

BOEING 747-400: DUTY PERIODS, FLIGHT TIME, AND REST REQUIREMENTS

GENERAL

- > means greater than. < means less than. ≥ means greater than or equal to. ≤ means less than or equal to.
- *Scheduled flights:*
 - Are flights published in a schedule by an airline and are available to the public.
 - Use **Flag** or **Domestic** rules. Domestic rules are used for scheduled flights within the 48 contiguous US states. Flag rules are used for scheduled flights outside of, or, to and from, the 48 contiguous US states. Flag rule examples include: Los Angeles to Hawaii or Hong Kong to Seattle.
 - Require that both the departure airport and the destination airport are published in Ops. Specs. C070. If either airport is not published in Ops. Specs. C070, the flight is considered non-scheduled.
- *Non-scheduled flights and flights considered non-scheduled:*
 - Are normally not published in a schedule by an airline and are not available to the public.
 - Use **Supplemental** rules. Supplemental rules may be used within, outside of, or, to and from, the 48 contiguous US states. *Scheduled flight rules* (Flag or Domestic rules) may be used instead of Supplemental rules, if all of the following criteria are met (Ops. Specs. A030):
 - The flight operates within the areas listed in Ops. Specs. B050.
 - Both the departure and destination airports are listed in Ops. Specs. C070.
 - Require an alternate. FAR 121.623 stipulates that an alternate is required, unless, the fuel provisions of 121.645 c are complied with. 121.645 c requires 2 hours of extra fuel after arriving at your destination (calculated at cruise speed) if an alternate is unavailable.
- If the autopilot system is deferred inoperative, the flight crew cannot be scheduled for more than 8 hours of flight time. GOM 2.5.7.
- Part 91 flight time counts towards Part 121 flight time limitations. GOM 2.5.1.
- US Military or US State government flying does not count towards Part 121 flight time limitations. GOM 2.5.1.
- A minimum rest period of 12 hours is required for crewmembers ending a pattern of flight duty period and beginning a reserve assignment. GOM 2.5.6.

TABLES

- C: Contract duty period or required rest.
- CC: All crewmembers concurrence to extend duty period or reduce required rest with management's permission.
- F: FAR regulations. If F: is not shown, no specific FAR regulation applies in that situation.
- NA: Not applicable and not specified in any associated FAR regulations.
- The maximum duty period shows the FAR requirement (F), Contract requirement (C), and Contract requirement with crewmember's concurrence (CC). Normally the minimum amount shown will be utilized by crew. Duty periods are shown in **green**. The limiting Max duty period (largest amount) is shown in **red** for each crew combination and does not violate the contract. Any additional FAR duty period regulations are shown in **brown**.
- The minimum required rest column shows the FAR requirement (F), Contract requirement (C), and Contract requirement with crewmember's concurrence (CC). Normally the maximum required rest is shown will be utilized by the crew. Required rest is shown in **green**. The minimum required rest (smallest amount) is shown in **red** for each crew combination and does not violate the contract. Any additional FAR required rest regulations are shown in **brown**.

CONTRACT RULES

All flights.

- Minimum required rest begins at the duty off time and ends at the duty start time. Required rest shown in this document is from **duty off** to **duty start**.
- Minimum required rest is 10 hours between duty periods (duty end until duty start). This is the same as 12 hours *Block to Block*. The 2 hour difference is due to the Atlas duty requirements of 1.5 hours prior to block out and .5 hour after block in.

- Minimum required rest can be reduced to 8 hours if CC. This is the same as 10 hours *Block to Block*.
- If any duty period is extended by CC, required rest cannot be reduced. That is, the minimum required rest is 10 hours between duty periods or 12 hours *Block to Block* if a duty period is extended by CC.
- Time in ground transportation >1.0 hour (from airport to hotel or hotel to airport) is considered duty time. It is not local in nature. In this instance, the duty period would end and required rest would begin at check-in at the hotel. Also, in this instance, the duty period would start and required rest would end at check-out from the hotel.
- DH only: Max duty 24 hours. >24 hours if CC. If 24 hours or more duty is scheduled, the minimum rest is 16 hours.
- GOM 2.5.5. 4 man crews:
 - Maximum of 16 hours flight time may be scheduled in any single duty period.
 - Maximum of 8 hours for any pilot to be at the flight controls in any single duty period.
- Contract rules table:

Crew type	Max scheduled consecutive duty period. Operating or DH to operate.	Max scheduled consecutive duty period. Operating or DH <u>after</u> operating.*
2 man	<ul style="list-style-type: none"> • 14 hours • CC: 16 hours 	<ul style="list-style-type: none"> • 14 hours: In accordance with the operating flight(s). No DH after operating. • CC: 16 hours: In accordance with the operating flight(s). No DH after operating. • 20 hours: If associated with a DH after operating flight(s).
3 man	<ul style="list-style-type: none"> • 16 hours • CC: 18 hours 	<ul style="list-style-type: none"> • 16 hours: In accordance with the operating flight(s). No DH after operating. • CC: 18 hours: In accordance with operating flight(s). No DH after operating. • 20 hours: If associated with DH after operating flight(s).
4 man	<ul style="list-style-type: none"> • 20 hours • CC: 22 hours 	<ul style="list-style-type: none"> • 20 hours • CC: 22 hours

* Max scheduled duty periods are shown. However, at the end of a pattern, a crewmember may waive duty limits to DH/Commercial back to base/home.

- Example. What is the latest time we can block out to remain within the contract duty period? Given: 4 man crew. Duty start time is 1700Z. The last flight segment flight plan block time is 7 hours.
 - First, determine the max scheduled consecutive duty period. In this example, the crew determines that 20 hours is the max duty period.
 - Use the formula: Latest block out time = (Duty time start + max scheduled duty period) – (last flight segment flight plan block time + 30 minutes).
 - 1700Z + 20 hours = 3700 – 2400 = 1300Z on the next day. The duty period must end by 1300Z on the next day.
 - 1300Z – 7 hours, 30 minutes = 0530Z. The latest block out time on your last flight segment must be at or before 0530Z.

SCHEDULED FLIGHTS: USE FLAG OR DOMESTIC RULES

General.

- Scheduled flights means flights published in a schedule by an airline that is available to the public. Scheduled flights use Flag or Domestic rules only. Additionally, most non-scheduled flights will operate under Flag or Domestic. Domestic rules are used only in the 48 contiguous US states. See **GENERAL** above for clarification.

Flag rules table.

- FARs 121.481, .483, and .485.

- Use for scheduled flights outside (or to/from) the 48 contiguous United States.
- Flag rules, examples would include scheduled flights from:
 - Taipei to Kuala Lumpur (outside of the US). Anchorage to Shanghi (outside of the 48 contiguous US). San Francisco to Taipei (to/from the 48 contiguous US). San Francisco to Anchorage (to/from the 48 contiguous US).
- Flag rules table:

Crew type: Flag	Max flight deck time on any leg	Max scheduled flight time in <u>24 hours</u>	7 day limit	Max scheduled duty period	Required rest (Between duty periods)	Relief period *	30 day limits	90 day limits	Annual limit
2 man 121.481 See ADDITIONAL 2 MAN CREW RULES below	8 hours max flight time scheduled per leg between required rest periods	See ADDITIONAL 2 MAN CREW RULES below	32 hours	C: 14 consecutive hours CC: 16 consecutive hours F: 16 hours within a 24 hour period C:20 consecutive hours if associated with DH after flight	C: 10 hours CC: 8 hours F: If > 8 hours of flight time is <u>scheduled</u> in a 24 hour period, the required rest between the duty periods is twice the number of hours flown and no less than 8 hours. An additional 18 hours of rest is required after all duty periods are completed if > 8 hours of <u>flight time</u> has occurred within a 24 hour period.	24 hours off in any 7 day period	100 hours in a calendar Month	NA	1000 in 12 consecutive calendar months
3 man 121.483	NA	12 hours	NA	C: 16 consecutive hours CC: 18 consecutive hours C: 20 consecutive hours if associated with DH after flight	C: 10 hours CC: 8 hours F: 18 hours rest if flight time >20 in a 48 hour period or >24 in a 72 hour period.	24 hours off in any 7 day period	120 hours in 30 consecutive days	300 hours in 90 consecutive days	1000 in 12 consecutive calendar months
4 man 121.485	8 hours per <u>GOM</u> 2.5.5	None if adequate sleeping quarters available. 16 hours in a consecutive duty period. <u>GOM</u> 2.5.5	NA	C: 20 consecutive hours CC: 22 consecutive hours	C: 10 hours CC: 8 hours	2 times hours flown when back at base	NA	350 hours in 90 consecutive days	1000 in 12 consecutive calendar months

* 2 man and 3 man crews: For Reserve (Base standby and/or Residence standby), if you are given an operating flight assignment, you must look back over the previous 7 days and have had 24 hours off. The 24 hours off in 7 days relief period is not required for strictly dead head operations and/or ground duties. If an

operating flight is to occur following dead head operations and/or ground duties, the 24 hours off in 7 days relief period is required. In this case you must look back over the previous 7 days and have had 24 hours off.

4 man crews: Compute the total flight time accumulated from the time you left your base (or home) until the time you arrive back at your base (or home). If >7 days rest: Rest >7 days may be taken any time prior to the next flight duty.

FAR 121.487: Pilots not regularly assigned.

- For any flag or domestic flight operations:
 - Interruptions to your original schedule. For example, an interruption would be if you were regularly assigned as a 2 man crew, later assigned to a 3 man crew, then back to a regularly assigned 2 man crew.
 - If scheduled in a 2 man crew and later assigned (interrupted) as a 3 man crew and this process happens twice: You are now limited to the monthly flight limitations of 121.481: 100 flight hours in any calendar month.
 - Original schedule >20 hours in a particular flight crew complement.
 - If scheduled in a 3 man crew for >20 hours in a month, and later given a 4 man crew assignment: You are now limited to the monthly and quarterly limitations of 121.483: 120 flight hours in 30 consecutive days and 300 hours in 90 consecutive days.
 - If scheduled in a 2 man crew for >20 hours in a month, and later given a 3 man crew assignment: You are now limited to the monthly flight limitations of 121.481: 100 flight hours in any calendar month.

Domestic rules table.

- FAR 121.471. Domestic United States. Use for scheduled flights within the 48 contiguous United States.
- The domestic rules are not affected by the number of flight crews. In addition to the Domestic rules, if operating as a 2 man crew, see the **ADDITIONAL 2 MAN CREW RULES** below. The 2 man crew rules are more restrictive than the Domestic rules concerning the amount of flight time that can be scheduled within 24 hours.
- Maximum flight time per leg is 8 hours.
- Domestic rules table:

Crew type Domestic	Max flight deck time on any leg	Required Rest	Relief period	7 day limit	30 day limit	90 day limit	Annual limit
All crew combinations	8 hours max flight time scheduled per leg between required rest periods	See the required rest table below	24 hours off in 7 day period	30 hours	100 hours in calendar month	NA	1000 in calendar year

Domestic US required rest.

- If >8 hours of flight time is scheduled within a 24 hour period, a rest period is required at/or before 8 hours of flight time is completed. C rest = 10 hours regardless if the trip is one duty period or two duty periods within 24 hours. In some circumstance 2 man crew rest will be greater than 10 hours, see the 2 man crew rules on pages 6 and 7 below.
- If payback rest is required, it must begin no later than 24 hours after commencement of the reduced rest.
- For Domestic flights greater than 8 hours scheduled in a 24 hour period use the table below.
- As a hypothetical problem: Crew scheduling has called you and asked you to fly more than 8 hours in a 24 hour period as domestic flight crew. You can determine the amount of flight hours you are legal to fly in the second duty period by using the following formula:

$$24 - \text{Duty period A hours} - \text{Required Rest hours} = \text{Available Duty period B hours. Available Duty period B hours} - 2 \text{ hours} = \text{Available flight time hours in}$$

Duty period B

- Domestic flights greater than 8 hours scheduled in a 24 hour period using C required rest:

Duty period A, scheduled flight time	Duty period A, Duty time	C: Required Rest (Between duty periods). FAR <i>reduced rest period</i> *	Max flight hours allowable in Duty period B	Duty period B, duty time	Total hours flown within the 24 period	Total duty time within a 24 hour period
1	3	10	8	10	9	13
2	4	10	8	10	10	14
3	5	10	7	9	10	14
4	6	10	6	8	10	14
5	7	10	5	7	10	14
6 **	8	10	4	6	10	14
7 **	9	10	3	5	10	14
8 **	10	10	2	4	10	14

* If ≥ 9 hours of flight time is scheduled within a 24 hour period and rest is reduced from FAR rest (11 hours) to our contract C rest requirement (10 hours), the payback rest requirements of FAR 121.471 (Part 3 (C)) applies. FAR 121.471 3 (C): *A rest required under paragraph (b)(3) of this section may be scheduled for or reduced to a minimum of 9 hours if the flight crewmember is given a rest period of at least 12 hours that must begin no later than 24 hours after the commencement of the reduced rest period.*

** If 2 man crew, see 2 man crew examples tables below. Minimum rest is greater for 2 man crews in this circumstance.

- Domestic flights greater than 8 hours scheduled in a 24 hour period using CC required rest:

Duty period A, scheduled flight time	Duty period A, Duty time	CC: Required Rest (Between duty periods). FAR <i>reduced rest period</i> *	Max flight hours allowable in Duty period B	Duty period B, duty time	Total hours flown within the 24 period	Total duty time within a 24 hour period
1	3	8	8	10	9	13
2	4	9	8	10	10	14
3	5	9	8	10	11	15
4	6	9	7	9	11	15
5	7	9	6	8	11	15
6 **	8	9	5	7	11	15
7 **	9	9	4	6	11	15
8 **	10	9	3	5	11	15

* Note that the reduced FAR rest (9 hours) is greater than our contract CC rest requirement (8 hours). If ≥ 9 hours of flight time is scheduled within a 24 hour period, the use of CC rest (8 hours of rest) is in violation of FARs. FAR 121.471 3 (C): *A rest required under paragraph (b)(3) of this section may be scheduled for or reduced to a minimum of 9 hours if the flight crewmember is given a rest period of at least 12 hours that must begin no later than 24 hours after the commencement*

of the reduced rest period.

** If 2 man crew, see 2 man crew examples tables below. Minimum rest is greater for 2 man crews in this circumstance.

ADDITIONAL RULES FOR ANY 2 MAN CREW FLIGHT

- In addition to the 2 man crew FARs shown in any table, these rules and table below apply to any 2 man crew flight, whether scheduled flight or non-scheduled flight.
- Maximum flight time per leg is 8 hours.
- If ≤ 8 hours of flight time is scheduled within a 24 hour period, regardless of the number of legs, remember that:
 - **F: 16 hours is the maximum duty time allowed within a 24 hour period.**
 - **C: 14 hours is the maximum consecutive duty.**
 - **CC: 16 hours is the maximum consecutive duty.**
- If >8 hours of flight time is scheduled within a 24 hour period:
 - A required rest is required at/or before 8 hours of flight time is completed. The required rest is equal to twice the number of hours flown and no less than 8 hours. You will have 2 duty periods within 24 hours.
 - An additional required rest of 18 hours duty to duty is required after all duty has been completed.
- As a hypothetical problem: Crew scheduling has called you and asked you to fly more than 8 hours in a 24 hour period as a 2 man crew. Note in the table that *Duty period A duty time plus required rest between duty periods plus duty period B duty time* does not exceed 24 hours. You can determine the amount of flight hours you are legal to fly in the second duty period by using the following formula:
 $24 - \text{Duty period A hours} - \text{Required Rest hours} = \text{Available Duty period B hours}$. Available Duty period B hours – 2 hours = Available flight time hours in Duty period B
- The table below may be used as a guide if >8 hours of flight time is scheduled within a 24 hour period. This table is used if Contract rest (C) is used. The required rest hours are from duty off until duty start. The table is read from left to right.
- 2 man crew examples table using Contract rest (C):

1	2	3	4	5	6	7
Duty period A, Total flight time	Duty period A, Duty time	Required rest period using C rest (Between duty periods)	Max flight hours allowable in Duty period B	Duty period B, Duty time	Total flight hours flown within 24 hour period *	Total duty time within 24 hour period
1	3	10	8	10	9	13
2	4	10	8	10	10	14
3	5	10	7	9	10	14
4	6	10	6	8	10	14
5	7	10	5	7	10	14
6 **	8	12 **	2	4	8	12

* Additional rest is required: FAR 121.481 (C): Each pilot who has flown more than eight hours during 24 consecutive hours must be given at least 18 hours of rest before being assigned to any duty with the certificate holder.

**** In this particular scenario, FAR required rest (12 hours) is greater than our contract C rest requirement (10 hours). FAR 121.481 (B): If a certificate holder conducting flag operations schedules a pilot to fly more than eight hours during any 24 consecutive hours, it shall give him an intervening rest period, at or before the end of eight scheduled hours of flight duty. This rest period must be at least twice the number of hours flown since the preceding rest period, but not less than eight hours.**

- The table below may be used as a guide if >8 hours of flight time is scheduled within a 24 hour period. This table is used if Contract rest with Crew Concurrence (CC) is used. The rest period hours are from duty off until duty start. The table is read from left to right.
- 2 man crew examples table using Contract rest with Crew Concurrence (CC):

1	2	3	4	5	6	7
Duty period A, Total flight time	Duty period A, Duty time	Required rest period using CC rest (Between duty periods)	Max flight hours allowable in Duty period B	Duty period B, Duty time	Total flight hours flown within 24 hour period *	Total duty time within 24 hour period
1	3	8	8	10	9	13
2	4	8	8	10	10	14
3	5	8	8	10	11 **	15
4	6	8	8	10	12 **	16
5	7	10 ***	5	7	10	14
6	8	12 ***	2	4	8	12

* Additional rest is required: FAR 121.481 (Part C): Each pilot who has flown more than eight hours during 24 consecutive hours must be given at least 18 hours of rest before being assigned to any duty with the certificate holder.

** In these two scenarios: If you are using Supplemental rules 121.505, you are limited to 10 hours of flight time in a 24 hour period for 2 man crews. These two scenarios would only be appropriate for Domestic and Flag operations.

*** In these two scenarios, FAR required rest (10 and 12 hours respectively) is greater than our contract CC rest requirement (8 hours). FAR 121.481 (Part B): If a certificate holder conducting flag operations schedules a pilot to fly more than eight hours during any 24 consecutive hours, it shall give him an intervening rest period, at or before the end of eight scheduled hours of flight duty. This rest period must be at least twice the number of hours flown since the preceding rest period, but not less than eight hours.

NON-SCHEDULED FLIGHTS: USE SUPPLEMENTAL RULES

- Non-scheduled means flights not published as a regular schedule by an airline and the schedule is not available to the public. Examples would be charters and military flights. Non-scheduled flights within the areas listed in Ops. Specs. B050 must use the Supplemental rules with the following exception:
 - Atlas is authorized by Ops. Specs. A030, and may use Scheduled flight rules (Flag rules or Domestic rules as appropriate) when conducting flights between those airports listed in Ops. Specs. C070.
 - If either your departure airport or your destination airport is not listed in C070, this exception cannot be used, and the Supplemental rules apply.
- Supplemental rules have max scheduled duty in 24 hours requirements.

Supplemental rules table.

- FAR 121.505, .507, and .509. Use for non-scheduled flights within the US, outside the US, or international flights originating in the US (or Alaska).
- Supplemental rules table: FAR 121.505, .507, and .509:

Crew type: Supplemental	Max flight deck time on any leg	Max scheduled flight time in 24 hours	7 day limit	Max scheduled duty period	Required rest	Relief period *	30 day limits	90 day limits	Annual limit
2 man 121.505 See 2 MAN CREW RULES above	8 hours max flight time scheduled per leg between required rest periods	10 hours	NA	C: 14 consecutive hours CC: 16 consecutive hours F: 16 hours within a 24 hour period C: 20 consecutive hours if associated with DH after flight	See ADDITIONAL 2 MAN CREW RULES above	24 hours off in any 7 day period	100 hours in 30 consecutive days	NA	1000 in a calendar year
3 man 121.507	8 hours *	12 hours	30 hours	C: 16 consecutive hours F & CC: 18 consecutive hours C: 20 consecutive hours if associated with DH after flight	C: 10 hours CC: 8 hours	24 hours off in any 7 day period	100 hours in 30 consecutive days	NA	1000 in a calendar year
4 man 121.509	8 hours **	16 hours	30 hours	F & C: 20 consecutive hours ***	C: 10 hours CC: 8 hours	24 hours off in 7 day period	100 hours in 30 consecutive days	NA	1000 in a calendar year

* All crew types: For Reserve (Base standby and/or Residence standby), if you are given an operating flight assignment, you must look back over the previous 7 days and have had 24 hours off. The 24 hours off in 7 days relief period is not required for strictly dead head operations and/or ground duties. If an operating flight is to occur following dead head operations and/or ground duties, the 24 hours off in 7 days relief period is required. In this case you must look back over the previous 7 days and have had 24 hours off.

** Although a flight may be scheduled above 8 hours, an individual pilot may not exceed 8 hours of flight deck time on any flight segment for this specific regulation.

*** Using CC to extend consecutive duty >20 hours would be in violation of the FARs. FAR 121.509

Optional Supplemental rules.

- FAR 121.521 and .523. These rules may be used by the Company for non-scheduled flights in the following flight operations:
 - Between any of the United States and any place outside of the United States.

- Between any 2 places outside of any of the United States.
- Between any 2 places within Alaska or within Hawaii.
- These rules cannot be utilized for 2 man crew operations.
- Optional Supplemental rules table: FAR 121.521 and .523:

Crew type: Supplemental	Max scheduled flight time in 24 hours	7 day limit	Max scheduled duty period	Required Rest	Relief period	30 day limits	90 day limits	Annual limit
3 man 121.521	12 hours	NA	C: 16 consecutive hours CC: 18 consecutive hours C: 20 consecutive hours if associated with DH after flight	C: 10 hours CC: 8 hours F: 18 hours rest if flight time >20 in 48 hour period or >24 in 72 hour period	NA	120 hours in 30 consecutive days	300 hours in 90 consecutive days	1000 in 12 consecutive months
4 man 121.523	None if adequate sleeping quarters available. 16 hours in a consecutive duty period. <u>GOM</u> 2.5.5	NA	C: 20 consecutive hours CC: 22 consecutive hours	C: 10 hours CC: 8 hours	2 times hours flown when back at base **	NA	350 hours in 90 consecutive days	1000 in 12 consecutive months

** If >7 days rest: Rest >7 days may be taken any time prior to the next flight duty.

FAR 121.525: Pilots not regularly assigned.

- For any Supplemental flight operations:
 - If scheduled in a 2 man crew for >20 hours in a month, and later given a 3 man crew assignment: You are now limited to the flight segment limitations of 121.505: Maximum of 8 hours of flight time scheduled per leg and a maximum of 10 hours of flight time scheduled in a 24 hour period.
 - If scheduled in a 2 man crew and later assigned (interrupted) as a 3 man crew and this happens twice: You are now limited to the flight segment limitations of 121.505: Maximum of 8 hours of flight time scheduled per leg and a maximum of 10 hours of flight time scheduled in a 24 hour period.
 - If scheduled in a 3 man crew for >20 hours in a month, and later given a 4 man crew assignment: You are now limited to the flight segment limitations of 121.521: Maximum of 12 hours flight time scheduled in a 24 hour period.