

CIVIL AVIATION AUTHORITY, PAKISTAN

AIR NAVIGATION ORDER

NO. : 91.0012
Date : 7th Apr., 2011
Issue : Five

**FLIGHT TIME, FLIGHT DUTY PERIODS, DUTY PERIOD AND REST PERIODS
FOR FATIGUE MANAGEMENT- FLIGHT AND CABIN CREW**

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1. AUTHORITY

- 1.1 This Air Navigation Order (ANO) is issued under Rule 201, 202 & 206 of the Civil Aviation Rules 1994 (CARs 94) by the Director-General of the Civil Aviation Authority (CAA) in pursuance of the powers vested in him under Rule-4 of CARs 94.
- 1.2 An Operator shall establish flight time and duty period limitations and a rest scheme that shall enable it to manage the fatigue of all its flight and cabin crew members. This scheme shall comply with the regulations prescribed in this ANO, and shall be included in the Operations Manual.
- 1.3 This ANO makes it obligatory on all Operators to ensure that all operations are conducted in conformity with fatigue management covered hereafter.

2. PURPOSE

- 2.1 Flying loads body and mind with stress and strain. Depending on the type of aircraft and the type of work involved, the strain to body and mind varies. The primary issues governing fatigue and alertness on the flight deck are the amount of sleep/rest put in before subjecting the body and mind to strain; duration of work; frequency of work; phase of the sleep/wake cycle (i.e. circadian rhythm); the nature of flying and the number of crew member involved in the function and their individual competence. In a single day, a flight crew on international sectors, during the course of work may have to cross a number of time zones resulting in additional strain on the body. Moreover, modern jet aircraft flying at very high altitudes at rarified atmosphere also contributes to additional strain and consequent fatigue.
- 2.2 Unlike other materials, Human body has inbuilt capacity to recover from the effect of strain and consequent fatigue. The natural recourse to recovery from fatigue is through proper and adequate rest and sleep.
- 2.3 It is also an accepted fact that the aviation industry requires 24-hour activities to meet operational demands. Flight crew must be available to support 24-hour-a-day operation to meet the industry demand. Therefore shift work, night work; irregular/unpredictable work schedules will continue to be common components of functioning in aviation industry.
- 2.4 ICAO while recognizing the effect of fatigue on performance has recommended Contracting States to establish regulations specifying the limitations applicable to the flight time, flight duty period and rest period for flight crew members. Further it requires that these provisos should ensure that fatigue occurring either in a flight or successive flights or accumulated over a period of time due to these and other tasks do not endanger the safety of a flight.

Even though there is no absolute or perfect solution to the demands of duty and rest scheduling in aviation but with these as guiding principles, all the Contracting States have established regulations for Flight Duty Time, Flight Time and Rest period.
- 2.5 Flight time, flight duty period, duty period limitations and rest requirements are established for the purpose of ensuring that the flight crew and the cabin crew members are performing at an adequate level of alertness for safe flight operations.

- 2.6 This ANO is based upon scientific principles and knowledge, where available, with the aim of ensuring that crew members are performing at an adequate level of alertness and will provide safeguards against both, transient fatigue and cumulative fatigue.

3. SCOPE

- 3.1 For the purpose of managing fatigue, these regulations are established under the Standards and Recommended Practices of ICAO Annex 6. This ANO provides limitations on flight time, flight duty period, duty period and rest requirements with regards to variables which are likely to influence flight and cabin crew member alertness (e.g., allowable flight hours, duty and flight duty periods, and minimum rest periods) that may be applied when flight and cabin crew rosters are planned.
- 3.2 This ANO is applicable to:
- All AOC holders;
 - Flight crew members;
 - Cabin crew members.

4. DEFINITIONS

- 4.1 Augmented flight crew: A flight crew that comprises more than the minimum number required to operate the aircraft and in which each flight crew member can leave their assigned post and be replaced by another appropriately qualified flight crew member for the purpose of in-flight rest;

- 4.2 Crew Compliment: It is defined as follows:

a)	Single Crew	<ul style="list-style-type: none"> ➤ In the case of Flight Crew, it is: <ul style="list-style-type: none"> • Minimum number of Flight crew for the type, as specified in the Approved Operations Manual / AFM ➤ In the case of Cabin Crew, it is: <ul style="list-style-type: none"> • Minimum number of Cabin Crew required as specified in the Approved Operations Manual
b)	Multiple Crew	<ul style="list-style-type: none"> ➤ In the case of Flight Crew, it is: <ul style="list-style-type: none"> • Single pilot aircraft -- 2 Captains • Two pilot aircraft -- 2 Captains+ 1 First Officer • Three crew aircraft -- 2 Captains + 1 First Officer + 2 Ft. Engrs. ➤ In the case of Cabin Crew, it is: <ul style="list-style-type: none"> • Any additional cabin crew more than the minimum required for the type/ configuration of aircraft, as approved
c)	Double Crew	<ul style="list-style-type: none"> ➤ In the case of Flight Crew, it is: <ul style="list-style-type: none"> • Single pilot aircraft ---2 Captains • Two pilot aircraft --- 2 Captains + 2 First Officer • Three Crew aircraft --- 2 Captains + 2 First Officer + 2 Ft. Engrs. ➤ In the case of Cabin Crew, it is: <ul style="list-style-type: none"> • Twice the number of minimum cabin crew required for the type/ configuration of aircraft, as approved

- 4.3 Cabin crew member: A crew member who performs, in the interest of safety of passengers, duties assigned by the Operator or the Pilot-in-Command of the aircraft, but who shall not act as flight crew member;
- 4.4 Crew member: A person assigned by an Operator to duty on an aircraft during a flight duty period;
- 4.5 Calendar Day: 24 hours period commencing at 0000 hr. local time.
- 4.6 Cruise relief pilot: A flight crew member who is assigned to perform pilot tasks during cruise flight, to allow the Pilot-in-Command or a Co-pilot to obtain planned rest.(qualifications are defined in ANO 91-0024);

- 4.7 Deadhead Time: A time that a non-operating crew member spends in positioning from place to place as a passenger at the behest of the Operator.
- 4.8 Duty: Any task that flight or cabin crew members are required by the Operator to perform, including, for example, flight duty, administrative work, training, and positioning;
- 4.9 Duty period: A period, which starts when flight or cabin crew members are required by an Operator to report for or to commence a duty and ends when that person is free from all duties;

Any continuous period throughout, which a crew member is required by an operator to be on duty, whether on ground or in the air. Where a crew member is required by an operator to be available for duty for two or more periods separated by an interval of less than 12 hours, (10 Hours for Charter, Aerial Work and Flying Schools below weight category of 5700 kgs) the period shall be deemed continuous starting when the first of the period begins and finishing when the last period ends.

- 4.10 Flight crew member: A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;
- 4.11 Flight duty period: A period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member;
- 4.12 Flight Time
 - 4.12.1 Flight time – aircrafts: The total time from the moment an aircraft first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight;

Note.- ‘Flight time’ as here defined is synonymous with the term ‘block to block’ time or “chock to chock” time in general usage which is measured from the time an aircraft first moves for the purpose of taking off until it finally stops at the end of the flight.
 - 4.12.2 Flight Time – helicopters: The total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of flight, and the rotor blade are stopped.
- 4.13 Flight relief seat: A comfortable, fully reclining seat, separated from the flight deck and possibly screened from pax equipped with a call device, supplemental oxygen, and with degree of privacy;
- 4.14 Fatigue: A physiological state of reduced mental or physical performance capabilities resulting from sleep loss or extended wakefulness and/or physical activity that can impair a crew member’s alertness and ability to safely operate an aircraft or perform safety related duties;
- 4.15 Home base: The location nominated by the Operator to the crew member from where the crew member normally starts and ends a duty period or a series of duty periods;
- 4.16 Local day: A 24 hour period commencing at 00:00 hours local time;
- 4.17 Local night: A period of 8 hours falling between 22:00 hours and 06:00 hours local time;
- 4.18 Neighbouring Countries: Neighbouring countries will be those countries where the standard local time differs from the Pakistan Standard Time (PST) by maximum of two hrs. or where the single flight time to destination is not more than four hours, whichever is more restrictive.
- 4.19 Operator: A person, organisation, or enterprise engaged in or offering to engage in an aircraft operation;

- 4.20 Positioning: The transferring of a non-operating crew member from place to place as a passenger at the behest of the Operator;
Note: 'Positioning' is synonymous with the term 'Deadheading'.
- 4.21 Reporting time: The time at which crew members are required by an Operator to report for duty;
- 4.22 Rest period: A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties;
- 4.23 Roster: A list provided by an Operator of the times when a crew member is required to undertake duties;
Note: 'Roster' is synonymous with 'Schedule', 'Line of Time', 'Pattern' and 'Rotation'.
- 4.24 Standby: A defined period of time during which a flight or cabin crew member is required by the Operator to be available to receive an assignment for a specific duty without an intervening rest period;
- 4.25 Split Duty: A flight duty period, which consists of two duties separated by a break.

Break: A period free of all duties, but less than minimum rest period.
- 4.26 Suitable Accommodation: A quiet, ventilated and comfortable place with a bed and not open to public;
- 4.27 Unforeseen operational circumstance: An unplanned event, such as unforecast weather, equipment malfunction, or air traffic delay that is beyond the control of the Operator.

5. SIMULATOR TRAINING AND AIRCRAFT FLYING

- 5.1 Whenever a crew member flies any simulator either on check or training flight or as an instructor / training captain / examiner, all the time spent in simulator including "pre" and "post" briefing shall count towards flight duty time. For purpose of FDTL, minimum time for "post" and "pre" flight briefing shall be taken as one hour.

Note: If a crew member flies an aircraft after simulator, flight duty time shall be counted from the reporting time at the simulator.

6. RESPONSIBILITIES

- 6.1 Responsibility of the Civil Aviation Authority
- 6.1.1 The objective of any prescriptive limitations for fatigue management regulations is to ensure that flight and cabin crew members remain sufficiently alert so that they can operate to a satisfactory level of performance and safety under all circumstances. The fundamental principle is for every flight and cabin crew member to be adequately rested when he/she begins a flight duty period, and whilst flying be sufficiently alert to operate to a satisfactory level of performance and safety in all normal and abnormal situations.
- 6.1.2 Issuance of this ANO complies with the abovementioned responsibility. Continued surveillance obligation is fulfilled by PCAA through surveillance activities on all AOC holders to verify compliance.
- 6.2 Operator's Responsibility
- 6.2.1 It shall be responsibility of the accountable manager to ensure the implementation, monitoring strict adherence of this ANO and prompt reporting of any exceedance thereof. It shall also be responsibility of crew member equally to ensure adherence proviso this ANO requirement.
- 6.2.2 An Operator shall establish flight time and duty period limitations and a rest scheme that enables it to manage the fatigue of all its flight and cabin crew members. This

scheme shall comply with the regulations established in this ANO, and shall be included in the Operations Manual.

- 6.2.3 Operators shall reflect in their Operations Manuals those elements of this ANO that are appropriate to the operations they undertake. If operations are planned that cannot be managed within the limitations as published in Operations Manual, a variation may be requested. In this case, and before a variation is approved, an Operator shall demonstrate to the PCAA that the variation provides an equivalent level of safety and that objections on grounds of safety are taken into account.
 - 6.2.4 Duty rosters/programmes shall be prepared and published sufficiently in advance to provide flight and cabin crew members the opportunity to plan adequate rest. Consideration should be given to the cumulative effects of undertaking long duty hours interspersed with minimum rest, and of avoiding rosters that result in the serious disruption of an established pattern of working and sleeping. Rosters should cover a period of at least 15 days for scheduled operations and atleast 12 hours for non-scheduled operations.
 - 6.2.5 Flights shall be planned to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the flight and turn-around times, and the nature of the operation. Minimum rest periods needed to provide adequate rest should be based upon the actual operation.
 - 6.2.6 In order to avoid any detriment to a flight or cabin crew member's performance, opportunities to consume a meal must be arranged when the flight duty period exceeds 06 hours for scheduled operations.
 - 6.2.7 The Operator should nominate a home base for each flight and cabin crew member, from where the flight and cabin crew member will normally start and end a duty period or a series of duty periods. The home base should be assigned with a degree of permanence.
 - 6.2.8 The Operator shall not require a crew member to operate an aircraft if it is known or suspected that limitations provided herein and in the Operations Manual are likely to exceed or the crew member is fatigued to the extent that the safety of flight may be adversely affected.
- 6.3 Flight and Cabin Crew Members' Responsibility
- 6.3.1 Flight / Cabin Crew Member shall not operate an aircraft when he or she knows or suspects that limitations provided herein and in Operations Manual are likely to exceed or he/she is fatigued or feels unfit to the extent that the safety of flight may be adversely affected.
 - 6.3.2 Flight / Cabin Crew Members should make best use of the facilities and opportunities that are provided for rest and for the consumption of meals, and should plan and use rest periods to ensure that they are fully rested.

7. DUTY PERIOD, FLIGHT DUTY PERIOD AND FLIGHT TIME

7.1 Duty Period

This limitation is meant to be for a period, which starts when flight or cabin crew members are required by an Operator to report for or to commence a duty and ends when that person is free from all duties.

- 7.1.1 These duties include, but are not limited to: pre-flight preparation; conduct of the flight (whether or not this is commercial air transport); postflight actions; training given or received (classroom, flight simulator or aircraft); rostered office/management time; and positioning.
- 7.1.2 Each Operator is required to include in their Operations Manual, the maximum duty period for flight and cabin crew members:

- a) In a week (7 consecutive days);
- b) In a calendar month, 30 consecutive days;
- c) In 365 consecutive days – 12 months.

7.2 Maximum flight time and maximum flight duty period

7.2.1 Maximum flight time is defined as the time from 'blocks Off' to 'blocks On' and maximum flight duty period is defined as a period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member.

7.2.2 Maximum flight time and maximum flight duty periods applicable to operations by flight and cabin crew members shall be as follows:

a)	Flight Crew Compliment- Aircraft weight category above 5700 Kgs.	Flight time	Flight duty period
	(i) Single crew compliment		
	• Two crew cockpit	09 hrs.	12 hrs.
	• Three crew cockpit	10 hrs.	13 hrs.
	(ii) Multiple crew compliment		
	• Two crew cockpit	11 hrs.	13hrs.
	• Three crew cockpit	12 hrs.	15hrs.
	(iii) Double crew	16 hrs	18 hrs
b)	Flight Crew Compliment- Aircraft weight category below 5700 Kgs.	Flight time	Flight duty period
	(i) Agricultural spray	04 hrs.	09 hrs.
	(ii) Flying School, Aerial Work Operation below 1500 feet above ground level (AGL)		
	A) Without air-conditioning	04 hrs.	09 hrs.
	B) With air-conditioning	5.5 hrs.	12 hrs.
	(iii) Charter, Flying School, Aerial Work Operations above 1500 feet above ground level (AGL)		
	A) Single Pilot	06 hrs	09 hrs.
	B) Two or more Pilots	08 hrs.	12 hrs.
c)	Cabin Crew Compliment	Flight time	Flight duty period
	(i) Single crew	12 hrs.	16 hrs.
	(ii) Multiple crew (additional 50% to single crew compliment)	14 hrs	18 hrs.
	(iii) Double crew	16 hrs	20 hrs.

Note : Flight crew undertaking single and two pilot operations within single duty will be governed by the limitations of flight undertaken at later stage of flying.

7.3 Maximum Flight Time / Duty Time Limitations for Long Range (LR) / Ultra Long Range (ULR) Operations

Flight Crew Compliment	Flight time	Flight duty period
(a) 2 Sets of Crew	16:00 hrs.	18:00 hrs.
(b) 2 Sets of Crew + 1 Crew Member	18:00 hrs.	21:00 hrs.

7.3.1 Rest Requirements

- a) Rest period prior to LR flights shall be 24 hours prior to the scheduled departure.
- b) Rest period prior to ULR flights shall be 24 hours including one local night prior to the schedule departure.
- c) At destinations outside Pakistan a minimum of 24 hours rest shall be provided.

Note: Operators shall take into consideration the time zone crossing and crew familiarity with the destinations while planning the crew for an LR / ULR flight.

- For destinations with a time zone difference of upto five (05) hours the rest required at destination shall be minimum fourteen (14) hours.
 - For destinations with time zone difference of more than five (05) hours the rest required at destination shall be fourteen (14) hours plus the time zone's crossed.
- e.g. Karachi-New York flight, with a time zone difference of 10 hours the rest required at New York shall be 14 hrs. + 10 hrs., therefore, a minimum of 24 hours.

- d) Rest after return to home base on completion of LR / ULR flight **shall be 48 hours or double the flight duty time rest whichever is more**. Operators may develop their own schemes IF after an LR / ULR flight a domestic layover is involved, whereby splitting the rest periods at domestic stations, or position / deadhead the crew to their home base. This facility shall only be availed with the consent and in agreement with the crew member involved.
- e) After the completion of one LR flight pattern the subsequent LR flight pattern shall be separated by seven (07) days.
- f) After the completion of one ULR flight pattern the subsequent ULR flight pattern shall be separated by twelve (12) days.

8. CUMULATIVE TOTAL TIME LIMITATIONS

- 8.1 The Operator shall not permit an aircraft to fly and no flight crew member shall act as a member of the flight crew of an aircraft if during the planned flight, any member of the flight crew will accumulate flight time which:
- a) When added to the flight time accumulated in the seven days period preceding the flight would be in excess of thirty-five hours; or
 - b) If added to that accumulated in the thirty days period preceding the flight would be in excess of one hundred hours; or
 - c) If added to that accumulated in three hundred and sixty five days period preceding the flight would be in excess of one thousand hours.
- 8.2 The Operator shall not permit an aircraft to fly, nor shall a person act, as a member of the crew of an aircraft if during the planned flight the FDTL in the approved scheme under the fatigue management established by the Operator would be exceeded.

9. EXTENSION OF FLIGHT DUTY PERIODS

- 9.1 Exceptions allow the flexibility needed to respond to unforeseen circumstances beyond the control of the operator that occur during operations. These are not intended for use in regular practice. These exceptions must not be scheduled or planned. Flight duty periods may be extended in unforeseen operational circumstances by no more than 04 hour(s).
- 9.2 Before exercising this extension of flight duty period, the Pilot-in-Command should be satisfied that all members of the flight crew required to operate the aircraft consider themselves fit to do so.
- 9.3 In an emergency situation, which in the judgment of the commander presents a serious risk to health or safety of crew and passengers or endangers the lives, then the above limits may be exceeded till emergency situation is resolved.

10. REPORTING TIME

- 10.1 Crew report times must realistically reflect the time required to complete pre-flight duties, both safety-and service-related (if appropriate), and a standard allowance time is to be added at the end of flight time to allow for the completion of checks and records.
- 10.2 For record purposes, the pre-flight report time shall count both as duty period and as flight duty period, and the post-flight time shall count as duty period only.

10.3 Traveling time spent by a flight or cabin crew member in transit between the place of rest and the place of reporting for duty is not counted as duty, even though it is a factor contributing to fatigue. Excessive traveling time undertaken immediately before commencing a flight duty period could therefore detract from a flight or cabin crew member's ability to counter fatigue arising whilst on duty, and should therefore be taken into account when deciding where pre-flight rest should be taken.

10.4 Pre-flight report time to be counted as duty period and flight duty period is as follows:

Flight Type	Flight Crew	Cabin Crew
International Flight	01 hr.	01 hr
Domestic Flight	45 min.	45 min.

10.5 Post-flight time to be counted as duty period is as follows:

Flight Type	Flight Crew	Cabin Crew
International Flight	30 min.	30 min.
Domestic Flight	15 min.	30 min.

11. FLIGHTS OPERATED BY AUGMENTED CREW AND THE PROVISION OF IN-FLIGHT RELIEF

11.1 The composition and number of flight crew members carried to provide in-flight relief, and the quality of rest facilities provided should determine the amount by which the basic flight duty period limitations may be extended. A sensible balance must be kept between the division of in-flight duty and rest.

11.2 The Operator shall ensure that flight and cabin crew members are notified prior to commencement of the rest period preceding the flight of the role they are required to undertake (i.e., main or relief crew), so that they can plan their pre-flight rest accordingly.

11.3 Multiple crew and double crew are limited to 3 sectors on international and 4 sectors on domestic / regional flights.

11.4 The Operator must address the following issues for such operations:

- a) The quality of the flight relief facilities must match the requirements;
- b) The qualifications of crew members at the controls at all stages of flight should be such that the control and completion of the flight to a safe landing should not be dependent on the return of resting crew members to resume their duty;
- c) The division of duty and rest between crew members must be kept in balance;
- d) Full crew integrity is retained. During the PIC's period of relief, responsibility for the safe conduct of the flight will be delegated to the PIC's relief pilot who must be command qualified.

12. LIMITATION ON NUMBER OF LANDINGS

12.1 In any one planned flight duty period, no crew member of an aircraft with weight category above 5700 Kgs, shall do or be asked to do more than a total of:

- a) 6 landings in day light in one duty period; or
- b) 4 landings by day and 1 landing by night in one duty period; or
- c) 3 landings by day and 2 landings by night in one duty period; or
- d) 2 landings by day and 3 landings by night in one duty period; or
- e) 4 landings by night in one duty period.

12.2 In any one planned duty period, no crew member of an aircraft with weight category of 5700 Kgs and below, shall do or be asked to do more than a total of:

- a) 8 landings in day light in one duty period; or
- b) 6 landings by day and 2 landing by night in one duty period; or
- c) 4 landings by day and 3 landings by night in one duty period; or
- d) 5 landings by night in one duty period.

- 12.3 Limitation on number of landings shall not include landing for technical, ferry and for the purpose of retrieval of aircraft after diversion.
- 12.4 The restrictions in regard to number of landings during any 24 hours period are not applicable to:
- a) Helicopter operations;
 - b) Flying Schools;
 - c) Flight crew engaged in training flights. If the training flight is conducted after any commercial operation(s), the number of landings shall not be the limiting factor for calculation of FDTL. In such cases, total flight and duty period shall be the limiting factor. Whenever any commercial operation is conducted after a training flight, the number of landings and flight and duty time including the training flights shall be considered for calculating FDTL;
 - d) Cabin Crew.

13. CONSECUTIVE NIGHT LIMITATION

- 13.1 A crew member shall neither be detailed nor undertake any duty between periods embracing 2200 to 0600 hours local time for more than two consecutive nights.

14. MINIMUM REST PERIOD LIMITATIONS

- 14.1 Flight crew members: The Operator shall provide each flight crew member of an aircraft with a minimum rest period immediately before commencing a flight duty period which shall not be less than as given in para 14.1.1, 14.1.2 and 14.1.3 below for each operation, and shall provide a rest period of not less than twenty-four hours after availing his/her rest period of last flight in each period of seven consecutive days or shall provide rest periods as directed by the DGCAA.

- 14.1.1 RPT: Twice the duration of the flight duty period of previous flight and not less than 12 hours.

(1) Note: To retrieve aircraft in case of unplanned exigencies or diversion and also for the crew specially positioned for this purpose, rest can be reduced to minimum eight (08) hours which shall not include time allowed for preflight and post flight duties.

(2) Note: To avoid inconvenience to passenger, on subsequent flight minimum rest period may be reduced to 12 (twelve) hours on international sectors and 10 hours on domestic sectors.

(3) Note: In case of diversions due to weather or any unforeseen reasons, for retrieval of aircraft an additional landing is permitted.

- 14.1.2 Charter & Aerial Work Operation with aircraft weight category of above 5700 kgs: Twice the duration of flight time of previous flight or 11 hours, whichever is more.

- 14.1.3 Charter, Aerial Work and Flying School with aircraft weight category of 5700 kgs and below: Twice the duration of flight time of previous flight or 10 hours, whichever is more.

- 14.2 Cabin crew members: The Operator shall provide each cabin crew member of an aircraft with a minimum rest period before each flight duty period which shall not be less than twice the flight duty period of previous flight or 10 hours, whichever is more, and shall provide a rest period of not less than twenty-four hours after availing his/her rest period of last flight in each period of seven consecutive days.

Note: Any rest period provided under this ANO shall not include time spent as a passenger or as supernumerary crew of an aircraft on a flight made for the purpose

of positioning for a subsequent period of duty. The time spent in travel as supernumerary crew will be considered towards duty period and the rest period immediately before commencing a flight duty period must correspond to the above given rest limitations.

14.3 Operator shall not assign any crew member to any duty during required rest period.

14.4 An Operator shall not cause or permit any person to fly as a member of a crew if he knows or has reason to believe that that person is suffering from fatigue to the extent that the safety of the aircraft would be endangered.

15. MISCELLANEOUS PROVISIONS: Operations Manual must include the following:

15.1 Standby:

15.1.1 The start time and end time of standby should be defined and notified in advance, and the maximum length of any standby should also be specified.

15.1.2 Where airport standby is immediately followed by a flight duty period, the relationship between such airport standby and the assigned flight duty must be defined. In such a case, airport standby, if it is likely to induce fatigue, should be considered as part of a duty period and should be taken into account to calculate the minimum rest preceding a subsequent flight duty period.

15.1.3 When flight and cabin crew members are required to be on standby at an accommodation arranged by the Operator, then adequate rest facilities must be provided.

15.2 Available: The Operations Manual must include (if applicable) the following: When flight and cabin crew members are required to be available for contact over a brief period of time to receive instructions concerning a possible change of roster, that requirement should not prevent that crew member from having a rest period before reporting for duty. The time spent being available shall not be counted as duty.

15.3 Positioning at behest of the Operator: All time spent for positioning counts as duty, and positioning followed by operating without an intervening rest period also counts as flight duty.

16. VARIATION TO FDTL

16.1 It may not be possible to cover every eventuality encountered in a dynamic operational environment. Should variations from the fatigue regulations become necessary, an Operator shall establish a means, acceptable to PCAA, to permit such variations if it provides an equivalent level of safety.

16.2 Any variation to this scheme of Flight and Duty Time Limitation beyond the scope of an Operator may only be permitted by an express authority of DGCAA.

17. RECORD KEEPING

17.1 To comply with the regulations established in this ANO, an Operator shall maintain records, for all its flight and cabin crew members of flight time, flight duty periods, duty periods and rest periods.

17.2 The Operator should ensure that these records include for each flight and cabin crew member, at least:

- a) The start, duration and end of each flight duty period;
- b) The start, duration and end of each duty period;
- c) Rest periods;
- d) Flight time.

- 17.3 To enable the Operator to ascertain that the fatigue management scheme is functioning as intended and as approved, records should be kept for 24 months from the date of the last relevant entry, of the duties performed and rest periods achieved so as to facilitate inspection by the Operator's authorized personnel and audit by the PCAA.
- 17.4 Flight crew members shall maintain a personal record of their daily flight time.
- 17.5 The Operator should also keep records of occasions when:
- a) an extension of flight duty period under unforeseen operational circumstances has been requested and approved;
 - b) discretion by Pilot-in-Command in clause 11 has been exercised.
- 17.6 If extension/discretion (as mentioned above) has to be applied for similar reasons on more than 10 per cent of occasions when a particular route or route pattern is flown, it is likely that the intention of this guidance is not being met and undue fatigue may result. Arrangements must be made to change the schedule or the crewing arrangements so as to reduce the frequency at which such events occur.
- 17.7 PCAA may require submission of copies of certain additional records.

18. REFERENCES

- 18.1 ICAO Annex 6 Pt -1
- 18.2 UK CAP 371 - Avoidance of fatigue in aircrew.

19. IMPLEMENTATION

- 19.1 This Air Navigation Order shall be implemented with immediate effect and it supersedes ANO 91-0012 Issue 4.

--S/d--

(RIAZ-UL-HAQ)
Air Vice Marshal
Acting Director General,
Pakistan Civil Aviation Authority

Dated: 07th April, 2011