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THE PREDATOR

- Breezing Along in a Breezer
- Sport Pilots and Air Space
- The Sport Pilot Checkride



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The ABCs of Airspace...

and where sport pilots may fly

The sport pilot/light-sport aircraft (SP/LSA) rule is bringing more pilots into the FAA-regulated fold. Perhaps you are one of them. Maybe you have been flying an ultralight from a backyard field or nontowered airport for years, content with circling the local neighborhood. Or maybe you have flown cross-country on occasion, depending on verbal advice from other pilots regarding where you should or should not fly.

Perhaps you were an active private pilot in years past, but dropped out for one reason or another. Or maybe you are brand new to the game, enticed by the lower cost of entry.

Whatever the case, as you enter the brave new sport pilot world, you will need to develop a broader and deeper understanding of the airspace in which you fly. Broader and deeper is a good way to think about it. The Federal Aviation Administration (FAA) classifies all portions of the three-dimensional "ocean of air" above the United States and its territorial waters according to its purpose in an overall scheme known as the National Airspace System (NAS). Some of the classifications are alphabetic, and others use acronyms.

So, like Dick and Jane in our primary readers, we must learn our ABCs of airspace. It may seem daunting at first, but like our kindergarten counterparts, the more we use the airspace system, the more familiar and natural it will become. Open your books to the first page.

Controlled and Uncontrolled Airspace

Airspace within the NAS is classified as controlled, uncontrolled, special use, or other. We'll start by discussing controlled and uncontrolled airspace.

If your last piloting experiences occurred before 1993, you are accustomed to hearing terms such as "Positive Control Area," "Terminal Control Area," or "Control Zone."

The FAA classifies all portions of the three-dimensional "ocean of air" above the United States and its territorial waters according to its purpose in an overall scheme known as the National Airspace System (NAS).

However, in 1993 the FAA reclassified United States airspace to agree with that of the International Civil Aviation Organization (ICAO), exchanging the old, familiar terms for the alphabetic designations A, B, C, D, E, designating controlled airspace, and G, which is uncontrolled airspace.

Class A airspace has the most restrictive rules and Class G the least, with the others in between. Let's take a look

at each one, concentrating on those that most affect sport pilots. As we proceed, refer to the accompanying illustrations and tables for the requirements applicable to each area.

Class A

Generally, Class A airspace covers the entire 48 contiguous states and Alaska, including territorial waters out to the 12-nautical-mile limit from the coast. It starts at 18,000 feet mean sea level (MSL) and goes up to 60,000 feet (FL600). All traffic within Class A airspace must have an instrument flight plan on file with air traffic control (ATC) and operate under instrument flight rules (IFR). Because sport pilots are not authorized for instrument flight or flight above 10,000 feet MSL, Class A airspace is off limits, so we won't spend any more time on it.

A good mnemonic for Class A airspace is "All over at Altitude."

Class B

FAA classifies the airspace surrounding the largest U.S. airports as Class B, the second most restrictive classification. The shape of Class B airspace is shown on sectional charts and is often described as an upside-down wedding cake centered at the airport. Each ring of the wedding cake has a floor and a diameter, with the floor of the innermost ring at the surface. The ceiling of Class B airspace is 10,000 feet MSL. Note that if you are flying below the floor of a ring or above the ceiling, you are outside the Class B airspace.

Generally speaking, you must be a private pilot to operate in Class B airspace. Student pilots, sport pilots, and recreational pilots may operate in Class B, but only after receiving special training and logbook endorsements. However, as shown in the accompanying tables, aircraft entering Class B airspace must be equipped with a two-way radio, transponder, and altitude-reporting encoder. Do you really want to go to the expense and trouble of installing that equipment in your Challenger II, only to mix it up with heavy jet traffic? The best advice for sport pilots: avoid Class B airspace.

Think of Class B as “Big Airport.”

The Mode C Veil

Before we leave Class B, we need to talk about another confusing feature of that airspace, namely, the Mode C Veil. Surrounding Class B airspace is an area 30 nautical miles (nm) in radius extending from the surface to 10,000 feet MSL within which all aircraft must be equipped with a transponder/encoder. If you fly your light-sport aircraft (LSA) inside the Mode C Veil, but stay below the floor of the Class B airspace, you are still required to have and use the transponder/encoder.

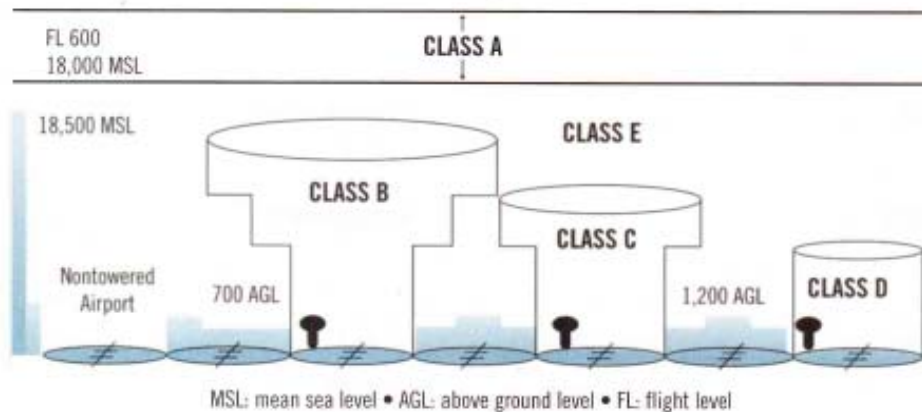
But, there is an exception to the rule that may apply to some LSA: if your aircraft was originally certificated without an engine-driven electrical system and has not been subsequently modified to include one, you are not required to have a transponder/encoder.

A long-running Internet discussion has occurred concerning what constitutes an engine-driven electrical system, especially as it relates to the charging coils and the lighting coils found on typical two-stroke engines. Here’s the bottom line: If you have any engine-driven electrical device that charges the battery, then you have an engine-driven electrical system. Note, however, that a wind generator or a solar battery

charger is not engine-driven and thus would qualify for the exemption.

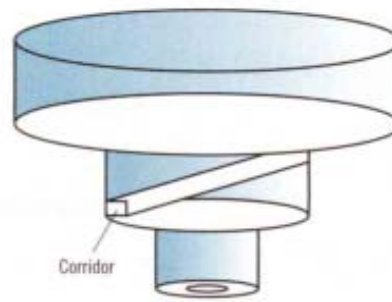
Class C

Class C airspace is less restrictive than Class B and surrounds airports that have a control tower, radar approach control, and a certain minimum number of IFR operations or passenger enplanements. Like Class B, it resembles an upside down wedding cake,



MSL: mean sea level • AGL: above ground level • FL: flight level

CLASS B AIRSPACE



but in this case you might call it a poor man’s cake because it has fewer layers, a smaller diameter, and a lower height. The innermost ring is generally 5 nm in radius beginning at the surface and extending to 4,000 feet MSL. A 10-nm outer ring extends from 1,200 feet above ground level (AGL) to 4,000 feet MSL.

Sport pilots are allowed to fly inside Class C airspace if they have received the additional required training and have earned a logbook endorsement, and if their aircraft is equipped with a two-way radio, transponder, and altitude-reporting encoder. Note that a transponder and encoder are also required if you fly over the top of Class C airspace.

Before entering Class C airspace, all pilots must establish radio contact

with ATC—generally either approach control or the control tower. “Establish radio contact” means you must call ATC and a controller must respond, including your N number in the response.

Depending on the type of LSA you fly and the type of operations conducted at a Class C airport, you should still be careful about operating there as a sport pilot. After all, the wake turbulence from a heavy twin could wreak havoc if you are flying a two-place ultralight-type machine. Also, your approach speeds will likely be much lower than other aircraft in the pattern. Even though ATC monitors all Class C traffic using radar surveillance, it

is you who could be overtaken by a faster aircraft. See and avoid is still the primary requirement of every pilot.

Think of Class C airspace as “Commercial Airport.”

Class D

Moving one step lower on the restrictions scale, we come to Class D airspace, which surrounds smaller and less traffic-intensive towered airports. Here, the upside-down wedding cake is gone, replaced by a single, smaller area, often 5 nm in radius, extending from the surface to 2,500 feet MSL. Class D airspace shows up on sectional charts as a blue outline around the airport. Also gone is the requirement for a transponder/encoder. However, you are still required to establish two-way radio communications before entering Class D.

So, Class D might be called “Doable.” Memorize it; there will be a quiz.

Class E

If controlled airspace is not designated as Class A, B, C, or D, it is Class E airspace—the simplest area for sport pilots to navigate. This airspace overlies some nontowered airports and the general

BASIC VFR WEATHER MINIMUMS

AIRSPACE	FLIGHT VISIBILITY	DISTANCE FROM CLOUDS
CLASS A		
CLASS B	Not Applicable	Not Applicable
CLASS C	3 statute miles	Clear Clouds
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 section 91.155(b).	1 statute mile	Clear of Clouds
Night, except as provided in section 91.155(b).	3 statute mile	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 mile	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 mile	1,000 feet below 1,000 feet above 1 statute mile horizontal

countryside between airports. No special equipment or pilot certification requirements exist for Class E airspace.

Repeat after me: Class E is for "Everywhere Else, mostly."

Class G

Unlike the previous classes, Class G is defined as "uncontrolled" and includes airspace not designated as one of the other classes. It extends from the surface to either 700 feet AGL, 1,200 feet AGL, or in some unpopulated areas of the western United States, to 14,500 feet MSL. It often overlies smaller, nontowered airports. Although subtle differences in cloud clearance requirements exist

below 1,200 feet AGL, that has little real impact on those flying under visual flight rule (VFR) conditions, to which sport pilots are limited.

Maybe Class G could be for "Near the Ground at Uncontrolled Airports."

Special Use Airspace

Within controlled airspace are located airspace areas designated for special uses, each of which may affect sport pilots. Most of these areas are shown on aeronautical charts. They include:

- **Prohibited Areas**—established for national security or other reasons. No civilian flights are allowed.

- **Restricted Areas**—established because invisible hazards such as artillery firing or aerial gunnery may exist. Permission from the controlling agency is required prior to entering restricted areas.

- **Military Operations Areas (MOAs)**—established to separate military flights from IFR traffic. Sport pilots operating under VFR conditions may enter MOAs, but they should be alert for military aircraft performing aerobatics and abrupt maneuvers.

- **Warning Areas**—established above ocean areas between 3 and 12 miles

AIRSPACE REQUIREMENTS

CLASS AIRSPACE	ENTRY REQUIREMENTS	EQUIPMENT	MINIMUM PILOT CERTIFICATE
A	ATC Clearance	IFR Equipped	Instrument Rating
B	ATC Clearance	Two-Way Radio, Transponder with Altitude Reporting Capability	Private—Except a student or recreational pilot may operate at other than the primary airport if seeking private pilot certification and if regulatory requirements are met.
C	Two-Way Radio Communications Prior to Entry	Two-Way Radio, Transponder with Altitude Reporting Capability	No Specific Requirement
D	Two-Way Radio Communications Prior to Entry	Two-Way Radio	No Specific Requirement
E	None for VFR	No Specific Requirement	No Specific Requirement
F	None	No Specific Requirement	No Specific Requirement

from the shore where hazards to aircraft exist.

- **Alert Areas**—established to advise pilots that a high volume of pilot training or unusual aerial activity is taking place.

- **Controlled Firing Areas**—established where weapons firing may be hazardous to other aircraft. These areas do not need to be shown on aeronautical charts, because the controlling agency is required to monitor air traf-

fic in the area through the use of ground spotters or radar and suspend operations if an aircraft approaches.

Other Airspace Areas

Several other airspace designations exist,



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but we'll concentrate on only those of particular importance to sport pilots.

- **Military Training Routes (MTRs)**—routes identified on aeronautical charts where the military conducts training, in some cases below 1,500 feet AGL using fast jet aircraft or helicopters. Sport pilots flying low and slow should be especially careful to look both ways before crossing an MTR "street." Also, an MTR is not a good place to practice maneuvers.
- **Temporary Flight Restrictions (TFRs)**—since September 11, 2001, TFRs have become all too familiar. They are established to restrict flight operations in many different situations, including protection of public figures, NASA operations, fire-fighting operations, disaster relief operations, prevention of sightseeing aircraft congestion above an event, and others.

The word "temporary" is misleading. While some TFRs go away quickly after an event is over, others are established on a semi-permanent basis. The other problem with TFRs is that they may pop up at any moment and are thus not shown on aeronautical charts.

Before any flight, pilots should find out if any TFRs are along their intended flight path—to enter a TFR is to invite an armed F-16 escort and the inevitable repercussions that follow. The tools for locating TFRs are becoming better; the FAA website now has a TFR page that graphically depicts any active TFRs, but it has a disclaimer saying that it may not be up to date. For the most up-to-date information on TFRs, call your local FAA Flight Service Station at 800-WX-BRIEF.

- **Parachute Jump Areas**—sport parachute jumping often occurs at

the same airports used by sport pilots. Parachute Jump Areas are published in the FAA *Airport/Facility Directory*, and frequently used sites are depicted on sectional charts. In addition, Notices to Airmen (NOTAMs) are issued for some parachuting operations.

That covers the basic ABCs of airspace. We don't know everything yet—there is a good bit more in the details. For more information, obtain a copy of the *Pilots Handbook of Aeronautical Knowledge* and/or the *Aeronautical Information Manual (AIM)*. Both are FAA publications available from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7954. These references are also available at many airport fixed-base operators and pilot supply stores. They also may be downloaded from the FAA website, www.faa.gov. 

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