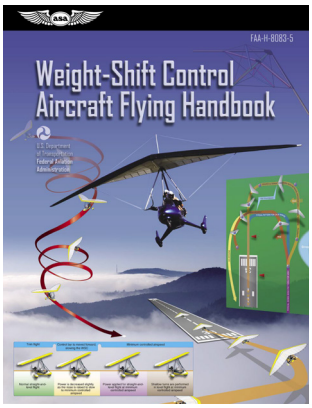
November 2025

UPDATE

Weight-Shift Control Aircraft Flying Handbook



The following addendum, dated October 2025, revises FAA-H-8083-5, *Weight-Shift Control Aircraft Flying Handbook*, published by the FAA in 2008.

FAA
Flight Standards Service
General Aviation & Commercial Division
Training & Certification Group
Testing Standards Section

FAA-H-8083-5, Weight-Shift Control Aircraft Flying Handbook—Addendum

Due to the Modernization of Special Airworthiness Certification (MOSAIC) Rule, which was published on July 18, 2025, and is effective October 22, 2025, the FAA created this addendum to the Weight-Shift Control Aircraft Flying Handbook, FAA-H-8083-5. Until the revision of FAA-H-8083-5 is published, this addendum is considered part of the current edition of the handbook and should be used as a reference.

*In **Chapter 1, Introduction to Weight-Shift Control**, History, Motorized Hang Gliders, the second paragraph of the A Maturing Industry section on pages 1-4 and 1-5 will be revised as follows:*

The propeller was moved lower for better takeoff and flight characteristics, wheels were added, and the trike was born at the end of the 1970s. A trike describes a Rogallo-type wing with a three-wheeled carriage underneath (much like a tricycle arrangement with one wheel in front and two in back). Trike is the industry term to describe WSC aircraft. [Figure 1-11] The major trike manufacturers were formed in the early 1980s and continue to deliver trikes worldwide today.

*In **Chapter 1, Introduction to Weight-Shift Control**, the Light Sport Aircraft (LSA) section on pages 1-6 and 1-7 will be revised as follows:*

Light-Sport Category Aircraft

To address the evolution of the ultralight vehicle and its community of sport users, the FAA issued new rules on September 1, 2004. These rules created a new aircraft certification process titled light-sport category aircraft under 14 CFR part 21 and a new classification of FAA pilot certification to fly light-sport category aircraft, called Sport Pilot. In 2025, the FAA removed the definition of light-sport aircraft from 14 CFR part 1, section 1.1, and created 14 CFR part 61, section 61.316, “What are the performance limits and design requirements for the aircraft that a sport pilot may operate?” Additional guidelines established by the FAA can be found in 14 CFR part 61. [Figure 1-12] This handbook focuses on the WSC aircraft.

Aircraft certificated as light-sport category aircraft exceed the limitations defined for ultralight vehicles and require that the pilot possess, at a minimum, a Sport Pilot certificate. The sport pilot rule states the limitations and privileges

for both sport pilots and sport pilot instructors under 14 CFR part 61, subparts J and K. In addition, the regulations governing the sport pilot rule define the training requirements of prospective sport pilots and the airworthiness requirements (14 CFR part 21) for their aircraft.

The caption of Figure 1-12 on page 1-6 will be revised as follows:

Figure 1-12. Examples of light-sport category aircraft, from top to bottom: gyroplane, airplane, powered parachute, and weight-shift control aircraft.

*In **Chapter 1, Introduction to Weight-Shift Control**, Light Sport Aircraft (LSA), the first two paragraphs of the Weight-Shift Control Aircraft section on page 1-7 will be revised as follows:*

WSC aircraft are single- and two-place trikes that do not meet the criteria of an ultralight vehicle but do meet the criteria of 14 CFR part 61, section 61.316. The definition for weight-shift-control aircraft can be found in 14 CFR part 1. Flight control of the aircraft depends on the wing's ability to flexibly deform rather than on the use of control surfaces.

The common acronyms for these aircraft are WSC (weight-shift control); WSCL (WSC land), which can be wheels or ski equipped; and WSCS (WSC Sea) for water operations. A WSC used for sport and private pilot flying must be registered with an FAA N-number, have an airworthiness certificate, a pilot's operating handbook (POH), and/or limitations with a weight and loading document aboard. The aircraft must be maintained properly by the aircraft owner or other qualified personnel, and the aircraft logbooks must be available for inspection. Dual flight controls are required in two-seat aircraft used for training.

*In **Chapter 1, Introduction to Weight-Shift Control**, Light Sport Aircraft (LSA), the first bullet of the Weight-Shift Control Aircraft section on page 1-8 will be revised as follows:*

Since the WSC aircraft is designed without the weight and drag of a tail, the performance is significantly increased. The aircraft can take off and land in short fields, has good climb rates, can handle a large payload, has a good glide ratio, and is fuel efficient. The WSC typically can carry 600 pounds of people, fuel, and baggage.

*In **Chapter 1, Introduction to Weight-Shift Control**, the Weight-Shift Control LSA Requirements section on page 1-8 will be removed.*

*In **Chapter 1, Introduction to Weight-Shift Control**, Flight Operations and Pilot Certificates, a new paragraph will be added on page 1-8 as follows:*

The FAA amended the regulations for sport pilots and flight instructors with a sport pilot rating. The design and performance limitations were expanded in July 2025 for aircraft that sport pilots are permitted to operate (14 CFR part 61, section 61.316 (subparts J and K)).

*In **Chapter 1, Introduction to Weight-Shift Control**, Flight Operations and Pilot Certificates, the Basic Pilot Eligibility subsection on page 1-9 will be revised as follows, and Figure 1-17 will be removed:*

Title 14 CFR, part 61 specifies the requirements to earn a pilot certificate. This regulation also states the pilot applicant must be able to read, speak, write, and understand the English language. The FAA Practical Test Standards (PTS) and Airman Certification Standards (ACS) establish the standards for the knowledge, risk management, and skill requirements necessary for the issuance of a pilot certificate. It is important to reference these documents to understand the knowledge, risk management, skills, and experience required to obtain a pilot certificate and/or privilege to fly a WSC aircraft.

Pilot applicants must hold a valid U.S. driver's license, a current third-class medical certificate issued under 14 CFR part 67 or comply with BasicMed issued under 14 CFR part 68. In addition to a valid driver's license, a medical certificate, or compliance with BasicMed, each pilot must determine before each flight that he or she is medically fit to operate the aircraft in a safe manner. If using a valid driver's license to exercise the privileges of a sport pilot certificate, then all restrictions on that driver's license are also upheld. A current FAA third-class medical certificate must be obtained, or the pilot must comply with BasicMed to exercise the privileges of a WSC private pilot certificate. Existing pilots, including previous student pilots, who have had their FAA medical certificate or most recent application denied, revoked, withdrawn, or suspended by the FAA, are not allowed to operate using a driver's license until the denial on the airman record is cleared by having a valid third-class medical certificate issued.

*In **Chapter 1, Introduction to Weight-Shift Control**, the fourth paragraph of the Aeronautical Decision-Making section on page 1-11 will be revised as follows:*

The differences in the more complex airplane requirement scenarios presented in the Pilot's Handbook of Aeronautical Knowledge versus WSC aircraft characteristics can easily be compared.

*In **Chapter 3, Components and Systems**, Flight Deck, the last two paragraphs of the Dashboards and Instrument Panels subsection on page 3-17 will be revised as follows:*

Dashboards are as varied as the manufacturers and the purpose of the aircraft, from simple to complex. Classical analog gauges are common, but digital instruments are also popular with light-sport category aircraft.

Overall, no instrumentation is required for experimental light-sport category aircraft, but for special light-sport category aircraft, an airspeed indicator is usually required, and engine manufacturers require certain instruments to be installed on the aircraft to monitor the performance of the particular engine. For further information, refer to 14 CFR part 91, section 91.205.

*In **Chapter 3, Components and Systems**, Flight Deck, Powerplant System, the first paragraph of the Fuel System Components subsection on page 3-20 will be revised as follows:*

The WSC aircraft is equipped with fuel tanks usually ranging in capacity from 5 to 20 gallons. As with any aircraft, knowing how much fuel the tank holds is crucial to flight operations. Light-sport category aircraft have no limitations on the size of the fuel tank, unlike its ultralight vehicle predecessor.

*In **Chapter 3, Components and Systems**, Flight Deck, Powerplant System, the second paragraph of the Propeller subsection on page 3-21 will be revised as follows:*

Propellers typically consist of two, three, or four blades. [Figures 3-53 and 3-54]. Propellers can be fixed-pitch, ground-adjustable, or automated controllable pitch. The ground adjustable propeller pitch should be properly set for your WSC aircraft to provide the recommended rpm of the engine at full power. The POH should be consulted if there is any question about the propeller rpm, adjusting, or replacing the propeller. Propellers are specifically matched to the engine power, gear reduction, and speed range of the aircraft. Therefore, not just any propeller may be put on any engine. The POH requires specific propellers that are matched for each aircraft.

*In **Chapter 4, Powerplants**, the third paragraph of the Introduction section on page 4-2 will be revised as follows:*

Preflight information, along with maintenance schedules and procedures, can be found in the pilot's operating handbook (POH) and/or maintenance references from the manufacturers. Engine inspections and maintenance must be performed and documented in a logbook. A pilot should review this logbook before flying an unfamiliar aircraft.

*In **Chapter 4, Powerplants**, the Exhaust Systems: Four Stroke Engine Exhaust Systems section on page 4-7 will be revised as follows:*

Four-stroke engines are not as sensitive as two-stroke engines because they have exhaust valves and, therefore, do not need the precision pulse-tuned exhaust system. However, directing the exhaust out appropriately and reducing the noise are important considerations. Pilots should use the manufacturer's recommended configurations.

*In **Chapter 4, Powerplants**, the first paragraph of the Propeller section on page 4-8 will be revised as follows:*

The propeller provides the necessary thrust to push the WSC aircraft through the air. The engine power is used to rotate the propeller, which generates thrust very similar to the manner in which a wing produces lift. The amount of thrust produced depends on the airfoil shape, the propeller blade angle of attack (AOA), and the engine rpm. [Figure 4-9] WSC aircraft are equipped with either a fixed-pitch, ground-adjustable, or automated controllable pitch propeller.

*In **Chapter 4, Powerplants**, the first paragraph of the Ignition System section on page 4-12 will be revised as follows:*

The typical ignition system on WSC aircraft provides the spark that ignites the fuel/air mixture in the cylinders and is made up of magneto/generators, control boxes, spark plugs, high-voltage leads, and the ignition switch. For most engines designed specifically for aircraft, a magneto/generator uses a permanent magnet to generate an electric current independent of the aircraft's electrical system, which might include a battery. The aircraft electrical system can fail—the battery can go dead. However, this has no effect on the ignition system.

*In **Chapter 5, Preflight and Ground Operations**, the Preflight Inspection section on page 5-15 will be revised as follows:*

Each aircraft must have a routine preflight inspection before flight. Use a written checklist during preflight and ground operations to maintain an established procedure. [Figure 5-40] A written checklist is required so nothing is forgotten. Ground checklists include preflight preparation, preflight inspection, occupant preflight brief, flight deck management, startup, taxi, before takeoff, and aircraft shutdown. Be smart and follow the regulations—use a written checklist. All checklists should be secured so they do not fly out of the flight deck in flight and hit the propeller. Securing with zippered pockets and having lanyards for the checklists is recommended. Aircraft manufacturers have checklists that come with the aircraft. Pilots with an experimental aircraft may need to develop their own.

*In **Chapter 5, Preflight and Ground Operations**, the last paragraph of the Preflight Inspection: Certificates and Documents section on page 5-16 will be revised as follows and Figure 5-42 will be removed:*

To fly the aircraft with a Private Pilot certificate with a weight-shift control rating, the pilot needs a valid FAA minimum third-class medical certificate or comply with BasicMed, accompanied by a government-issued photo identification and a Private Pilot certificate for WSC aircraft. See Chapter 1, Introduction to Weight-Shift Control, for details on specific pilot certificates and privileges.

*In **Chapter 5, Preflight and Ground Operations**, the first paragraph of the Preflight Inspection: Occupant Preflight Briefing section on page 5-22 will be revised as follows:*

A preflight briefing is required to ensure the passenger is informed on the proper use of safety equipment and exit information. This can be done before entering the aircraft and must be accomplished before starting the engine. Manufacturers of WSC aircraft typically have printed briefing cards that should be used. The following is a comprehensive checklist that can be used as a guideline for any preflight briefing:

*In **Chapter 5, Preflight and Ground Operations**, the twelfth bullet of the Preflight Inspection: Occupant Preflight Briefing section on page 5-22 will be revised as follows:*

- Brief the passenger on any experimental operating limitations.

*In **Chapter 8, The National Airspace System**, Figures 8-2, 8-3, and 8-6 on pages 8-3 and 8-5 will be revised as follows:*

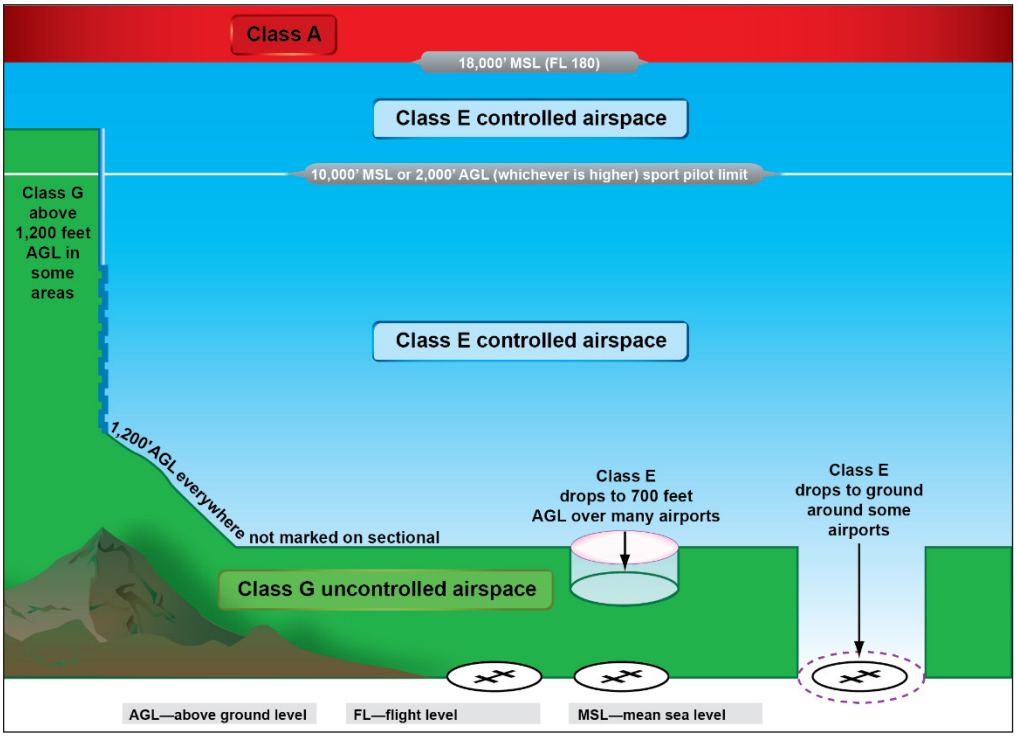


Figure 8-2. Class G uncontrolled airspace and Class E controlled airspace.

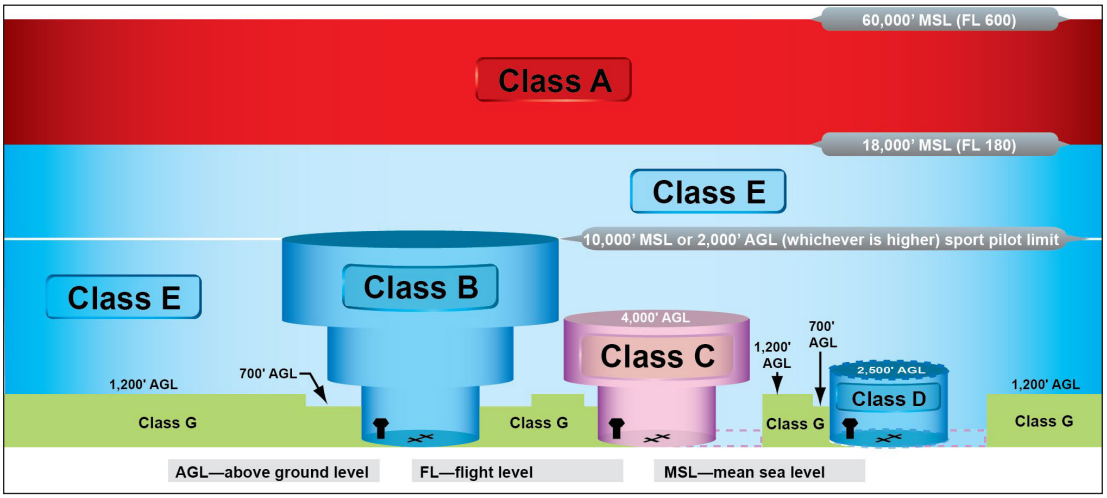


Figure 8-3. Class G airspace extends from the surface to the base of controlled airspace (Class B, C, D, and E).

Basic VFR Weather Minimums			
Airspace*		Flight visibility†	Distance from clouds
Class A		Not applicable	Not applicable
Class B		3 statute miles	Clear of clouds
Class C		3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class D		3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class E	Less than 10,000 feet MSL	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
	At or above 10,000 feet MSL*	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal
Class G	1,200 feet or less above the surface (regardless of MSL altitude)		
	Day, except as provided in 14 CFR section 91.155(b)	1 statute mile†	clear of clouds
	Night, except as provided in 14 CFR section 91.155(b)	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
	More than 1,200 feet above the surface but less than 10,000 feet MSL		
	Day	1 statute mile†	500 feet below 1,000 feet above 2,000 feet horizontal
	Night‡	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
	More than 1,200 feet above the surface and at or above 10,000 feet MSL*		
		5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal

† Sport pilots must maintain at least 3 SM or better visibility in all airspace and maintain visual reference to the surface.
‡ Sport pilots are not authorized to fly at night unless they comply with 14 CFR part 61, section 61.329.
* Sport pilots are not authorized to fly above 10,000 feet MSL or 2,000 feet AGL, whichever is higher.

Figure 8-6. Basic weather minimums for WSC operations in the different classes of airspace.

*In **Chapter 12, Night Operations**, the first paragraph of the Pilot Requirements section on page 12-2 will be revised as follows:*

Flying at night requires additional pilot skills. Sport pilots are not permitted to operate at night unless they have received the required training and endorsement by an authorized instructor as required by 14 CFR part 61, section 61.315. It is possible to have a private pilot certificate with a "Night Flight Prohibited" limitation if the pilot did not complete night flight training and is restricted from night flight. This is an option for pilots who want a private pilot certificate but do not plan to fly at night. If the pilot first obtains the private certificate with the night limitation, the limitation can be removed after completing the private pilot WSC night training. The training that must be accomplished at night for WSC private pilot night flying privileges is:

*On page G-4 of the **Glossary**, the definition for "Certified Flight Instructor with a Sport Pilot Rating (CFIS)" will be revised as follows, and the definition for "CFIS" will be removed:*

Flight Instructor with a Sport Pilot Rating. A flight instructor authorized by the FAA under 14 CFR part 61, subpart K, to provide flight instruction in the designated category of aircraft for sport pilots only.

*On page G-7 of the **Glossary**, the definition for "E-LSA (Experimental Light-Sport Aircraft)" will be revised as follows:*

Experimental Light-Sport Category Aircraft. An aircraft issued a special airworthiness certificate with an experimental designation under 14 CFR part 21.

*On page G-10 of the **Glossary**, the definition for "Light-Sport Aircraft (LSA)" will be revised as follows, and the definition for "LSA" will be removed:*

Light-Sport Category Aircraft. An aircraft that meets the requirements defined in 14 CFR parts 21 and 22, regardless of airworthiness certification.

*On page G-15 of the **Glossary**, the definitions for "Safety Directive" and "S-LSA (Special Light-Sport Aircraft)" will be revised as follows:*

Safety directive. A manufacturer's issued change to a special light-sport category aircraft that must be complied with. This is similar to an airworthiness directive, which is a regulatory notice sent out by the FAA to the registered owner of an aircraft informing the owner of a condition that prevents the aircraft from continuing to meet its conditions for airworthiness. Airworthiness Directives (AD notes) must be complied with within the required time limit, and the fact of compliance, the date of compliance, and the method of compliance must be recorded in the aircraft's maintenance records.

Special Light-Sport Category Aircraft. An aircraft issued a special airworthiness certificate in accordance with 14 CFR part 21, section 21.190, in the light-sport category. These aircraft meet the ASTM industry-developed consensus standards.

*On page G-16 of the **Glossary**, the definitions for "Sport Pilot Certificate" and "Student Pilot Certificate" will be revised as follows:*

Sport Pilot Certificate (for WSC). An FAA-issued pilot certificate, allowing the holder to operate an aircraft that meets the performance limits and design requirements of 14 CFR part 61, section 61.316, in the category and class for which they are endorsed to do so.

Student Pilot Certificate. An FAA-issued certificate that permits student pilots to exercise solo pilot privileges with limitations (for example, the prohibition to carry passengers).

*On page G-18 of the **Glossary**, the definitions for "Two-stroke Engine" and "Ultralight" will be revised as follows, and the definition for "Vehicle" will be removed:*

Two-stroke engine. A simple form of reciprocating engine that completes its operating cycle in two strokes of its piston, one down and one up. Two-stroke-cycle engines are inefficient in their use of fuel and require either the pre-mixing of oil with fuel or an oil injection system.

Ultralight vehicle. A single-person-only vehicle as defined by 14 CFR section 103.1.