

# A TOUCH OF CLASS

SUSAN PARSON



Photo by Tom Hoffmann

## (AND CATEGORY)

### Performance & Privileges

**A**t some early stage of your aviation training, your instructor introduced the concepts of “category” and “class.” You learned (sort of) that category and class mean one thing for certification of aircraft, but they mean something different for certification of pilots. If your experience was anything like mine, you didn’t get much (if any) information about what those words meant, much less why they are applied differently to planes and pilots. So you dutifully found a way to memorize the words associated with category and class for each. You remembered it just long enough to get through the knowledge test, and after that you never thought about it again. Sound familiar?

Once I passed my private pilot knowledge test, I personally put notions of category and class completely out of mind until I started working toward my ground and flight instructor qualifications. At that

stage, it wasn’t enough to parrot the textbook definitions. I had to actually *understand* these heretofore confusing concepts in order to explain them, first to the FAA inspector who administered the practical test and then to my students. As the saying goes, words matter — and these particular words are helpful in terms of understanding certification requirements for performance (planes) and privileges (people).

#### **Aircraft Category = What Can It Do?**

As used with the certification of aircraft, the term “category” refers to aircraft grouping according to intended use and operating limitations. The aircraft categories can further be grouped according to whether they qualify for a standard airworthiness certificate or a special airworthiness certificate.

The following chart provides a broad summary of the main aircraft categories:

Category	Airworthiness Certificate Type	14 CFR part	General Characteristics
<i>14 CFR part 25: Airworthiness Standards: Transport Category Airplanes</i>			
Transport	Standard	25	<ul style="list-style-type: none"><li>• Jets with 10 or more seats or a maximum takeoff weight (MTOW) greater than 12,500 lbs</li><li>• Propeller-driven airplanes with greater than 19 seats or a MTOW greater than 19,000 lbs</li><li>• At least two engines</li><li>• Flown by at least two pilots</li><li>• “Fail-safe” - any element can fail, but the risk of such a failure causing an accident must be extremely low.</li><li>• Load limit from -1 to +2.5 Gs (or up to +3.8 Gs, depending on design takeoff weight)</li></ul>

Category	Airworthiness Certificate Type	14 CFR part	General Characteristics
<i>14 CFR part 23: Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes</i>			
Commuter	Standard	23	<ul style="list-style-type: none"> <li>• Propeller-driven, multiengine airplanes</li> <li>• Seating, excl. pilot seats, of 19 or less</li> <li>• MTOW of 19,000 pounds or less.</li> <li>• Approved for any maneuver incident to normal flying, stalls (except whip stalls), and steep turns, in which bank angle is not more than 60°</li> <li>• Load limit from -1.52 to +3.8 Gs</li> </ul>
Normal	Standard	23	<ul style="list-style-type: none"> <li>• Seating, excl. pilot seats, of nine or less</li> <li>• MTOW of 12,500 pounds or less</li> <li>• Approved for non-acrobatic operation (i.e., any maneuver incident to normal flying; stalls (except whip stalls); and lazy eights, chandelles, and steep turns) in which bank angle is not more than 60°</li> <li>• Load limit from -1.52 to +3.8 Gs</li> </ul>
Utility	Standard	23	<ul style="list-style-type: none"> <li>• Seating, excl. pilot seats, of nine or less</li> <li>• MTOW of 12,500 pounds or less</li> <li>• Approved for limited acrobatic operation: stalls (except whip stalls); lazy eights, chandelles, steep turns; spins (if approved for the particular type of airplane). Bank angle more than 60° but not more than 90°</li> <li>• Load limit from -1.76 to +4.4 Gs</li> </ul>
Acrobatic	Standard	23	<ul style="list-style-type: none"> <li>• Seating, excl. pilot seats, of nine or less</li> <li>• MTOW of 12,500 pounds or less</li> <li>• Intended for use without restrictions, other than those shown to be necessary as a result of required flight tests.</li> <li>• Load limit from -3 to +6 Gs</li> </ul>

<i>14 CFR part 21: Certification Procedures for Products and Parts</i>			
Primary	Special	21.184	<ul style="list-style-type: none"> <li>• Manufactured under a production certificate, including aircraft assembled by another person from a kit provided by the holder of the production certificate and under the supervision and quality control of that holder</li> <li>• FAA may inspect the aircraft to determine conformity to the type design and condition for safe operation</li> </ul>
Restricted	Special	21.25 21.185	<ul style="list-style-type: none"> <li>• Agricultural</li> <li>• Forest and wildlife conservation</li> <li>• Aerial surveying</li> <li>• Patrolling (pipelines, power lines)</li> <li>• Weather control</li> <li>• Aerial advertising</li> </ul>

Category	Airworthiness Certificate Type	14 CFR part	General Characteristics
<i>14 CFR part 21: Certification Procedures for Products and Parts (cont.)</i>			
Limited	Special	21.189	<ul style="list-style-type: none"> <li>• Surplus military aircraft converted to civilian use under these conditions:               <ul style="list-style-type: none"> <li>• The aircraft has, and conforms to, a limited type certificate.</li> <li>• The FAA has determined that the aircraft is safe to operate.</li> <li>• Operations may not include carrying passengers or cargo for hire.</li> <li>• FAA may prescribe additional limitations necessary for safe operation.</li> </ul> </li> </ul>
Light Sport	Special	21.190	<ul style="list-style-type: none"> <li>• A light-sport aircraft, other than a gyroplane, kit-built, or transitioning ultralight-like vehicle</li> </ul>
Experimental	Special	21.191 21.193 21.195	<ul style="list-style-type: none"> <li>• Research and development</li> <li>• Show compliance with regulations</li> <li>• Crew training</li> <li>• Exhibition</li> <li>• Air racing</li> <li>• Market surveys</li> <li>• Operating amateur-built aircraft</li> <li>• Operating kit-built aircraft</li> <li>• Operating light-sport aircraft</li> <li>• Unmanned Aircraft Systems (UAS)</li> </ul>
Provisional	Special	21 Subpart C	<ul style="list-style-type: none"> <li>• Aircraft with a “provisional” category type certificate for special operations and operating limitations</li> </ul>

This chart is by no means exhaustive, either in scope or in detail. For that, you need to refer to the appropriate section(s) of 14 CFR. It is also important

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to understand that the references shown in the chart address airworthiness and certification standards, which are only part of the story. For operating rules and limitations applicable to a particular aircraft category and/or class, you’ll need to check the appropriate sections of 14 CFR part 91.

The bottom line is that understanding at least the basic certification requirements for each aircraft category gives you important information on what the aircraft can and cannot do for you.

**Aircraft Class = How Does It Fly?**

For aircraft certification purposes, “class” simply refers to a broad grouping of aircraft having similar characteristics in terms of propulsion, flight, or landing. The major class distinctions for aircraft

certification are: airplane; rotorcraft; glider; balloon; landplane; and seaplane.

To put aircraft category and class into more familiar terms, here are a few examples based on the aircraft GA pilots are most likely to fly:

- Normal (category) airplane (class)
- Utility (category) airplane (class)
- Acrobatic (category) airplane (class)

### Pilot Certificates & Ratings

Before we turn to category and class for airmen, take a look at this issue’s “Checklist” for a clarification of the very frequently garbled terminology on pilot certificates and ratings. A surprising number of pilots — and an even more surprising number of instructors — tend to use the terms interchangeably, or to say “rating” when it should be “certificate.” In a nutshell:

A pilot is *certificated* to fly aircraft at one or more named privilege levels, which include student, sport, recreational, private, commercial, and airline



transport pilot (ATP). When you talk about your pilot *certificate*, you are referring to the privilege level (e.g., private pilot). The type of certificate you hold determines your basic privilege level, and each level inherently includes certain privileges and limitations (e.g., to fly — or not — for compensation).

Except for pilots at the student and sport certification levels (see “Checklist” for details), pilots at each certificate level are *rated* to fly aircraft in at least one specific category and (if applicable) class. Now let’s look at what that means.

### Airman Category = What Sort of Aircraft Can You Fly?

For purposes of ratings on a pilot certificate, there are seven aircraft categories:

- Airplane
- Rotorcraft
- Glider
- Lighter than air
- Powered lift
- Powered parachute
- Weight-shift-control

Once you are beyond the student pilot certification level, your pilot certificate will list at least one rating that includes at least one of the seven aircraft categories stated above.

### Airman Class = What “Flavor” Can You Fly?

In addition to stating a category level, the pilot certificate must include at least one class rating if the aircraft category is divided into classes. (Note: A type rating is “above and beyond” a class rating; see “Checklist” for details.)

Here are the major class divisions:

- Airplane category is divided into single-engine land (ASEL), multi-engine land (AMEL), single-engine sea (ASES), and multi-engine sea (AMES) classes
- Rotorcraft category is divided into helicopter and gyroplane classes
- Lighter-than-air category is divided into airship and balloon classes
- Powered parachute category is divided into powered parachute land and powered parachute sea
- Weight-shift-control category is divided into weight-shift-control land and weight-shift-control sea

Note that the powered lift and glider categories are not divided into classes, so a rating in either of these aircraft categories will stand by itself. In other cases, though, your pilot certificate will include both. For example, the most common initial aircraft category and class rating on a newly-issued private pilot certificate is airplane single engine land.

### Head of the Class

There’s a lot to learn in aviation, and it’s understandable if you, like me, initially let the concepts of category and class bounce off an already overtaxed brain. Because of what these terms convey about aircraft performance and airman privilege, though, I hope you’ll step to the head of the class by taking a second look. ✈️

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*Susan Parson (susan.parson@faa.gov, or @aviBrix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.*

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