

## Applicable Regulations

Although "FAR" is used as the acronym for "Federal Aviation Regulations;" and found throughout the regulations themselves and hundreds of other publications, the FAA is now actively discouraging its use. "FAR" also means "Federal Acquisition Regulations." To eliminate any possible confusion, the FAA is now citing the federal aviation regulations with reference to Title 14 of the Code of Federal Regulations. For example, "FAR Part 91.3" is now referenced as "14 CFR Part 91 Section 3." The regulations change frequently; answer all questions in compliance with the most current regulations.

Three different Federal Aviation Regulation Parts can apply to operations of aircraft covered by this chapter: Parts 91, 121, and 135. Part 91 encompasses the general operation and flight rules for all aircraft operating within the United States. Often the rules of Part 121 or 135 supplement or even supersede Part 91. When an airplane is not operated for compensation, only the Part 91 rules apply. For the test, assume Part 121 or 135 rules apply unless the question specifically states otherwise.

Part 121 applies to air carriers (airlines) engaged in interstate or overseas air transportation. Carriers which operate under Part 121 engage in **common carriage**. This means that they offer their services to the public and receive compensation for those services.

Part 121 operators are subdivided into three categories. Carriers authorized to conduct scheduled operations within the 48 contiguous states are **domestic air carriers**. **Flag air carriers** conduct scheduled operations inside and outside the 48 contiguous states. A **supplemental carrier** conducts its operations anywhere that its operations specifications permit but only on a nonscheduled basis. There is a fourth category, **commercial operators of large aircraft**, but they must comply with the rules covering supplemental carriers and the distinction is unimportant to this discussion.

Part 135 applies to air taxi operators. These operators are subdivided into two categories, commuter and on-demand operations.

Other parts of the regulations apply as well. Part 61 governs certification of pilots and flight instructors. Part 67 covers the issuing and standards for medical certificates. Part 1 contains definitions and abbreviations.

# The ATP Certificate

All required flight crew of an air carrier flight must hold Airline Transport Pilot (ATP) certificates with the appropriate type rating.

The pilot-in-command of a large aircraft (gross weight over 12,500 pounds) or of a turbojet powered airplane must have a type rating from that aircraft issued under 14 CFR Part 61.

Any type rating(s) on the pilot certificate of an applicant who successfully completes an ATP checkride will be included on the ATP Certificate with the privileges and limitations of the ATP Certificate, provided the applicant passes the checkride in the same category and class of aircraft for which the applicant holds the type rating(s). However, if a type rating for that category and class of aircraft on the superseded pilot certificate is limited to VFR, that limitation will be carried forward to the person's ATP Certificate level.

An ATP certificate holder may give instruction in "air transportation service" in aircraft for which he/she holds category, class and type ratings as an ATP. An ATP may not instruct more than 8 hours a day and not more than 36 hours in any 7-day period.

If a person's pilot or medical certificate is lost or destroyed he/she can request the FAA to send a FAX confirming that they were issued. This FAX can be used as a temporary replacement for the certificates for up to 60 days.

If a pilot certificate holder is convicted of driving under the influence of alcohol or drugs, the pilot must report that conviction to the FAA, Civil Aviation Security Division within 60 days. Failure to do so is grounds for suspending or revoking any pilot or flight instructor certificates held by that person.

A **crewmember** is a person assigned to duty in the aircraft during flight. This includes pilots, flight engineers, navigators, flight attendants or anyone else assigned to duty in the airplane. A **flight crewmember** is a pilot, flight engineer or flight navigator assigned to duty in the aircraft during flight.

No one may serve as a pilot on an air carrier after that person has reached his/her 65th birthday.

Note that this rule applies to any pilot position in the aircraft, but it does not apply to other flight crew positions such as flight engineer or navigator. This is known as the "Age 65 Rule."

To exercise **ATP privileges** (such as pilot-in-command of an air carrier flight), a pilot must hold a First-Class Medical Certificate issued within the preceding (6 or 12) calendar months—depending on whether the applicant is over or under 40 years of age. To exercise commercial pilot privileges (e.g. flying a parachute jump operation) a pilot must hold either a First- or Second-Class Medical Certificate within the preceding (6 or 12) calendar months. For example, a First-Class Certificate issued in February to a pilot over 40 years of age would be good anytime in February for ATP privileges through August 31 and then good through the last day of February the next year for commercial pilot privileges.

A prerequisite for taking a practical test requires the applicant hold at least a current Third-Class Medical Certificate, if a medical certificate is required. If the practical test is scheduled in an aircraft, the applicant is required to have the Third-Class Medical Certificate. The applicant is not required to hold a medical certificate when taking a test or check for a certificate, rating, or authorization conducted in a flight simulator or flight training device.

## Flight Engineer Requirements

Many air carrier aircraft have a **flight engineer** as a required flight crewmember. All older airplanes that have a maximum takeoff weight of more than 80,000 pounds must have a flight engineer. On aircraft types certified after 1963, the aircraft's "type certificate" states whether or not a flight engineer is required.

On each flight that requires a flight engineer, at least one other member of the flight crew must be qualified to provide emergency performance of the flight engineer's duties if he/she becomes ill or incapacitated. Either pilot can fulfill the function and they need not hold a Flight Engineer Certificate to be "qualified."

## Flight Attendants

One or more **flight attendants** are required on each passenger carrying airplane operating under Part 121 that has more than nine passenger seats. The number of flight attendants is determined by the number of installed passenger seats-not by the actual number of passengers on board.

One flight attendant is required on airplanes that can seat from 10 through 50 passengers. Two flight attendants are required on airplanes having a seating capacity from 51 through 100 seats. After that, an additional flight attendant is required for each unit (or partial unit) of 50 seats above 100. For example, three flight attendants are required on airplanes having from 101 through 150 seats, and four flight attendants must be on aircraft with 151 through 200 seats.

## Experience and Training Requirements

For these definitions of training, aircraft are divided into two "groups." **Group I** aircraft are propeller driven. Turbojet aircraft are **Group II**.

- **Initial training** is the training required for crewmembers and dispatchers who have not qualified and served in the same capacity (i.e., flight engineer, co-pilot, pilot-in-command) on another aircraft of the same group.
- **Transition training** is the training required for crewmembers or dispatchers who have qualified and served in the same capacity on another aircraft of the same group.
- **Upgrade training** is the training required for crewmembers who have qualified and served as second-in-command or flight engineer on a particular airplane type (e.g., Boeing 727) before they can serve as pilot-in-command or second-in-command, respectively, on that airplane.
- **Differences training** is the training required for crewmembers or dispatchers who have qualified and served on a particular type of airplane before they can serve in the same capacity on a variation of that airplane. For example, a crewmember who is qualified on a Boeing 727-100 would need differences training to serve on a Boeing 727-200.

The pilot-in-command (PIC) of an air carrier flight must have had a proficiency check within the preceding 12 calendar months. In addition, within the preceding 6 calendar months the pilot-in-command must have either passed a proficiency check or completed an approved simulator training course. Pilots other than the PIC must have either passed a proficiency check or completed "line oriented" simulator training within the last 24 calendar months. In addition, the co-pilot must have had a **proficiency check** or any other kind of simulator training within the last 12 calendar months.

The pilot-in-command of an air carrier flight must have completed a **line check** in one of the aircraft types he/she is qualified to fly within the preceding 12 calendar months. If the PIC is qualified in more than one type aircraft, a line check in any of them satisfies this requirement.

**Recurrent training** and **checkrides** are always due during a calendar month rather than by a certain date. In addition, if recurrent training or a check is taken during, before, or after the month, it is considered to have been taken during the month it was due. For example, if a crewmember had a check due in December, he/she could take it November, December or January and it would be considered as having been done in December. Also, January would be considered a "grace month" in that the crewmember could fly, even though he/she had technically gone beyond the due date of the check.

Every pilot on an air carrier flight must have made at least 3 takeoffs and landings in the type of airplane flown within the preceding 90 days. If a pilot doesn't meet these requirements, he/she must re-establish the recency of experience by making 3 takeoffs and 3 landings under the supervision of a check airman. These takeoffs and landings must meet the following:

- At least 1 takeoff must be made with a simulated failure of the most critical engine.
- At least 1 landing must be made from an ILS approach to the lowest ILS minimums authorized for the certificate holder.
- At least 1 landing must be made to a full stop.

Air Carriers' Operations Specifications are usually written so that the instrument experience requirements of 14 CFR Part 61 do not apply to their pilots. This test asks four questions on the Part 61 requirements: 9333, 9339, 9342, & 9344.

The pilot-in-command of an airplane who has less than one hundred hours in the aircraft type has higher than published landing minimums at the destination airport. Such a pilot-in-command must add 100 feet to the published DH or MDA and add 1/2-mile (or 2,400 feet RVR) to the required visibility. If a flight diverts to an alternate airport, the pilot-in-command may use the published minimums for the approach there, but in no event may the landing minimums be less than 300 and 1. If a pilot has at least 100 hours PIC in another aircraft under Part 121 operations, he/she may reduce the current restriction by 1 hour for each landing, up to 50 hours maximum.

A Category II Instrument Approach is an ILS approach with a published minimum visibility of less than 1,800 RVR but equal to or greater than 1,200 RVR. Most CAT II approaches have published decision heights of 150 and 100 feet HAT. To fly a published CAT II approach, the aircraft must meet certain equipment and maintenance requirements and the pilots must be trained and qualified. Part 61 sets forth requirements for pilot qualification and an Air Carrier's Operations Specifications may modify or replace those requirements. The test limits its questions to Part 61 rules. To qualify for CAT II approach authorization, a pilot must take a CAT II checkride. To be eligible for the checkride he/she must meet all recent experience requirements of Part 61 and have certain recent experience with regard to ILS approaches. Within the previous 6 months the pilot must have made at least 6 ILS approaches down to minimums (CAT I minimums are OK). At least 3 of the approaches must have been hand flown. The other 3 may have been flown using an approach coupler. When issued an original CAT II certification, a pilot is restricted to a DH of 150 feet and a minimum RVR of 1,600. This restriction is lifted when the pilot logs 3 CAT II approaches to the 150-foot DH within the previous 6 months.

An aircraft dispatcher must have spent **at least five hours** observing flight deck operations within the preceding 12 calendar months. The dispatcher must have done this for **at least one of the types for each group** he/she is to dispatch.

# Flight Crew Duty Time Limits

Familiarize yourself with 14 CFR Part 117 to understand flight crew duty time limits. The limitations of *Part 117* apply to all flying by flightcrew members on behalf of any certificate holder or 91 K program manager during the applicable periods. Each flightcrew member must report for any flight duty period rested and prepared to perform his or her assigned duties. Each certificate holder must develop and implement an education and awareness training program that is approved by the Administrator. This program must provide the training to all employees of the certificate holder who are responsible for administering the provisions of Part 117, including flightcrew members, dispatchers, individuals directly involved in the scheduling of flightcrew members or in operational control, and any employee providing direct management oversight of these areas.

A person cannot be assigned to any ground or flight duties during required rest periods. The term "**deadhead**" is used to describe the transportation of crewmembers by the air carrier to or from their flight assignments when that transportation is not local in character. Time spent in deadhead air transportation cannot be considered as part of a required rest period.

Other new terms and definitions associated with Part 117 to be aware of are as follows:

**Airport/standby reserve** means a defined duty period during which a flightcrew member is required by a certificate holder to be at an airport for a possible assignment. For airport/standby reserve, all time spent in a reserve status is part of the flightcrew member's flight duty period.

**Augmented, or unaugmented operations.** An unaugmented flight contains the minimum number of flightcrew members necessary to safely pilot an aircraft. An augmented flight contains additional flightcrew members and at least one onboard rest facility, which allows flightcrew members to work in shifts and sleep during the flight.

**Calendar day** means a 24-hour period from 0000 through 2359 using Coordinated Universal Time or local time.

**Fatigue** means a physiological state of reduced mental or physical performance capability resulting from lack of sleep or increased physical activity, which can reduce a flightcrew member's alertness and ability to safely operate an aircraft or perform safety-related duties.

**Physiological night's rest** means 10 hours of rest that encompasses the hours of 0100 and 0700 at the flightcrew member's home base, unless the individual has acclimated to a different theater. If the flightcrew member has acclimated to a different theater, the rest must encompass the hours of 0100 and 0700 at the acclimated location.

**Rest period** means a continuous period determined prospectively during which the flightcrew member is free from all restraint by the certificate holder, including freedom from present responsibility for work should the occasion arise.

**Short-call reserve** means a period of time in which a flightcrew member is assigned to a reserve availability period. For short-call reserve, the reserve availability period may not exceed 14 hours.

**Theater** means a geographical area in which the distance between the flightcrew member's flight duty period departure point and arrival point differs by no more than 60 degrees longitude. The applicable flight duty period is based on the local time at the theater in which the flightcrew member was last acclimated.

***Unforeseen operational circumstance*** means an unplanned event of insufficient duration to allow for adjustments to schedules, including unforecast weather, equipment malfunction, or air traffic delay that is not reasonably expected. For augmented and unaugmented operations, if unforeseen operational circumstances arise prior to takeoff, the pilot-in-command and the certificate holder may extend the maximum flight duty period permitted up to 2 hours. For augmented and unaugmented operations, if unforeseen operational circumstances arise after takeoff, the pilot-in-command and the certificate holder may extend maximum flight duty periods to the extent necessary to safely land the aircraft at the next destination airport or alternate airport, as appropriate.

***Window of circadian low*** means a period of maximum sleepiness that occurs between 0200 and 0559 during a physiological night's rest. No certificate holder may schedule and no flightcrew member may accept more than three consecutive flight duty periods that infringe upon the window of circadian low.

## Flight Duty Periods

No certificate holder may schedule, and no flightcrew member may accept an assignment if the flightcrew member's total flight duty period (FOP) will exceed 60 flight duty hours in any 168 consecutive hours. Before beginning any reserve or flight duty period, a flightcrew member must be given at least 30 consecutive hours free from all duty within the past 168 consecutive-hour period.

No certificate holder may schedule, and no flightcrew member may accept an assignment if the flightcrew member's total flight duty period will exceed 190 FOP hours in any 672 consecutive hours.

No certificate holder may schedule, and no flightcrew member may accept an assignment for any reserve or flight duty period unless the flightcrew member is given a rest period of at least 10 consecutive hours immediately before beginning the reserve or flight duty period measured from the time the flightcrew member is released from duty. The 10-hour rest period must provide the flightcrew member with a minimum of 8 uninterrupted hours of sleep opportunity. If a flightcrew member determines that this rest period will not provide eight uninterrupted hours of sleep opportunity, he or she must notify the certificate holder. The flightcrew member cannot report for the assigned flight duty period until he or she receives this specified rest period.

For an unaugmented operation only, if a flightcrew member is provided with a rest opportunity (an opportunity to sleep) in a suitable accommodation during his or her flight duty period, the time that the flightcrew member spends there is not part of his/her flight duty period if the time spent in that accommodation is at least 3 hours, measured from the time that the flightcrew member arrives there.

A Part 117 excerpt will be available for your reference during the FAA test. You will not be required to memorize the tables; however, you will need to know which table to use—that is, which one is applicable to the question being asked.

The maximum flight time for unaugmented operations is as follows (14 CFR Part 117.11 Table A):

Time of report (acclimated)	Maximum flight time (hours)
0000-0459	8
0500-1959	9
2000-2359	8



The maximum flight duty period (hours) for lineholders is based on the number of flight segments and the scheduled time of start (14 CFR 117.13 Table B):

Scheduled time of start (acclimated time)	Maximum flight duty period (hours) for lineholders based on number of flight segments						
	1	2	3	4	5	6	7+
0000-0359	9	9	9	9	9	9	9
0400-0459	10	10	10	10	9	9	9
0500-0559	12	12	12	12	11.5	11	10.5
0600-0659	13	13	12	12	11.5	11	10.5
0700-1159	14	14	13	13	12.5	12	11.5
1200-1259	13	13	13	13	12.5	12	11.5
1300-1659	12	12	12	12	11.5	11	10.5
1700-2159	12	12	11	11	10	9	9
2200-2259	11	11	10	10	9	9	9
2300-2359	10	10	10	9	9	9	9

If the flightcrew member is not acclimated, the maximum flight duty period in Table C of Part 117 is reduced by 30 minutes (14 CFR Part 117 Table C):

Scheduled time of start (acclimated time)	Maximum flight duty period (hours) based on rest facility and number of pilots					
	Class 1 rest facility		Class 2 rest facility		Class 3 rest facility	
	3 pilots	4 pilots	3 pilots	4 pilots	3 pilots	4 pilots
0000-0559	15	17	14	15.5	13	13.5
0600-0659	16	18.5	15	16.5	14	14.5
0700-1259	17	19	16.5	18	15	15.5
1300-1659	16	18.5	15	16.5	14	14.5
1700-2359	15	17	14	15.5	13	13.5

## Dispatching and Flight Release

**Operational control** with respect to a flight, means the exercise of authority over initiating, conducting or terminating a flight.

The air carrier or commercial operator is responsible for operational control. The pilot-in-command and the director of operations are jointly responsible for the initiation, continuation, diversion, and termination of flight in compliance with regulations and the company's operations specifications. The pilot-in-command is responsible for the preflight planning and the operation of the flight.

Each flag and domestic flight must have a **dispatch release** on board. The dispatch release can be in any form but must contain the following information.

- The identification number of the aircraft
- The trip number
- The departure, destination, intermediate and alternate airports
- The type of operation (IFR or VFR)
- The minimum fuel supply
- The latest weather reports and forecasts for the complete flight (may be attached to the release rather than be part of it)

The aircraft dispatcher must provide the pilot-in-command with all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of flight. The aircraft dispatcher must provide the pilot-in-command with all available weather reports and forecasts of weather phenomena that may affect the safety of flight including adverse weather. The aircraft dispatcher must update this information during a flight.

When a domestic flight lands at an intermediate airport named in its original dispatch release and departs again within 1 hour, it does not need a new dispatch release. If it remains on the ground for more than 1 hour, a *redispatch* release must be issued.

When a flag flight lands at an intermediate airport named in its original dispatch release and departs again within 6 hours, it does not need a new dispatch release. If it remains on the ground for more than 6 hours, a redispatch is required.

The pilot-in-command of a flight shall carry in the airplane to its destination:

- A copy of the completed load manifest
- A copy of the dispatch release
- A copy of the flight plan.

The air carrier must keep copies of these documents for at least 3 months.

Each supplemental carrier or commercial operator flight must have a **flight release** on board. The flight release can be in any form but must contain the following information:

- The company or organization name
- Make, model and registration number of the aircraft used
- The flight or trip number and the date of the flight
- The name of each flight crewmember, flight attendant and the pilot designated as pilot-in-command
- The departure, destination, intermediate and alternate airports and route
- The type of operation (e.g., IFR or VFR)
- The minimum fuel supply
- The latest weather reports and forecasts for the complete flight (may be attached to the release rather than be part of it)

Before beginning a flight, the pilot-in-command must obtain all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight. During a flight, the pilot-in-command must obtain any additional available information of meteorological conditions and irregularities of facilities and services that may affect the safety of the flight.

A provisional airport is defined as an airport approved by the Administrator for use by a certificate holder for the purpose of providing service to a community when the regular airport used by the certificate holder is not available. A person who is not authorized to conduct direct air carrier operations, but who is authorized by the Administrator to conduct operations as a U.S. commercial operator, will be issued an Operating Certificate. Each certificate holder conducting domestic, flag, or commuter operations must obtain operations specifications containing, among many other provisions, the kinds of operations authorized.

Extended-range twin-engine operational performance standards (ETOPS) is a rating accompanied by a time limit (such as 180-minute ETOPS) that allows twin-engine civil transport aircraft to fly over oceans and deserts provided that the aircraft is never more than 180 minutes away from a suitable airfield. An ETOPS "entry point" is the first point on an ETOPS route at which the airplane is farther than a distance of 60 minutes flying time, with one engine inoperative, from an emergency or diversion airport that is adequate for an airplane with two engines.

When filing an alternate using the 180-minute ETOPS rule, the alternate airport must have rescue and firefighting services (RFFS) that meet ICAO Category 4 standard or higher. If filing an alternate using the beyond-180-minute ETOPS rule, the alternate must have RFFS that meet the ICAO Category 4 standard or higher, and the aircraft must remain within the ETOPS authorized diversion time from an adequate airport that has RFFS equal to ICAO Category 7 or higher.