be changed within the reserve availability period as long as the notification periods and the number of hours the flight duty period can be changed as detailed in this section are met.

4.77 CAR 700.70(1) – Notification to a Flight crew member

(1) Details the notice an air operator must provide to a flight crew member before being assigned as a flight crew member on reserve. The notice must include the location where it will take place and when the reserve availability period will begin and end. The notice must be provided to the flight crew member no later than:

- (a) 12 hours before the beginning of the reserve availability period, if no part of that period occurs during the flight crew member's window of circadian low; or
- (b) 32 hours before the beginning of the reserve availability period, if any part of that period occurs during the flight crew member's window of circadian low.
- (c) Reserved.

4.78 CAR 700.70(2) – Changing Start Time of Reserve

(1) Stipulates restrictions placed on the air operator with respect to changes that may be made to the start time of the reserve availability period in the notice provided to the flight crew member in subsection (1). The air operator may not change the start time of the reserve availability period by more than:

- (a) 2 hours before, or 4 hours after, the start time that was communicated to the flight crew member in subsection (1); or
- (b) 8 hours before or after the start time that was communicated to the flight crew member in subsection (1) in any period of 168 consecutive hours, unless the flight crew member is provided with two consecutive days free from duty within that 168 consecutive hour period.
- (c) Note: The notice periods specified in CAR 700.70 (1) still apply when an air operator wishes to change the start time of a flight crew member's reserve availability period.

(d) Note: The number of hours of change within a 168 consecutive hour period is regarded as cumulative. Example: If an RAP is changed by two hours today and then changed back to the original start time tomorrow, if it is within the 168 consecutive hour period, this is regarded as an accumulation of 4 hours of change.

4.79 CAR 700.70(3) – Start Time of Reserve Crossing 02:00

(1) Requires that if an air operator changes the start time of a reserve availability period to a time after 02:00, the air operator must provide the flight crew member with two consecutive days free from duty prior to commencing the next reserve availability period.

4.80 CAR 700.70(4) – Changing Start Time of Reserve - Entering Window of Circadian Low

(1) Requires that the air operator provide the flight crew member with at least 24 hours' notice prior to changing the start of the flight crew member's reserve availability period, if the start time falls within the flight crew member's window of circadian low.

(2) This subsection applies if the start time of the flight crew member's reserve availability period is changed to the period between 02:00 and 05:59 at the location where the flight crew member is acclimatized.

4.81 CAR 700.70(5) – Duration of Reserve Availability Period

(1) Stipulates the maximum duration of the reserve availability period. The air operator may assign a flight crew member to a reserve availability period that is a maximum of 14 consecutive hours in duration.

4.82 CAR 700.70(6) – Required Rest Period

(1) Stipulates the minimum duration of the required rest period between reserve availability periods. The air operator is required to provide the flight crew member on reserve with a rest period of at least 10 consecutive hours between reserve availability periods.

4.83 CAR 700.70(7) – Reserve Duty Period Limitations

(1) Stipulates limits for the duration of the reserve duty period.

(2) This is the total time from the start of the reserve availability period to the end of an assigned flight duty period.

(3) The maximum reserve duty period must not exceed:

(a) 18 consecutive hours, if the period begins between 02:00 and 17:59;

(b) 17 consecutive hours, if the period begins between 18:00 and 18:59;

(c) 16 consecutive hours, if the period begins between19:00 and 20:59;

(d) 15 consecutive hours, if the period begins between 21:00 and 22:59; and

(e) 14 consecutive hours, if the period begins between 23:00 and 01:59.

4.84 CAR 700.70(8) – Reserve Duty Period Limitations - Augmented Flight Crews

(1) In the case of a flight crew member on reserve who is assigned to a flight duty period with an augmented flight crew, the maximum reserve duty period in subsection (7) may be increased as follows:

(a) To a maximum of 20 hours, if the flight crew is augmented with one additional flight crew member and a class 1 or class 2 rest facility is provided for the flight crew member;

(b) To a maximum of 22 hours, when the reserve availability period begins between 21:00 and 03:00 at the location where the flight crew member is acclimatized, if the flight crew is augmented with two additional flight crew members and a class 1 or a class 2 rest facility is provided for each of the additional flight crew members; or

(c) To a maximum of 26 hours, when the reserve availability period begins before 21:00 or after 03:00 at the location where the flight crew member is acclimatized, if the flight crew is augmented with two additional flight crew members and a class 1 rest facility is provided for each of the additional flight crew members.

4.85 CAR 700.70(9) – Extended Duration of Reserve Duty Period

(1) Permits the reserve duty period in subsection (7) to be increased if the reserve duty period starts between 02:00 and 05:59 at the location where the flight crew member is acclimatized and the air operator does not contact the flight crew member during that period (between 02:00 and 05:59). The reserve duty period may be increased by a maximum of 2 hours or 50% of the reserve availability period that occurred between 02:00 and 05:59, whichever is shorter.

(2) Example: The reserve duty period starts at 04:00 and the air operator does not contact the flight crew member before 06:00. The reserve duty period can be extended by 1 hour (50% of the two hours that occurred within 02:00 and 05:59) as per subsection (7). This will result in an extended reserve availability period of 19 hours (18 hours plus 1 hour = 19 hours). In this case, the reserve duty period could end no later than 23:00 (04:00 plus 19 hours).

Note: CAR 700.70 (9) lines 1 & 5 incorrectly reference the reserve availability period when it should reference the reserve duty period. The CAR will be amended in due course.

4.86 CAR 700.70(10) – Limitation: Reserve Duty Period / Flight Duty Period

(1) Stipulates that an air operator not assign a flight crew member to a flight duty period that exceeds, whichever is shorter of the following:

(a) The maximum reserve duty period specified in this section; or

(b) The maximum flight duty period specified in the maximum flight duty period table (section 700.28).

(2) Examples: The reserve availability period starts at 05:00 and ends no later than 19:00 (14 hours maximum). The reserve duty period would begin at 05:00 and be a maximum of 18 hours. The reserve duty period must end no later than 23:00 (05:00 plus 18 hours).

(3) If the flight crew member is assigned to a flight duty period that starts at 08:00 – the maximum flight duty period would be 13 hours (1 to 4 flights of 50 minutes or more). The flight duty period must end no later than 21:00. In this case, the flight duty period is limiting.

(4) This subsection also stipulates that under certain conditions, the air operator may assign a flight duty period that will exceed the reserve duty period if:

(a) The flight crew member is provided with at least 24 hours' notice of the assignment prior to the beginning of the flight duty period;

(b) This notice is not provided between 22:30 and 07:30, which allows for an uninterrupted opportunity to obtain a local night's rest; and

(c) No duties are assigned to the flight crew member between the time that the notice is provided until the beginning of the flight duty period.

(5) Example: In the second example above, the air operator wants to assign the flight crew member to a flight duty period that starts at 18:00 and use the maximum flight duty period available of 12 hours (1 to 4 flights of 50 minutes or more). The flight duty period would begin at 18:00 and end the next day at 06:00. If the air operator advises the flight crew member prior to 18:00 today, tomorrow they may begin this flight duty period at 18:00 – this is permitted (as long as the two other conditions are followed).

4.87 Transitioning from "On Reserve" to a Flight Duty Assignment to back "On Reserve"

(1) Example: In the case of a flight crew member who has been assigned to a period of on reserve (a week or month) The scheduled reserve availability period starts at 05:00 and ends no later than 19:00 (14 hours maximum). When the flight crew member is assigned to a flight duty period – a start at 08:00 and a finish at 21:00 – and receives the required rest period – assuming 12 hours at home base. The rest period would end at 09:00 the next day. The air operator may return the flight crew member to "on reserve" status as was previously scheduled. At 09:00, the reserve availability period would recommence but it would end as previously scheduled at 19:00. The scheduled start – 05:00 – would be used for calculating the maximum reserve duty period.

(2) Otherwise the notification requirements of 700.70(1) would have to be applied.

4.88 CAR 700.71(1) – Flight crew member on Standby

(1) For flight crew members on standby, an air operator is required to provide them a place to wait that is protected from the elements, that has a place to sit and has access to food and drink and, if possible, is not open to the public.

4.89 CAR 700.71(2) – Rest Period

(1) Requires that an air operator provide the following rest periods to a flight crew member on standby when they are not assigned to a flight duty:

(a) At home base, either

(i) 12 hours or 11 hours plus travel time to and from the flight crew member's lodging; or

(ii) 10 hours in suitable accommodation provided by the air operator; or

(b) Away from home base, 10 hours in suitable accommodation.

4.90 CAR 700.72 – Controlled Rest on Flight Deck

(1) Controlled rest on the flight deck is an opportunity for a flight crew member to obtain some rest during a flight duty period. As there are no guarantees that it will be possible during a flight duty period to obtain controlled rest, a flight crew member must report for duty, fit for duty.

(2) Flight crew members must be fit for duty when they report for duty in accordance with CAR 700.26.

4.91 CAR 700.72(1) – Restrictions

(1) Stipulates restrictions for the use of controlled rest taken on the flight deck;

(a) The controlled rest is 45 minutes or less;

(b) The rest must occur during the cruise portion of the flight and be completed at least 30 minutes prior to the scheduled beginning of the descent.

(c) Only one flight crew member can rest at any given time;

(d) At least two flight crew members remain on the flight deck.

4.92 CAR 700.72(2) – Conditions

(1) Stipulates conditions for beginning a period of controlled rest taken on a flight deck:

(a) The flight crew member taking the rest will transfer their duties to a flight crew member who is not taking rest;

(b) The flight crew members will review the status of the flight, taking note of specific tasks that the non-resting flight crew member will have to complete during the rest;

(c) The flight crew members will review the wake up criteria; and

(d) Advise other flight crew members of the start and end times of the rest. The intent being that the other flight crew members will check at the end of the rest period to ensure that the flight crew members are awake.

4.93 CAR 700.72(3) – Alertness

(1) Stipulates that the flight crew member who was resting will not begin duties, and no other flight crew member will transfer any duties to them, until 15 minutes after the end of the rest.

(2) This ensures that the flight crew member is fully awake and prepared to take on duties.

4.94 CAR 700.72(4) – Operational Briefing

(1) Requires that when a flight crew member returns to duty, the non-resting flight crew member provide them with an operational briefing. The operational briefing will ensure that the flight crew member that just returned to duty is aware of anything that happened during their rest period.

5.0 CAR PART VII, DIVISION IV – FLIGHT CREW MEMBER FATIGUE MANAGEMENT - MEDICAL EVACUATION FLIGHTS

5.1 CAR 700.100 – Application and Interpretation

(1) Air operators and flight crew members operating medical evacuation flights are required to comply with the requirements of this Division.

(2) This Division does not apply to an air operator or a flight crew member who operate an aircraft under Subpart 2 of Part 7.

(3) Flights to position an aircraft before or after a medical evacuation flight are considered medical evacuation flights.

(4) An aircraft dispatched primarily for the carriage of cargo, even if it is carrying human blood products, organs or medical supplies is not a medical evacuation flight.

5.2 CAR 700.101(1) – Monitoring System and Records

(1) Requires an air operator to have a system that monitors the flight times, flight duty periods, and rest periods of each of its flight crew members. The air operator must document the system in its company operations manual (e.g., how the system works and how it is used).

(2) The purpose of the monitoring system is to ensure that air operators do not assign flight crew members to duty (and flight crew members will not accept any duty) that will exceed any limitations and that flight crew members are provided with the required rest periods and time free from duty.

(3) Where an air operator also employs their flight crew members in flight operations other than medical evacuation flights, the air operator (and flight crew member) are required to account for all duty hours (hours of work) whether they are worked under this Division or not.

5.3 CAR 700.101(2) – Requirement to Advise Air Operator

(1) If a flight crew member, or any other person, becomes aware that a flight duty assignment will result in the maximum flight duty period (as per section 700.103) being exceeded or a maximum flight time (as per section 700.103) limitation being exceed, that person or flight crew member is required to advise the air operator, as soon as possible.

5.4 CAR 700.102 – Fitness for Duty

5.5 CAR 700.102(1) – Unfit for Duty – At Reporting Time

(1) Requires that if a flight crew member reports for a flight duty period and advises the air operator that they are not fit for duty due to fatigue, the air operator shall not allow the flight crew member to begin a flight duty period.

(2) As a flight duty period begins when the flight crew member reports for duty, the intent is that the air operator, after being advised by the flight crew member that they are not fit for duty, will immediately remove the flight crew member from flight duty – the air operator will not permit the flight crew member to continue to work.

(3) If the flight crew member realizes that they are not fit for duty prior to reporting, they should advise the air operator by the most expeditious means.

(4) For example: if the flight crew member is assigned to a flight duty period of 12 hours with 6 flights and the flight crew member advises that they are not fit for this duty but would be fit for the next 5 hours and 2 flights. Reassigning the flight crew member to the first two flights only and finding a replacement flight crew member for the remainder may provide the air operator with some flexibility. However, if the assigned flight duty period is 15 hours as part of an augmented flight crew, the flight crew member is either fit or not fit for duty.

(5) When a flight crew member reports that they are not fit for duty due to fatigue, the air operator should investigate the reasons that fatigue has resulted in a flight crew member not being fit for duty. For example, is it the schedule that the air operator assigned, the schedule the flight crew member has chosen or other individual factors.

5.6 CAR 700.102(2) – Unfit for Duty – During Flight Duty Period

(1) Requires that if during a flight duty period a flight crew member becomes fatigued to an extent that they are no longer fit for duty, the flight crew member shall advise all other flight crew members and the air operator as soon as possible.

(2) In cases where a flight crew member becomes no longer fit for duty during a flight duty period, the flight crew member would advise the other flight crew member(s) and the air operator. If the aircraft were on the ground when this occurs, the flight crew member who is no longer fit for duty would be removed from the flight duty.

(3) If the flight crew member becomes no longer fit for duty during a flight with a flight crew of two, the other flight crew member would have to manage the situation and safely land the aircraft.

(4) If the flight crew member becomes no longer fit for duty during a flight with additional flight crew members onboard (augmented flights - 3 or 4 flight crew in total), one of the additional flight crew members should replace the flight crew member who is no longer fit for duty.

5.7 CAR 700.102(3) – Unfit for Duty – During Flight Duty Period (Single-Pilot)

(1) Sets out the steps to be taken for the case described in subsection (2), but for an aircraft operated by a single-pilot.

(2) In the case where a single-pilot becomes no longer fit for duty later during a flight duty period, the flight crew member is required to, as soon as possible, remove himself or herself from the flight duty and advise the air operator.

(3) If the single-pilot becomes fatigued to the extent that they are not fit for duty while the aircraft is in flight, the single-pilot is expected to land the aircraft safely, remove themselves from the flight duty, and advise the air operator.

5.8 CAR 700.102(4) – Unfit for Duty – Limitation Will Be Exceeded

(1) Requires any person or flight crew member who becomes aware that a flight duty assignment will result in the maximum flight time or maximum flight duty period being exceeded, advise the air operator as soon as possible.

5.9 CAR 700.102(5) – Unfit for Duty – Rest Period or Time Free From Duty Not Provided

(1) Requires any person or flight crew member who becomes aware that a required rest period or time free from duty has not been provided to a flight crew member, advise the air operator as soon as possible.

5.10 CAR 700.103 – Maximum Flight Time

5.11 CAR 700.103(1) – Limitations

(1) Requires that flight times flown by flight crew members not exceed specified limitations. This refers to all flight times flown by a flight crew member. Therefore, air operators are prohibited from assigning flight time to a flight crew member and flight crew members are prohibited from accepting a flight time assignment, if the flight crew member's total flight time exceeds the limitations set out in this subsection.

(2) The flight crew members total flight time is not to exceed:

- (a) 40 hours in any 7 consecutive days if the flight is conducted under Subpart 704 or 705 and if the aircraft is not a helicopter;
- (b) 60 hours in any 7 consecutive days if the flight is conducted under Subpart 703 or the aircraft is a helicopter;
- (c) 120 hours in any 30 consecutive days or, in the case of a flight crew member on call, 100 hours in any 30 consecutive days;
- (d) 300 hours in any 90 consecutive days;
- (e) 1,200 hours in any 365 consecutive days; or
- (f) 8 hours in any 24 consecutive hours, in the case of a single-pilot operation.

(3) These limitations are cumulative totals over the specified period. To determine how many flight hours are available to be flown today, the total flight time flown in the previous 6 days, 29 days, 89 days, and 364 days (not including today) must be determined. The total number of hours flown

in in the previous 6 days, 29 days, 89 days, and 364 days is subtracted from the limitations above and the difference is flight time available to be flown today.

(4) Examples:

(a) in the previous 29 days, the flight crew member has flown 109.4 hours. The available flight time today is: 120 – 109.4 = 10.6 hours;

(b) in the previous 89 days, the flight crew member has flown 290.2 hours. The available flight time today is: 300 – 290.2 = 9.8 hours; and

(c) in the previous 364 days, the flight crew member has flown 1186.7 hours. The available flight time today is 1,200 – 1186.7 = 13.3 hours.

(5) In the case of a single-pilot operation, the 8 hours in any consecutive 24 hours includes all flight time the flight crew member flies in that period and applies when the flight crew member is acting as a single-pilot.

(6) For example, a flight crew member is part of a 2-person flight crew and flies 5 hours of flight time during the first part of a flight duty period. This flight crew member could then act as a single-pilot for an additional 3 hours of flight time during that period of 24 consecutive hours (looking back the previous 24 hours).

(7) Conversely, the flight crew member could act as a single-pilot for up to 8 hours of flight time and then become part of a 2-person flight crew for the remainder of the available flight duty period. The additional flight hours are not as part of single-pilot operation, so there is no flight time limitation on them. The next day, the 24-hour look back would have to be applied to determine if the single-pilot has any time available to fly.

5.12 CAR 700.103(2) – Flight Time Inclusions

(1) A flight crew member's flight time includes:

(a) the flight time accumulated for all other flight operations; and,

(b) the total flight time of a flight with an augmented flight crew.

5.13 CAR 700.104 – Maximum Flight Duty Period

(1) Requires that assigned flight duty periods not exceed 14 hours. Therefore, air operators are prohibited from assigning flight duty periods to a flight crew member and flight crew members are prohibited from accepting a flight duty period assignment, if the 14-hour limitation will be exceeded.

5.14 CAR 700.116 – Rest Period – General

(1) Stipulates the duration and timing of the rest period that an air operator must provide to a flight crew member at the end of a flight duty period.

(2) Following a flight duty period an air operator must provide a flight crew member with a rest period of 10 hours plus the travel time to and from the location where the rest is taken;

(3) Example: if the travel time is 2 hours to and from (each way) the suitable accommodation or flight crew member's lodging, then the minimum time between the start and end of the rest period would be 14 hours (10 hours + 2 hours + 2 hours = 14 hours).

(4) The 10-hour rest period provides the opportunity for the flight crew member to obtain 8 hours of sleep and time for meals and personal hygiene.

(5) The air operator may not interrupt a rest period. Where an air operator wishes to advise a flight crew member of schedule change during a rest period, the air operator may do so in a passive manner – send a text or email, leave a message with the hotel – so that the flight crew member will receive the message when they wake.

(6) If the time between the end of the last flight duty period and the beginning of the next is longer than the minimum required rest period, the air operator should not actively contact the flight crew member in order to avoid waking the flight crew member.

5.15 CAR 700.116(2) – Notice of a Rest Period

(1) Requires that an air operator provide a flight crew member with advance notice of when the rest periods begins and when it will end.

(2) The advance notice may be provided by any means and the advance notice period commences when the communication is sent.

5.16 CAR 700.117 – Rest Period – Positioning

(1) Requires that if a flight crew member is required by the air operator to position following a flight duty period, then the required rest period be must be increased by at least one half of the time spent travelling in excess of the flight crew member's maximum duty period (i.e.,14 hours).

(2) Example: A flight crew member completes a 12-hour flight duty period and then positions for a further 7 hours. The total period is 19 hours, which exceeds the maximum flight duty period by 5 hours. The rest period would have to be increased by half of this 5-hour period. The rest period would become 10 hours + 2.5 hours = 12.5 hours plus travel time to and from the location where the rest period occurs.

5.17 CAR 700.118 – Split Flight Duty

5.18 CAR 700.118(1) – Extension to Flight Duty Period

(1) Provides for extending the maximum flight duty period found in section 700.104 by one-half the length of the rest period, to a maximum of three hours, when a flight crew member is provided with a rest period of at least 4 consecutive hours in suitable accommodation during a flight duty period.

(2) The air operator must provide the flight crew member with notice of the extension of the flight duty period, before the beginning of the period.

(3) The air operator must not interrupt the flight crew member's rest period.

5.19 CAR 700.118(2) – Increase to Rest Period

(1) The subsequent rest period following a split flight duty period shall be increased in duration by an amount equal to the length of the extension of the flight duty period.

(2) Therefore, a 2-hour extension to the flight duty period requires a rest period of 12 hours plus travel time.

5.20 CAR 700.119 – Time Free From Duty

5.21 CAR 700.119(1) – Requirements

(1) During time free from duty, the flight crew member is not required to do any duty for the air operator nor is the air operator permitted to demand that the flight crew member do any duty for the air operator.

(2) For example, the flight crew member is not obligated to, for example, but not limited to: answer the telephone, check the weather, flight plan, or be available.

(3) During time free from duty a flight crew member is not permitted to be a “flight crew member on call”, a “flight crew member on reserve”, or a “flight crew member on standby”;

(4) The air operator is required to provide a flight crew member, the two following time free from duty:

(a) At least 36 consecutive hours in 7 days; and

(b) At least 3 consecutive days in 17 days;

(5) In order to switch between the time free from duty options (from 700.29 (c) to 700.29 (d) and vice versa) the air operator must provide the flight crew member with 120 consecutive hours free from duty, including five consecutive local night’s rest, before making the switch.

5.22 CAR 700.119(2) – Notice of Time Free From Duty

(1) Requires that an air operator provide a flight crew member with advance notice of when a period of time free from duty begins and when it will end.

(2) The advance notice may be provided by any means and the advanced notice period commences when the notification is provided.

5.23 CAR 700.120 – Consecutive Flight Duty Periods

(1) Requirement for the air operator to provide a flight crew member with at least 24 hours free from duty following three consecutive flight duty periods that are greater than 12 consecutive hours in length.

(2) When a flight crew member is provided with at least 24 consecutive hours free from duty in between each flight duty period, they are not considered consecutive.

(3) Examples:

(a) 13 hour FDP – 11 hour rest period - 13 hour FDP – 11 hour rest period - 13 hour FDP – 24 hours free from duty required;

(b) 13 hour FDP – 11 hour rest period - 13 hour FDP – 24 hour rest period - 13 hour FDP – 24 hours free from duty required;

(c) 13 hour FDP – 24-hour rest period - 13 hour FDP – 24-hour rest period - 13 hour FDP – – 24-hour rest period - 13 hour FDP – etc.…

5.24 CAR 700.121 – Delayed Reporting Time

(1) Applies to situations where schedule changes occur during the hours immediately prior to the reporting time of a flight crew member. For example, an event occurs during the rest period prior to the beginning of a flight duty period that will prevent the departure from occurring as planned.

(2) For example, it does not apply to a schedule change that will occur in two days.

(3) Sets criteria for determining when the flight crew member's flight duty period will begin following a delayed reporting time. A delayed reporting time occurs when the air operator advises the flight crew member of the delay prior to them departing their suitable accommodation / rest facility.

(4) If the start time of the flight duty period is delayed by more than 3 hours, the new delayed start of the flight duty period will be the original time plus 3 hours.

(5) If the delay is 3 hours or less, the start time of the flight duty period is when the flight crew member reports for the flight duty.

(6) Examples:

(a) The flight duty period was scheduled to begin at 08:00 but is delayed until 12:00. The flight duty period will begin at 11:00;

(b) The flight duty period was scheduled to begin at 08:00 but is delayed until 10:00. The flight duty period will begin at 10:00, when the flight crew member reports for duty.

5.25 CAR 700.131 – Maximum Flight Duty Period – Augmented Flight Crew and Rest Facility

(1) The definitions for the different classes of rest facilities are found in this subsection.

(2) **Class 1 rest facility** means a bunk or other horizontal surface located in an area:

(a) That is separate from the flight deck and passenger cabin;

(b) That is temperature-controlled;

(c) In which the flight crew member can control light; and

(d) That minimizes the level of noise and exposure to other disturbances.

(3) To ensure the suitability of a rest facility, the SAE ARP 4101/3, Crew Rest Facilities, should be used in conjunction with ARP 4101, Flight Deck Layout and Facilities, for the design and installation of flight crew member rest facilities. The following SAE documents may also be useful and may be obtained for a fee from:

(a) SAE World Headquarters
400 Commonwealth Drive
Warrendale, PA 15096
1-877-606-7323 (U.S. and Canada)
1-724-776-4970 (International)
CustomerService@sae.org

(b) SAE ARP 1323, Type Measurements of Aircraft Interior Sound Pressure Levels during Cruise.

(c) SAE ARP 4245, Quantities for Description of the Acoustical Environment in the Interior of the Aircraft.

(4) **Class 2 rest facility** means a seat that allows for a horizontal sleeping position in an area that

(a) Is separated from passengers by a curtain or other covering that provides some darkness and sound mitigation;

(b) Is equipped with portable oxygen equipment; and

(c) Minimizes disturbances by passengers and flight crew members.

(d) A bunk that allows for a horizontal sleeping position but is not a seat and does not qualify as a Class 1 rest facility is regarded as a Class 2 rest facility

(5) For the purpose of this Division, a flight deck observer seat is considered to be a rest facility.

5.26 CAR 700.131(1) – Limitations

(1) Stipulates the maximum flight duty period available when a flight is augmented with additional flight crew members and is dependent on the class of rest facility provided. If the flight crew is augmented with more than one additional flight crew member, a rest facility is required to be provided for each additional flight crew member. If two different classes of rest facilities are provided, the maximum flight duty period is the one associated with the lower class rest facility (the lesser value flight duty period).

(2) With at least one additional flight crew member and a:

(a) a flight deck observer seat: the maximum flight duty period would be 15 hours;

(b) Class 2 rest facility: the maximum flight duty period would be 17 hours; or

(c) Class 1 rest facility: the maximum flight duty period would be 20 hours.

5.27 CAR 700.131(2) – Number of Flights Restriction

(1) Stipulates that augmented flight crews and the extended flight duty periods may not be used if there are more than three flights flown.

5.28 CAR 700.131(3) – Flight Time

(1) Stipulates that all flight time while part of an augmented flight crew counts as flight time for the individual flight crew members. The time spent in the rest facility counts as flight duty time.

5.29 CAR 700.131(4) – Increased Rest Period

(1) Requires that, following an extended flight duty period in accordance with this section, the rest period will be equal to the duration of the duty period that was just completed.

(2) Example: flight duty period of 17 hours (extended flight duty period) – 14 hours (maximum flight duty period) = 3 hours. Therefore, the rest period is increased by 3 hours (Rest period = 10 hours + 3 hours = 13 hours plus travel time).

5.30 CAR 700.132 – Long-range Flights

5.31 CAR 700.132(1) – Restrictions

(1) This provision does not apply to flights conducted entirely within Northern Domestic Airspace.

(2) When a flight, or series of flights, crosses more than four one-hour time zones from the point of departure, that series of flights is restricted to a maximum of 3 flights;

(3) The subsequent rest period shall be at least of equal to the length of the flight duty period;

(4) Example: a flight crosses 10 time zones and the flight duty period is 13.5 hours in duration. The required rest period shall be 13.5 hours not including travel time to and from the suitable accommodation.

5.32 CAR 700.132(2) – Number of Flights Restriction

(1) If the flight that crosses more than four one-hour time zones includes a transoceanic flight, only one more flight may be flown following the transoceanic flight. This restriction does not include one unscheduled technical stop.

5.33 CAR 700.133 – Unforeseen Operational Circumstances

(1) A flight duty period may only be extended beyond the maximum due to unforeseen operational circumstances.

(2) In order to be considered an unforeseen operational circumstance the event has to occur within 60 minutes of the beginning of, or during the flight duty period.

(3) Example: Adverse weather conditions that were forecast within 60 minutes prior to the start or encountered during the flight duty period and caused an extension beyond the maximum, would qualify as an unforeseen operational circumstance.

(4) An event that occurs more than 60 minutes prior to the flight crew member reporting for a flight duty period is not unforeseen and it may not be extended as a result.

(5) After the flight duty period has ended (at engines off or rotors stopped), delays caused by airport operational issues or unannounced inspections by customs, immigration, law enforcement or the National Aviation Authority are to be recorded as duty time (hours of work), as applicable, and are not unforeseen operational circumstances.

(6) A Reserve Duty Period cannot be extended for unforeseen operational circumstances.

5.34 CAR 700.133(1) – Authority of Pilot-in-Command

(1) Only the pilot-in-command may extend the flight duty period or exceed a flight time limitation, because of an unforeseen operational circumstance, after consulting all crew members on their level of fatigue.

(2) Note: The pilot-in-command always has the authority to declare himself or herself or the flight crew unfit for duty and not extend the flight duty period.

(3) The air operator should provide guidance on the use of this authority for their pilots-in-command in their company documentation.

(4) As other flight crew members may be present to perform safety related duties, their levels of fatigue need to be considered.

(5) The authority to extend a flight duty period or exceed a flight time limitation due to unforeseen operational circumstances rests solely with the pilot-in-command not the air operator. The pilot-in-command is not obligated to extend a flight duty period or exceed a flight time limitation due to unforeseen operational circumstances.

5.35 CAR 700.133(2) – Permitted Extension and Exceedance

(1) The pilot-in-command may extend the maximum flight duty period by a maximum of 3 hours.

(2) The pilot-in-command may exceed the maximum flight time by a maximum of 3 hours.

(3) The pilot-in-command shall notify the air operator of the length of the extension and the reason for it.

(4) The subsequent rest period must be increased by the amount of the extension to the flight duty period.

5.36 CAR 700.133(3) – Record Keeping

(1) The air operator is required to keep records of the notification provided under subsection (2) (the length of the extension and the reasons for it) for a period of 24 months following the day the pilot-in-command provides the notice to the air operator.

(2) The pilot-in-command is responsible for ensuring that the air operator is notified of any change in the flight duty period, flight time or rest period made under this section. The method by which the notification is made is not specified.

5.37 CAR 700.134 – Flight crew member on Reserve

Note: The options of "flight crew member on standby" and "flight crew member on call" are also available for the scheduling of flight crew members.

5.38 CAR 700.134(1) – Reserve Options

(1) Requires that an air operator provides each flight crew member on reserve with a rest period of at least 10 consecutive hours in any 24 consecutive hours if the air operator:

(a) Provides the flight crew member with 24 hours' advance notice of the start time and duration of the rest period;

(b) Provide the flight crew member with at least 10 hours' notice of the start time and duration of the rest period and the air operator is not permitted to assign any duty to the flight crew member during this 10 hour rest period; or

(c) Does not assign a flight duty period to the flight crew member and does not interrupt the flight crew member's rest period between 22:00 and 06:00 local time.

(2) The rest period would be at least 10 hours in duration and include the period between 22:00 and 06:00.

5.39 CAR 700.134(2) – Shifting Start Time of Rest Period

(1) Once the start time of the rest period is established per 700.134(1), the start of the next rest period cannot be changed by more than 3 hours from the previous start time or by more than a total of eight hours in any seven consecutive days.

(2) The total number of hours that the start time may be shifted in any seven consecutive days is 8 hours. This 8-hour restriction is simply the total number of hours of shifting that can occur within 7 days.

5.40 CAR 700.134(3) – Rest Period Not Provided

(1) If the air operator is not able to provide the flight crew member with the rest period per 700.134 (1), and the flight crew member is notified to report for a flight duty or the reporting time is between 22:00 and 06:00 local time:

(a) The maximum flight duty period is restricted to 10 hours; and

(b) The subsequent rest period is increased by one-half of the length of the preceding flight duty period;

(2) Example: if the flight duty period was the maximum of 10 hours, the rest period would be 15 hours not including travel time to and from the suitable accommodation.

5.41 CAR 700.135 – Controlled Rest on Flight Deck

(1) Controlled rest on the flight deck is an opportunity for a flight crew member to obtain some rest during a flight duty period. As there are no guarantees that it will be possible during a flight duty period to obtain controlled rest, a flight crew member must report for duty only when fit for duty in accordance with section 700.26.

5.42 CAR 700.135(1) – Restrictions

(1) Stipulates restrictions for the use of controlled rest on the flight deck;

(a) The controlled rest may not be in excess of 45 minutes;

(b) The rest must occur during the cruise portion of the flight and be completed at least 30 minutes prior to descent.

(c) Only one flight crew member can rest at any given time;

(d) All flight crew members will remain on the flight deck during the rest.

5.43 CAR 700.135(2) – Conditions

(1) Stipulates conditions for beginning a period of controlled rest taken on a flight deck:

(a) The flight crew member taking the rest will transfer their duties to a flight crew member who is not taking rest;

(b) The flight crew members will review the status of the flight, taking note of specific tasks that the non-resting flight crew member will have to complete during the rest;

(c) The flight crew members will review the wake up criteria; and

(d) Advise other flight crew members of the start and end times of the rest. The intent being that the other flight crew members will check at the end of the rest time to ensure that the flight crew members are awake.

5.44 CAR 700.135 (3) – Alertness

(1) Stipulates that the flight crew member who was resting will not begin duties, and no other flight crew member will transfer any duties to them, until 15 minutes after the end of the rest.

(2) This ensures that the flight crew member is fully awake and prepared to take on duties.

5.45 CAR 700.135(4) – Operational Briefing

(1) Requires that when a flight crew member returns to duty that the non-resting flight crew member provides them with an operational briefing. The operational briefing will ensure that the flight crew member that just returned to duty is aware of anything that happened during their rest period.

6.0 FATIGUE MANAGEMENT TRAINING PROGRAM

6.1 CAR 703.98 / 704.115 / 705.124 – New Subsection (4)

(1) **Subsection (4)** - Requires air operators to provide fatigue management training to all flight crew members that contains the following elements:

(a) personal fatigue management strategies relating to

(i) sleep hygiene,

(ii) lifestyle, exercise and diet, and

(iii) the consumption of alcohol and drugs;

(b) the impact of fatigue on aviation safety;

(c) sleep requirements and the science relating to fatigue;

(d) the causes and consequences of fatigue;

(e) how to recognize fatigue in themselves and in others;

(f) sleep disorders, their impact on safety, and treatment options; and

(g) human and organizational factors that may cause fatigue, including;

(i) sleep quality and duration,

(ii) the impact of shift work and overtime,

(iii) circadian rhythm, and

(iv) the effects of changes in time zones.

(2) Two sources of information on the elements above are:

(a) **TP 14573 - Fatigue Risk Management System for the Canadian Aviation Industry - Fatigue Management Strategies for Employees** (http://www.tc.gc.ca/eng/civilaviation/publications/TP14573-6039.htm).

(b) A presentation on ***Fatigue Risk Management for Employees*** on the Transport Canada website (http://www.tc.gc.ca/eng/civilaviation/standards/standards-3919.htm)

7.0 INFORMATION MANAGEMENT

(1) Not applicable.

8.0 DOCUMENT HISTORY

(1) Not applicable.

9.0 CONTACT US

For more information, please contact:

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If you have suggestions for amending this document, please submit them to the email address above.

Robert Sincennes
Director, Standards
Civil Aviation

Appendix A — Flowchart For Increased Rest Periods

Feedback received by TCCA to date has shown some misunderstandings and opportunities to offer interpretations. This list is not definitive and interpretations may change as this regulatory reform matures in the corporate understanding.