

§61.91

authorized instructor on board an airship, and no person other than a required flight crewmember is carried on the aircraft.

(c) A student pilot seeking a sport pilot certificate must comply with the provisions of paragraphs (a) and (b) of this section and may not act as pilot in command—

(1) Of an aircraft other than a light-sport aircraft;

(2) At night;

(3) At an altitude of more than 10,000 feet MSL or 2,000 feet AGL, whichever is higher;

(4) In Class B, C, and D airspace, at an airport located in Class B, C, or D airspace, and to, from, through, or on an airport having an operational control tower without having received the ground and flight training specified in §61.94 and an endorsement from an authorized instructor;

(5) Of a light-sport aircraft without having received the applicable ground training, flight training, and instructor endorsements specified in §61.327 (a) and (b).

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§61.91 [Reserved]

§61.93 Solo cross-country flight requirements.

(a) *General.* (1) Except as provided in paragraph (b) of this section, a student pilot must meet the requirements of this section before—

(i) Conducting a solo cross-country flight, or any flight greater than 25 nautical miles from the airport from where the flight originated.

(ii) Making a solo flight and landing at any location other than the airport of origination.

(2) Except as provided in paragraph (b) of this section, a student pilot who seeks solo cross-country flight privileges must:

(i) Have received flight training from an instructor authorized to provide flight training on the maneuvers and procedures of this section that are appropriate to the make and model of aircraft for which solo cross-country privileges are sought;

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(ii) Have demonstrated cross-country proficiency on the appropriate maneuvers and procedures of this section to an authorized instructor;

(iii) Have satisfactorily accomplished the pre-solo flight maneuvers and procedures required by §61.87 of this part in the make and model of aircraft or similar make and model of aircraft for which solo cross-country privileges are sought; and

(iv) Comply with any limitations included in the authorized instructor's endorsement that are required by paragraph (c) of this section.

(3) A student pilot who seeks solo cross-country flight privileges must have received ground and flight training from an authorized instructor on the cross-country maneuvers and procedures listed in this section that are appropriate to the aircraft to be flown.

(b) *Authorization to perform certain solo flights and cross-country flights.* A student pilot must obtain an endorsement from an authorized instructor to make solo flights from the airport where the student pilot normally receives training to another location. A student pilot who receives this endorsement must comply with the requirements of this paragraph.

(1) Solo flights may be made to another airport that is within 25 nautical miles from the airport where the student pilot normally receives training, provided—

(i) An authorized instructor has given the student pilot flight training at the other airport, and that training includes flight in both directions over the route, entering and exiting the traffic pattern, and takeoffs and landings at the other airport;

(ii) The authorized instructor who gave the training endorses the student pilot's logbook authorizing the flight;

(iii) The student pilot has a solo flight endorsement in accordance with §61.87 of this part;

(iv) The authorized instructor has determined that the student pilot is proficient to make the flight; and

(v) The purpose of the flight is to practice takeoffs and landings at that other airport.

(2) Repeated specific solo cross-country flights may be made to another airport that is within 50 nautical miles of

the airport from which the flight originated, provided—

(i) The authorized instructor has given the student flight training in both directions over the route, including entering and exiting the traffic patterns, takeoffs, and landings at the airports to be used;

(ii) The authorized instructor who gave the training has endorsed the student's logbook certifying that the student is proficient to make such flights;

(iii) The student has a solo flight endorsement in accordance with § 61.87 of this part; and

(iv) The student has a solo cross country flight endorsement in accordance with paragraph (c) of this section; however, for repeated solo cross country flights to another airport within 50 nautical miles from which the flight originated, separate endorsements are not required to be made for each flight.

(c) *Endorsements for solo cross-country flights.* Except as specified in paragraph (b)(2) of this section, a student pilot must have the endorsements prescribed in this paragraph for each cross-country flight:

(1) *Student pilot certificate endorsement.* A student pilot must have a solo cross-country endorsement from the authorized instructor who conducted the training, and that endorsement must be placed on that person's student pilot certificate for the specific category of aircraft to be flown.

(2) *Logbook endorsement.* (i) A student pilot must have a solo cross-country endorsement from an authorized instructor that is placed in the student pilot's logbook for the specific make and model of aircraft to be flown.

(ii) For each cross-country flight, the authorized instructor who reviews the cross-country planning must make an endorsement in the person's logbook after reviewing that person's cross-country planning, as specified in paragraph (d) of this section. The endorsement must—

(A) Specify the make and model of aircraft to be flown;

(B) State that the student's preflight planning and preparation is correct and that the student is prepared to make the flight safely under the known conditions; and

(C) State that any limitations required by the student's authorized instructor are met.

(d) *Limitations on authorized instructors to permit solo cross-country flights.* An authorized instructor may not permit a student pilot to conduct a solo cross-country flight unless that instructor has:

(1) Determined that the student's cross-country planning is correct for the flight;

(2) Reviewed the current and forecast weather conditions and has determined that the flight can be completed under VFR;

(3) Determined that the student is proficient to conduct the flight safely;

(4) Determined that the student has the appropriate solo cross-country endorsement for the make and model of aircraft to be flown; and

(5) Determined that the student's solo flight endorsement is current for the make and model aircraft to be flown.

(e) *Maneuvers and procedures for cross-country flight training in a single-engine airplane.* A student pilot who is receiving training for cross-country flight in a single-engine airplane must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communication, except that a student pilot seeking a sport pilot certificate must only receive and log flight training on the use of radios installed in the aircraft to be flown;

(10) Takeoff, approach, and landing procedures, including short-field, soft-field, and crosswind takeoffs, approaches, and landings;

(11) Climbs at best angle and best rate; and

(12) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC directives. For student pilots seeking a sport pilot certificate, the provisions of this paragraph only apply when receiving training for cross-country flight in an airplane that has a V_H greater than 87 knots CAS.

(f) *Maneuvers and procedures for cross-country flight training in a multiengine airplane.* A student pilot who is receiving training for cross-country flight in a multiengine airplane must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications;

(10) Takeoff, approach, and landing procedures, including short-field, soft-field, and crosswind takeoffs, approaches, and landings;

(11) Climbs at best angle and best rate; and

(12) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC directives.

(g) *Maneuvers and procedures for cross-country flight training in a helicopter.* A student pilot who is receiving training for cross-country flight in a helicopter must receive and log flight training for the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications; and

(10) Takeoff, approach, and landing procedures.

(h) *Maneuvers and procedures for cross-country flight training in a gyroplane.* A student pilot who is receiving training for cross-country flight in a gyroplane must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communication, except that a student pilot seeking a sport pilot certificate must only receive and log flight training on the use of radios installed in the aircraft to be flown; and

(10) Takeoff, approach, and landing procedures, including short-field and soft-field takeoffs, approaches, and landings.

(i) *Maneuvers and procedures for cross-country flight training in a powered-lift.* A student pilot who is receiving training for cross-country flight training in a powered-lift must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communications;

(10) Takeoff, approach, and landing procedures that include high-altitude, steep, and shallow takeoffs, approaches, and landings; and

(11) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC directives.

(j) *Maneuvers and procedures for cross-country flight training in a glider.* A student pilot who is receiving training for cross-country flight in a glider must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Landings accomplished without the use of the altimeter from at least 2,000 feet above the surface; and

(10) Recognition of weather and upper air conditions favorable for cross-country soaring, ascending and descending flight, and altitude control.

(k) *Maneuvers and procedures for cross-country flight training in an airship.* A student pilot who is receiving training for cross-country flight in an airship must receive and log flight training for the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(2) Use of aircraft performance charts pertaining to cross-country flight;

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(4) Emergency procedures;

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach;

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance;

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown;

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications;

(9) Use of radios for VFR navigation and two-way communication, except that a student pilot seeking a sport pilot certificate must only receive and log flight training on the use of radios installed in the aircraft to be flown;

(10) Control of air pressure with regard to ascending and descending flight and altitude control;

(11) Control of the airship solely by reference to flight instruments, except for a student pilot seeking a sport pilot certificate; and

(12) Recognition of weather and upper air conditions conducive for the direction of cross-country flight.

(1) *Maneuvers and procedures for cross-country flight training in a powered parachute.* A student pilot who is receiving training for cross-country flight in a powered parachute must receive and log flight training in the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass, as appropriate.

(2) Use of aircraft performance charts pertaining to cross-country flight.

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognizing critical weather situations and estimating visibility while in flight.

(4) Emergency procedures.

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach.

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance.

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown.

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications.

(9) If equipped for flight with navigation radios, the use of radios for VFR navigation.

(10) Recognition of weather and upper air conditions favorable for the cross-country flight.

(11) Takeoff, approach and landing procedures.

(m) *Maneuvers and procedures for cross-country flight training in a weight-shift-control aircraft.* A student pilot who is receiving training for cross-country flight in a weight-shift-control aircraft must receive and log flight training for the following maneuvers and procedures:

(1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass, as appropriate.

(2) Use of aircraft performance charts pertaining to cross-country flight.

(3) Procurement and analysis of aeronautical weather reports and forecasts, including recognizing critical weather situations and estimating visibility while in flight.

(4) Emergency procedures.

(5) Traffic pattern procedures that include area departure, area arrival, entry into the traffic pattern, and approach.

(6) Procedures and operating practices for collision avoidance, wake turbulence precautions, and windshear avoidance.

(7) Recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the cross-country flight will be flown.

(8) Procedures for operating the instruments and equipment installed in the aircraft to be flown, including recognition and use of the proper operational procedures and indications.

(9) If equipped for flight using navigation radios, the use of radios for VFR navigation.

(10) Recognition of weather and upper air conditions favorable for the cross-country flight.

(11) Takeoff, approach and landing procedures, including crosswind approaches and landings.

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§ 61.94 Student pilot seeking a sport pilot certificate or a recreational pilot certificate: Operations at airports within, and in airspace located within, Class B, C, and D airspace, or at airports with an operational control tower in other airspace.

(a) A student pilot seeking a sport pilot certificate or a recreational pilot certificate who wants to obtain privileges to operate in Class B, C, and D airspace, at an airport located in Class B, C, or D airspace, and to, from, through, or at an airport having an operational control tower, must receive and log ground and flight training from an authorized instructor in the following aeronautical knowledge areas and areas of operation:

(1) The use of radios, communications, navigation systems and facilities, and radar services.

(2) Operations at airports with an operating control tower, to include three takeoffs and landings to a full stop, with each landing involving a flight in the traffic pattern, at an airport with an operating control tower.

(3) Applicable flight rules of part 91 of this chapter for operations in Class B, C, and D airspace and air traffic control clearances.

(4) Ground and flight training for the specific Class B, C, or D airspace for which the solo flight is authorized, if applicable, within the 90-day period preceding the date of the flight in that airspace. The flight training must be received in the specific airspace area for which solo flight is authorized.

(5) Ground and flight training for the specific airport located in Class B, C, or D airspace for which the solo flight is authorized, if applicable, within the 90-day period preceding the date of the flight at that airport. The flight and ground training must be received at the specific airport for which solo flight is authorized.

(b) The authorized instructor who provides the training specified in paragraph (a) of this section must provide a logbook endorsement that certifies the student has received that training and is proficient to conduct solo flight in that specific airspace or at that specific airport and in those aeronautical