

Chapter 1

Rules, Regulations, and Aids for Navigation

PRIVILEGES AND LIMITATIONS

In general, the privileges and limitations of a seaplane rating are similar to those of the equivalent land rating. The same standards and requirements apply as for comparable landplane certificates.

While it is possible for a student to use a seaplane to obtain all the flight training necessary to earn a pilot certificate, and many pilots have done so, this publication is intended primarily for pilots who already hold airman certificates and would like to add seaplane capabilities. Therefore, this chapter does not address pilot certificate requirements, regulations, or procedures that would also apply to landplane operations. Information on regulations not directly related to water operations is available in other Federal Aviation Administration (FAA) publications.

For certification purposes, the term “seaplane” refers to a class of aircraft. A pilot requires additional training when transitioning to a seaplane. Ground and flight training must be received and logged, and a pilot must pass a class rating practical test prior to initial operations as pilot in command. This training requires the use of an authorized flight instructor to conduct such training and attest to the competency of a pilot prior to taking the practical test. Because the seaplane rating is part of an existing pilot certificate, the practical test is not as extensive as for a new pilot certificate, and covers only the procedures unique to seaplane operations. No separate written test is required for pilots who are adding seaplane to an existing pilot certificate.

Adding a seaplane rating does not modify the overall limitations and privileges of the pilot certificate. For example, private pilots with a seaplane rating are not authorized to engage in seaplane operations that would require a commercial certificate. Likewise, a pilot with a single-engine seaplane class rating may not fly multi-engine seaplanes without further training. However, no regulatory distinction is made between flying boats and seaplanes equipped with floats. [Figure 1-1]

SEAPLANE REGULATIONS

Because of the nature of seaplane operations, certain regulations apply. Most of them are set forth in Title 14

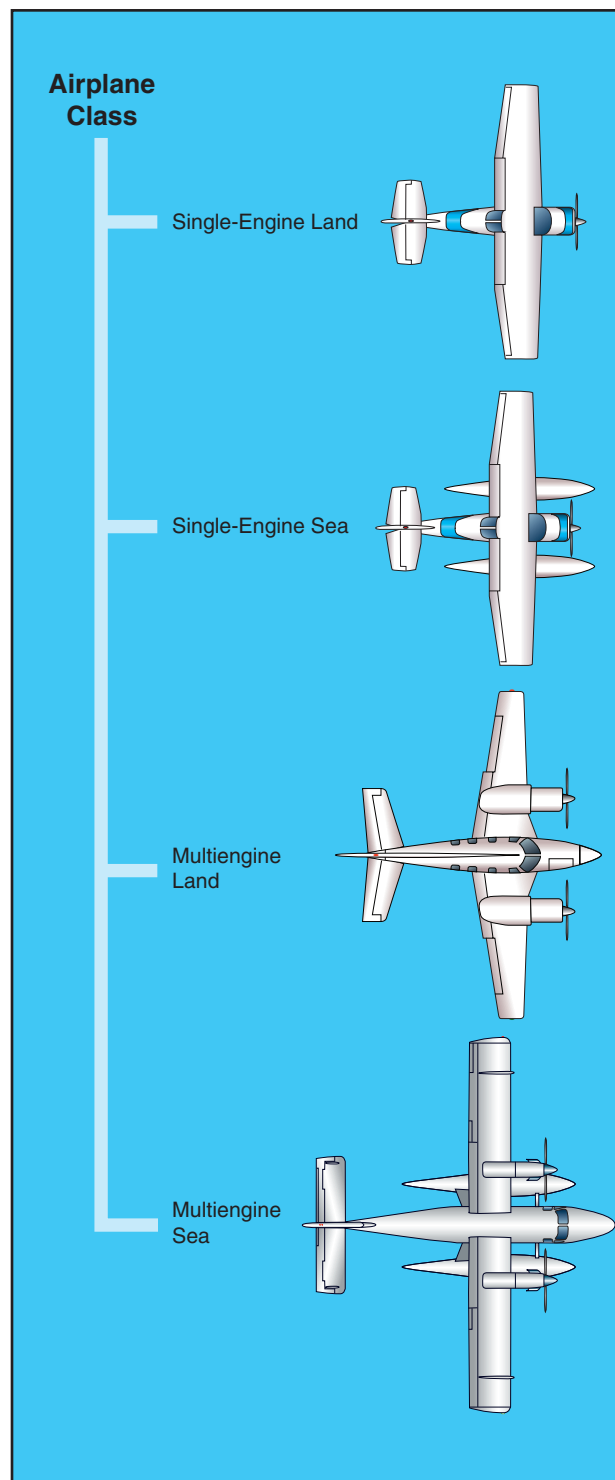


Figure 1-1. Seaplane is a class.

of the Code of Federal Regulations (14 CFR) parts 1, 61, and 91.

Just as land-based pilots must understand airport operations, the pilot certification requirements in 14 CFR part 61 require seaplane pilots to know and use the rules for seaplane base operations.

Specific regulations recognize the unique characteristics of water operations. For example, 14 CFR part 61, section 61.31 takes into account that seaplanes seldom have retractable landing gear as such, so an endorsement to act as pilot in command of a complex seaplane requires training in a seaplane with flaps and a controllable pitch propeller. Likewise, in 14 CFR part 91, section 91.107, there is an exception to the rule that everyone must have a seat and wear a seatbelt during movement on the surface. The person pushing off or mooring a seaplane at a dock is authorized to move around while the seaplane is in motion on the surface.

14 CFR PART 91, SECTION 91.115 RIGHT-OF-WAY RULES: WATER OPERATIONS

The right-of-way rules for operation on water are similar, but not identical, to the rules governing right-of-way between aircraft in flight.

- (a) General. Each person operating an aircraft on the water shall, insofar as possible, keep clear of all vessels and avoid impeding their navigation, and shall give way to any vessel or other aircraft that is given the right-of-way by any rule of this section.
- (b) Crossing. When aircraft, or an aircraft and a vessel, are on crossing courses, the aircraft or vessel to the other's right has the right-of-way.
- (c) Approaching head-on. When aircraft, or an aircraft and a vessel, are approaching head-on, or nearly so, each shall alter its course to the right to keep well clear.
- (d) Overtaking. Each aircraft or vessel that is being overtaken has the right-of-way, and the one overtaking shall alter course to keep well clear.
- (e) Special circumstances. When aircraft, or an aircraft and a vessel, approach so as to involve risk of collision, each aircraft or vessel shall proceed with careful regard to existing circumstances, including the limitations of the respective craft.

RULES OF THE SEA

According to United States Coast Guard (USCG) regulations, the definition of a vessel includes virtually anything capable of being used for transportation on water, including seaplanes on the water. Therefore, any time a seaplane is operating on the

water, whether under power or not, it is required to comply with USCG navigation rules applicable to vessels. Simply adhering to 14 CFR part 91, section 91.115 should ensure compliance with the USCG rules. Pilots are encouraged to obtain the USCG Navigation Rules, International-Inland, M16672.2D, available from the U.S. Government Printing Office. These rules apply to all public or private vessels navigating upon the high seas and certain inland waters.

INLAND AND INTERNATIONAL WATERS

Inland waters are divided visually from international waters by buoys in areas with frequent ocean traffic. Inland waters are inshore of a line approximately parallel with the general trend of the shore, drawn through the outermost buoy. The waters outside of the line are international waters or the high seas.

Seaplanes operating inshore of the boundary line dividing the high seas from the inland waters must follow the established statutory Inland Rules (Pilot Rules). Seaplanes navigating outside the boundary line dividing the high seas from inland waters must follow the International Rules of the Sea. All seaplanes must carry a current copy of the rules when operating in international waters.

UNITED STATES AIDS FOR MARINE NAVIGATION

For safe operations, a pilot must be familiar with seaplane bases, maritime rules, and aids to marine navigation.

SEAPLANE LANDING AREAS

The familiar rotating beacon is used to identify lighted seaplane landing areas at night and during periods of reduced visibility; however, the colors alternate white and yellow for water landing areas. A double white flash alternating with yellow identifies a military seaplane base.

On aeronautical charts, seaplane landing areas are depicted with symbols similar to land airports, with the addition of an anchor in the center. As with their land counterparts, tick marks around the outside of the symbol denote a seaplane base with fuel and services available, and a double ring identifies military facilities. [Figure 1-2]

BUOYS AND DAYBEACONS

Buoys are floating markers held in place with cables or chains to the bottom. Daybeacons are used for similar purposes in shallower waters, and usually consist of a marker placed on top of a piling or pole driven into the bottom. Locations of buoys within U.S. waters are

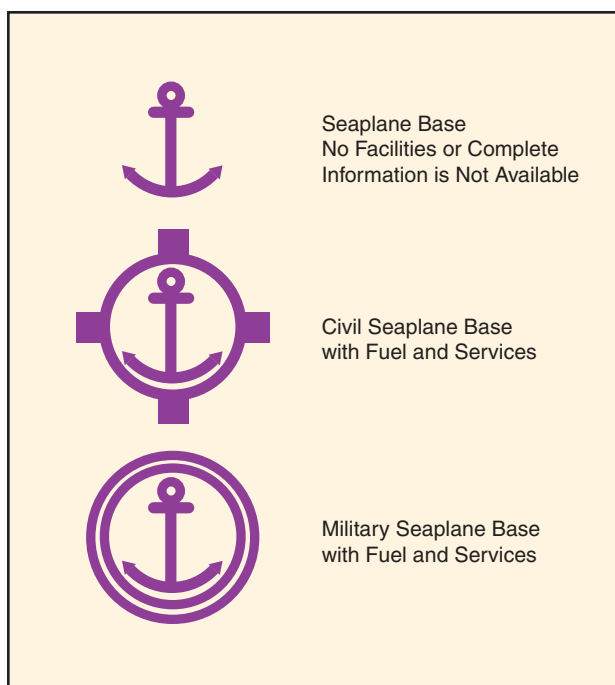


Figure 1-2. Seaplane landing areas have distinctive symbols to distinguish them from land airports.

shown on nautical charts prepared by the Office of Coast Survey (OCS), an office within the National Oceanic and Atmospheric Administration (NOAA). Light lists prepared by the Coast Guard describe lightships, lighthouses, buoys, and daybeacons maintained on all navigable waters of the United States.

The buoyage system used in the United States employs a simple arrangement of colors, shapes, numbers, and lights. Whenever operating near buoys, keep in mind that the length of chain holding the buoy in place is likely to be several times the depth of the water, so the buoy may be some distance from its charted location, as well as from any danger or obstruction it is intended to mark. Do not come any closer to a buoy than necessary.

Buoys with a cylindrical shape are called can buoys, while those with a conical shape are known as nun buoys. The shape often has significance in interpreting the meaning of the buoy. [Figure 1-3]

Since a buoy's primary purpose is to guide ships through preferred channels to and from the open sea, the colors, shapes, lights, and placement become meaningful in that context. Approaching from seaward, the left (port) side of the channel is marked with black or green can buoys. These buoys use odd numbers whose values increase as the vessel moves toward the coast. They also mark obstructions that should be kept to the vessel's left when proceeding from seaward.

The right side of the channel, or obstructions that should be kept to the vessel's right when headed toward shore, are marked with red nun buoys. These

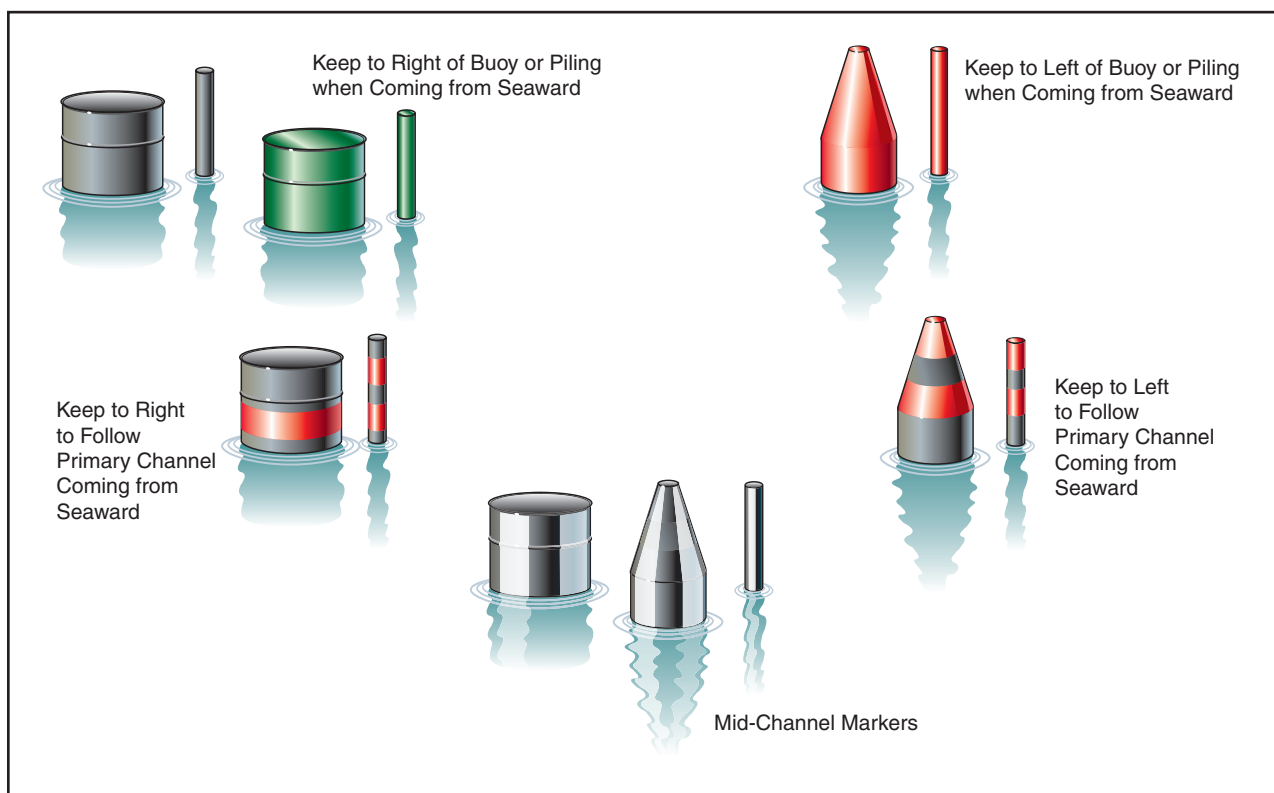


Figure 1-3. Buoys typically used along waterways.

buoys use even numbers whose values increase from seaward. The mnemonic “red, right, returning” helps mariners and seaplane pilots remember to keep the red buoys to their right when proceeding toward the shore (“returning” to their home port).

Black and white vertically striped buoys mark the center of the channel or fairway (the nautical term for the navigable part of a river, bay, or harbor), and may use letters starting at A from seaward.

Naturally, not all waterways lead straight from ocean to port, so there are also buoys to mark the junctions of waterways. Buoys with red and black horizontal bands mark junctions or places where the waterway forks. They also mark wrecks and obstructions that can be passed on either side. The color of the top band (red or black) and the shape of the buoy (nun or can) indicate the side on which the buoy should be passed by a vessel proceeding inbound along the primary channel. If the topmost band is black, the buoy should be kept to the left of an inbound vessel. If the topmost band is red, keep the buoy to the right when inbound. Buoys with the black top band will usually be cans, while those with the red top band will usually be nuns.

For waterways that run more or less parallel to the coast, there is no obvious inbound or outbound to give direction to the waterway, so by convention the inbound direction of such waterways is assumed to be “clockwise” around the contiguous states. This means that for waterways running parallel to the east coast, southbound is considered the inbound direction; for waterways along the Gulf coast, inbound means westbound; and for waterways along the west coast, northbound is inbound.

Daybeacons and daymarks serve similar purposes as buoys and use similar symbology. In the United States, green is replacing black as the preferred color for port-side daymarks. [Figure 1-4]

These are just the most basic features of the most common buoyage system in the United States. There are

other buoyage systems in use, both in the United States and in other countries. Sometimes the markings are exactly the opposite of those just described. Good pilots will obtain a thorough understanding of the maritime aids to navigation used in the areas where they intend to fly.

NIGHTTIME BUOY IDENTIFICATION

Usually only the more important buoys are lighted. Some unlighted buoys may have red, white, or green reflectors having the same significance as lights of the same colors. Black or green buoys have green or white lights; red buoys have red or white lights. Likewise, buoys with a red band at the top carry red lights, while those with a black band topmost carry green lights. White lights are used without any color significance. Lights on red or black buoys are always flashing or occulting. (When the light period is shorter than the dark period, the light is flashing. When the light is interrupted by short dark periods, the light is occulting.) A light flashing a Morse Code letter “A” (dot-dash) indicates a mid-channel buoy.

There is much more to the system of maritime navigation aids than can be presented here. Nautical books and online resources can be a great help in extending knowledge and understanding of these important aids.

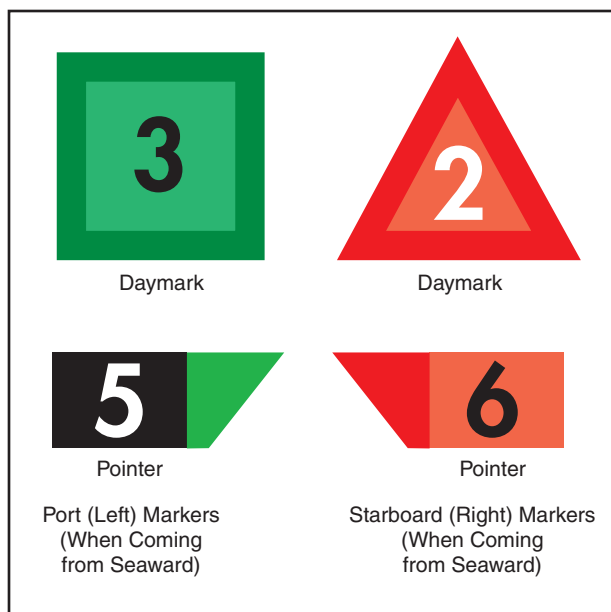


Figure 1-4. Typical daymarks.