



GOVERNMENT OF INDIA

OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION

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**CIVIL AVIATION REQUIREMENTS
SECTION 7, FLIGHT CREW STANDARDS
SERIES 'J', PART III
27TH JULY, 2007**

**EFFECTIVE:
Scheduled Operators: 1.08.2007
All other Operators: 16.08.2007**

**SUBJECT: FLIGHT DUTY TIME AND FLIGHT TIME LIMITATIONS -
FLIGHT CREW MEMBER**

1. INTRODUCTION:

1.1 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.

1.1.1 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.

1.1.2 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.

1.1.3 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 proviso 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 does 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.

1.2 Definitions:

Flight Duty Time The total time commencing from the time of reporting at the airport for the purpose of operating a flight and ending minimum 15 minutes after termination of a flight or a series of flights.

Reporting Time It is the time at which crew report at Airport/Helipad with the intention of undertaking a flight. However for the FDTL computation purposes, it shall be taken **minimum 45 minutes before the planned scheduled departure.**

Flight Time The total time from the moment the aircraft moves with the intention of flight to the moment it comes to rest at the end of the flight. In case of Helicopter it shall be time from engine "Switch On" to engine "Switch Off".

Rest Period The period during which a flight crew is not assigned any duty including operational, managerial, office work and training including simulator training or instructional.

Flight Crew Member A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

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.

Calendar Day 24 hours period commencing at 0000 hr. local time.

Suitable Accommodation A quiet, ventilated and comfortable place with a bed and not open to public.

Neighbouring Countries Neighbouring countries will be those countries where the Standard local time differs from the IST by **maximum of one hour or where the single flight time to destination is not more than 4 hours, whichever is more restrictive.**

Ground Transportation The time spent by crew member between his/her place of rest and the airport in a surface transport. For the purpose of FDTL, Ground Transportation time shall be uniformly calculated as one hour each,

before commencement of flight and at the end of flight or series of flights. However, **it will neither count towards rest nor for flight duty time.**

Aerial Operations Agriculture Operation, Pipeline Survey, Airport Facilities Calibration flights, Leaflet and Flower Dropping flights, Under Sling Cargo Carriage, Rescue Hoist, Aerial Photography, Geographical survey, Heli Skiing and other like operations will constitute Aerial Operations.

Dead Heading The period during which a crew member travels on board any air transport belonging to the company or its agents for the purpose of positioning so as to operate a flight or after completion of flight.

Local Night A period of ten hours from 2000 hours to 0600 hours Local standard time.

Window of Circadian Low Window of Circadian Low is the time period associated with low of performance, alertness, body temperature and of peak fatigue. It is the period between 0200 to 0600 hrs. of home base time for flight duty time that cross less than 3 time zones. For flight duty time period which crosses 3 or more time zones it is 0200 to 0600 hrs. home base time for first 48 hours, thereafter it is referred to 0200 to 0600 hrs. of local time at the point of departure.

- 1.3 This Civil Aviation Requirement prescribes flight time/flight duty time limitations and rest requirements. An operator shall establish a flight and duty time limitation and rest scheme for crew members in accordance with the proviso of this Civil Aviation Requirement and incorporate the same in their Operations Manual.
 - 1.3.1 Operators shall ensure that all flights are planned to be completed within the allowable flight and duty period taking into account the time necessary for pre-flight duties, the flight function including taxiing, turn-around time in case of multi sector flights. The nature of operation, existing environmental conditions including winds and anticipated delays due to traffic congestion shall also be kept in consideration while planning flights. **Actual flight time shall be used for working out FDTL.**
 - 1.3.2 Operator must prepare and publish duty rosters sufficiently in advance to provide the opportunity to crew members to plan adequate rest. Local days, free of duty shall be notified to crew members at least 7 days in advance.
 - 1.3.3 Operator shall educate/train pilots regarding stress, sleep and fatigue management in consultation with the Aviation Medicine experts.
- 1.4 This CAR is issued under the provisions of Rule 133A of the Aircraft Rules, 1937 for information, guidance and compliance by all concerned.

2. APPLICABILITY

The Flight Time/Flight Duty Time limitations and rest period prescribed in the Civil Aviation Requirement shall be applicable to all operators and flight crew members as per the category of operation.

3. STANDARD PROVISION

Proviso mentioned hereunder in sub Para are **applicable to all the operations.**

3.1 Every crew member shall be given rest, which will be pro-rata twice the flight time subject to minimum of 10 hrs. in any 24 consecutive hrs. This sub Para shall not be applicable to International operations under Para 5.

3.2 A minimum of 24 hrs. rest encompassing period 2000 hrs. to 0600 hrs. shall be provided to all crew members in any 7 consecutive days. This will be in addition to the rest based upon the flying in the last 24 consecutive hours. This sub Para shall not be applicable to Helicopter operations under sub Para 8.4.

3.3 Whenever flight crew is scheduled on dead heading to operate the flight, this shall count as flight duty.

3.4 Dead heading done after operating the commercial flight will neither count as duty nor as rest period. In this case if flight duty time and dead heading time exceeds 18 hours, then the following rest period must include a local night.

3.5 Whenever a flight crew is deputed as safety pilot/observer the period of such duty shall be counted in his Flight Duty Time.

3.6 Simulator Training and Aircraft flying:

3.6.1 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.

3.6.2 Simulator time shall not count towards the flight time.

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

No extension of Flight Duty Time shall be permitted in such cases.

3.7 Consecutive Night Flying:

3.7.1 Operator shall not roster any Flight Crew Member to undertake flight for more than two consecutive nights with duty period embracing any period between 0000 to 0500 hours local time.

- 3.7.2 Additional rest of two hour shall be provided for every hour or part thereof of duty period that impinges into the said period of 0000to 0500 hrs.
- 3.7.3 If any part of Flight Duty Time on second night is carried out in **window of circadian low** then following rest period must include a local night.

3.8 **Standby Duty:**

- 3.8.1 Time of start/end and nature of standby duty must be notified to crew members in advance. Maximum duration of standby duty shall be 8 hours. No standby duty can be assigned during mandatory rest period.
- 3.8.2 The standby duty if undertaken at home or in suitable accommodation provided by the operator will neither be considered towards Flight duty nor the rest period.
- 3.8.3 Crew member Standby at his Home/suitable accommodation shall be given at least 2 hours notice before departure time. In such cases flight duty shall start at the time of reporting at Airport.
- 3.8.4 If crew member is on standby duty or readiness at an airport then period of standby duty shall count towards duty time.
- 3.8.5 Minimum rest of 10 hours has to be provided to crew member after standby duty and before start of next duty.

3.9 **Mixed Duties:**

- 3.9.1 Whenever a crew member is required to report for duty in advance of the stipulated reporting time for a scheduled flight to carry out any other task at the behest of an operator, then the time spent on that task shall be part of subsequent flight duty.
- 3.9.2 Whenever a crew member is required to carry out additional tasks at the behest of operator; before, in between or after flight then the time spent on the task shall be part of flight duty. Training,flight planning, commercial activities, maintenance check, preparation of trim sheet, securing aircraft, compressor wash, and ground running/taxing for snag rectification/positioning of aircraft and similar work shall constitute additional tasks for the sub Para.
- 3.9.3 When both fixed wing and rotary wing flying is carried out, the more restrictive flight and duty time limitations shall apply.
- 3.9.4 If flying is carried out on two or more different types of operations having different flight/duty timings, the more restrictive flight and duty time limitations shall apply.

3.10 **Training Flights**

- 3.10.1 Whenever training flight is conducted before or after operating a public transport/commercial or private operation entire such period including training flight shall count for Flight Duty Time/Flight Time. **No training flight shall be undertaken after operation of a flight embracing any period between 0000 to 0500 hours.**

- 3.10.2 Instructor/Examiner engaged in training flight for 3 hours, in addition to non-commercial positioning flight up to maximum of two hours, shall have a break/rest of minimum period of 2 hours away from aircraft. However, if two Instructors/Examiners are on board, after 3 hours of training Instructor/Examiner can take break/rest in aircraft provided he shall not undertake flying/training thereafter.
- 3.10.3 If during any 24 hours period only training flight is carried out including non-commercial positioning flight, there shall be no restriction regarding number of circuits and landing. In case during any 24 hrs. period training flight is combined with public transport/commercial, private operations and training flight is conducted before such flight, then the restriction of number of landing permitted for these operations shall apply. For training flight conducted after such flights, circuits and landing during training shall be restricted to 20.
- 3.10.4 Proviso of Sub Para 3.10 shall not apply to Flying Training Institutions covered under Para 9.

3.11 Split Duty

- 3.11.1 Whenever there is a break between two flights or between positioning journey and a flight in a period of 24 hour the break period will be adjusted as under:

Break of 0-3 hrs.	Will be counted fully for Flight Duty Time
Break >3 hrs. - 10 hrs.	Half of it will count as Flight Duty Time
Break >10 hrs.	Will not be counted towards Flight Duty

- 3.11.2 Break period shall not include time required for pre-flight and post flight duties which shall be a minimum of 45 minutes plus actual time spent on transportation.
- 3.11.3 This clause shall be applicable only if crew member is provided with suitable accommodation/hotel facilities.
- 3.11.4 No extension of Flight Duty Time shall be permitted if proviso of Split Duty has been availed.

3.12 Exceptions Due to Unforeseen Operational Circumstances:

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.**

- 3.12.1 Extension of Flight Time/Flight Duty Time shall be permitted for unforeseen circumstances occurring after take off on last two sectors and maximum extension shall be limited to 3 hours of Flight Duty time and 1½

hour of flight time. However if the aircraft is landing at base station during the extended period of flight time/Duty time, crew change shall be effected.

- 3.12.2 If exceeded Flight Duty Time impinges window of circadian low then following rest period must include a local night.
- 3.12.3 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.
- 3.12.4 Flight Duty Time cannot be extended if flight is operated after simulator flying or if the proviso of Split Duty has been used.
- 3.12.5 In case of unplanned exigencies or diversion, to retrieve aircraft and also for the crew specially positioned for this purpose rest can be reduced to minimum 8 hrs. which shall not include time allowed for preflight and post flight duties which shall be a minimum of 45minutes plus actual time spent on transportation.
- After completion of flight, rest period shall be increased by twice the amount by which rest period was reduced earlier.
- 3.12.6 Rest Period cannot be reduced if on previous sector Flight Duty Time/Flight Time was extended.
- 3.12.7 In case of diversions due to weather or any unforeseen reasons for retrieval of aircraft an additional landing is permitted which may include landing for ferry flight without commercial load, but this shall not include landing for technical, commercial or operational reasons.
- 3.12.8 Any extension of FDTL/FTL shall be reported to DGCA within 24 hours along with the reasons and corrective action taken to prevent reoccurrence.

Crew shall be provided additional rest as under:

Time by which FDTL/FTL exceeds	Additional rest to be provided
0-1 hrs. FDTL and/or 0 - ½ hr. FTL	2 hrs.
>1-2 hrs. FDTL and/or >½ -1 hr. FTL	4 hrs.
>2-3 hrs. FDTL and/or > 1 - 1½ hr. FTL	6 hrs.

4. DOMESTIC & NEIGHBOURING COUNTRIES OPERATION:

The **Maximum Flight Duty Time/Flight Time** shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	No. of Landing
In any 24 consecutive hrs.	11	7	6
	12	8	5
In 7 consecutive days	60	35	-
In 30 consecutive days	200	125	-
In 12 consecutive months	1600	1000	-

5. INTERNATIONAL OPERATION:

5.1 The **Maximum Flight Duty Time/Flight Time** shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	No. of landings	Crew Combination
In any 24 Consecutive hrs.	12	8	2	One pilot crew
	12	8	3	Two pilots/two pilots and one FE (1P1+1P2/1P1+1P2+FE)
	13	9	2	
	14	10	1	
	15	12	2	Three pilots/three pilots+1FE(2P1+P2/2P1+P2+FE)*
	17	14	2	Two sets of crew (2P1+2P2)*
In 7 Consecutive days	60	40		
In 30 Consecutive days	190	125		
In 12 Consecutive months	1600	1000		

* One P1 can be substituted by a Cruise Captain.

5.2 In all such cases wherein more than two Crew Members are rostered for a flight, Flight Time shall be equally distributed among crew members. However, Flight Duty Time shall be taken as total time for each crew.

e.g. if a flight is conducted by 3 crew wherein Flight Time is 12 hours and Flight Duty Time is 15 hour, each crew member will record Flight Time as $12 \times 2/3 = 8$ hours whereas Flight Duty Time shall be recorded as 15 hours.

5.3 If a crew is rostered for flights of more than 10 hours, operator shall provide adequate sleeping quarters in aircraft. Comfortable reclining serviceable seat of highest available class or bunk separated or screened from flight deck and passengers, shall constitute adequate sleeping quarters.

5.4 When Flight Engineer is a crewmember on such flights, similar sleeping quarters shall be provided to him. Facility to relieve Flight Engineer by adequately qualified crew shall be ensured.

5.5 Minimum rest period shall be adjusted as follows:

5.5.1 When crew is rostered for a flight of 9 hours or more, rest period prior to operating such flight shall include a local night.

5.5.2 Minimum rest period at outstation shall be as under:

Time zone away from base station	Rest at Outstation
0-3	Twice the flight time subject to minimum of 12 hours.
>3-7	Twice the flight time subject to minimum of 20 hours.
>7-12	72 hours cumulative

e.g. Mumbai-London-New York flight require 72 hours cumulative rest at London and New York subject to minimum 20 hrs. at each station.

The rest can be split as follows:

20 hrs. London 52 hrs. New York
or 30 hrs. London 42 hrs. New York
or 48 hrs. London 24 hrs. New York etc. etc.

5.5.3 Rest on return to base station shall be governed as

Time zone away from base station	Rest at base station
0-3	Twice the flight time of last sector subject to minimum of 12 hours.
>3-7	48 hours which shall include two local nights.
>7	72 hours if duration of trip is less than/or 9 days. 96 hours if duration of trip is more than 9 days.

5.6 Ultra Long Range Operations

Single Flight Time exceeding 14 hours shall constitute Ultra Long Range Operation (ULR).

5.6.1 The **Maximum Flight Duty Time/Flight Time** shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	No. of landings	Crew Combination
In any 24 Consecutive hrs	21	18	1	Four Pilots (2P1+2P2)*
	23	20	1	Five pilots (3P1+2P2) *

* One P1 can be substituted by a Cruise Captain.

5.6.2 Limitations of Flight Time and Flight duty time in 7 consecutive days, 30 consecutive days and 12 consecutive months shall be same as in Para 5.1.

5.6.3 Proviso of Para 5.2 and Para 5.3 shall also apply.

5.6.4 Minimum rest period shall be adjusted as follows:

5.6.4.1 Rest Period prior to operating ULR flight shall include a local Night.

5.6.4.2 Minimum Rest Period at out station shall be 60 hours.

5.6.4.3 Rest on return to base station shall be 72 hours if the duration of the trip is less than or 9 days and 96 hours if the duration of the trip exceeds 9 days.

6. GENERAL AVIATION:

The maximum Flight Duty Time/Flight Time for operators engaged in executive flying/State Government flying/Election flights and charter flights shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	No. of landings
In any 24 consecutive hrs.	12	8	6 (Two pilots)
	11	7	5 (Single pilot)
In 7 consecutive days	60	35	
In 30 consecutive days	200	125	
In 12 consecutive months	1600	1000	

For international operation proviso of Para 5 shall apply.

7. AERIAL OPERATIONS:

7.1 The maximum Flight Duty Time/Flight Time for operators engaged in Aerial Operations shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	Crew Combination
In any 24 consecutive hrs.	9	5	Single Pilot Operation
	8	4*	
	11	7	Two Pilots Operation
	10	6*	
In 7 consecutive days	60	35	
In 30 consecutive days	180	100	
In 12 consecutive months	1500	900	

* For operations, wherein number of low approaches/landing are more than 8 per hour or/and more than 50% of time low flying is carried out below 1000 ft. AGL (for Helicopters 500 ft. AGL or below).

7.2 No crew member shall be on controls for more than continuous period of 3 hours. Thereafter shall have break of one hour away from the aircraft.

8. HELICOPTERS OPERATIONS:

8.1 The maximum Flight Duty Time/Flight Time for Helicopter operations shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)	
In any 24 consecutive hrs.	10	7	For two pilots
	9	6 ^{*/**}	
	9	6	For single pilot
	8	4 [*]	
In 7 consecutive days	55	30	
In 30 consecutive days	180	100	
In 12 consecutive months	1300	800	

* for demanding operations like off shore operations, winching and carrying external load etc.

** can be increased to 7 hours provided numbers of landings are less than 10.

8.2 Crew flying repetitive short sectors and doing an average of 8 or more landings per hour for two hours shall have a break of at least one hour away from helicopter.

8.3 Maximum number of landings in a calendar day shall not exceed 30.

8.4 For outstation duties minimum rest period shall be as under:

8.4.1 24 hours rest encompassing period 2000 hrs. to 0600 hrs. shall be provided to all pilots in any 7 consecutive days.

8.4.2 Rest on return to base station shall be governed as:

Outstation duty	Rest period	
Up to 14 days	1/3	Of number of days spent at outstation
More than 14 days	1/2	

8.5 Medical evacuation flights can be undertaken for life saving mission with reduced rest period. Rest period after such flights shall be governed as:

8.5.1 If such flight is undertaken after minimum rest of 8 hours, which shall not include minimum of one hour of preflight/post flight duties plus actual time spent on transportation and if such flight duty does not impinge into any period between 0000 to 0500 hrs. local time, minimum rest of 10 hrs. shall be provided to crew members after the flight.

8.5.2 In all other conditions, minimum rest of 24 hrs. encompassing a local night shall be provided to crew members after the flight.

9. FLYING TRAINING INSTITUTIONS:

9.1 The maximum Flight Duty Time/Flight Time for Flying Training Institutions shall be as under:

Period	Flight Duty Time (Hrs.)	Flight Time (Hrs.)
In any 24 consecutive hrs.	11	6
In 7 consecutive days	65	30
In 30 consecutive days	210	125
In 12 consecutive months	2000	800

9.2 An Instructor/Examiner/Trainee engaged in training flight for 2 hour and/or continuous 16 circuits and landings shall have break/rest of minimum period of one hour.

10. GENERAL CONDITIONS FOR ALL OPERATORS:

10.1 Flight and Duty time records and rest period availed shall be maintained by the operator for each of its crew. This record shall be retained for **two years**. Crew shall also make record of the duty time period in their logbooks in the remarks column or as separate column.

10.2 In extreme exigencies/extraordinary circumstances, the DGCA may extend Flight and Duty Time Limitations in accordance with the conditions, which the DGCA may specify.

10.3 It shall be the responsibility of the Accountable Manager to ensure the implementation, monitoring, strict adherence of this Civil Aviation Requirement and prompt reporting of any exceedence thereof. It shall also be responsibility of crew member equally to ensure adherence to proviso of this Civil Aviation Requirement.

Note: This Civil Aviation Requirement supersedes AIC 28/1992, CAR Section 7, Series 'J' Part II and all other instructions issued on the subject.

Sd/-
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