

# Open Water Flying

A Few Items to Consider

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# Open Water Defined

**Open-water.** An expanse of an **ocean, sea, or large lake** which is distant from shore and devoid of nearby islands or other obstructions. Or, beyond power-off gliding distance from shore (91.205)

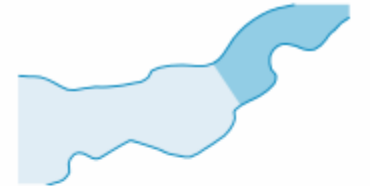
It's like defining a sparsely populated area, it's hard to draw a line. So sticking to charts is helpful.

**Maritime laws** define such boundaries, which are borrowed by aeronautical charts.

## WATER FEATURES (HYDROGRAPHY)

Water features are depicted using two tones of blue, and are considered either “Open Water” or “Inland Water.” “Open Water,” a lighter blue tone, shows the shoreline limitations of all coastal water features at the average (mean) high water levels for oceans and seas. Light blue also represents the connecting waters like bays, gulfs, sounds, fjords, and large estuaries.

Exceptionally large lakes like the Great Lakes, Great Salt Lake, and Lake Okeechobee, etc., are considered Open Water features. The Open Water tone extends inland as far as necessary to adjoin the darker blue “Inland Water” tones. All other bodies of water are marked as “Inland Water” in the darker blue tone.



# Signs You are Over Open Water

- Engine suddenly seems to be running rough
- Pants and/or undergarments seem snug in lower extremities
- Excessive chart review and shoreline measurements
- Checking Glide Circle on Foreflight
- Nervous passengers
- You are following boating traffic



# FAR's Required Equipment and Survival Gear

## § 91.509 Survival equipment for overwater operations.

(a) No person may take off an airplane for a flight over water more than 50 nautical miles from the nearest shore unless that airplane is equipped with a life preserver or an approved flotation means for each occupant of the airplane.

(b) Except as provided in paragraph (c) of this section, no person may take off an airplane for flight over water more than 30 minutes flying time or 100 nautical miles from the nearest shore, whichever is less, unless it has on board the following survival equipment:

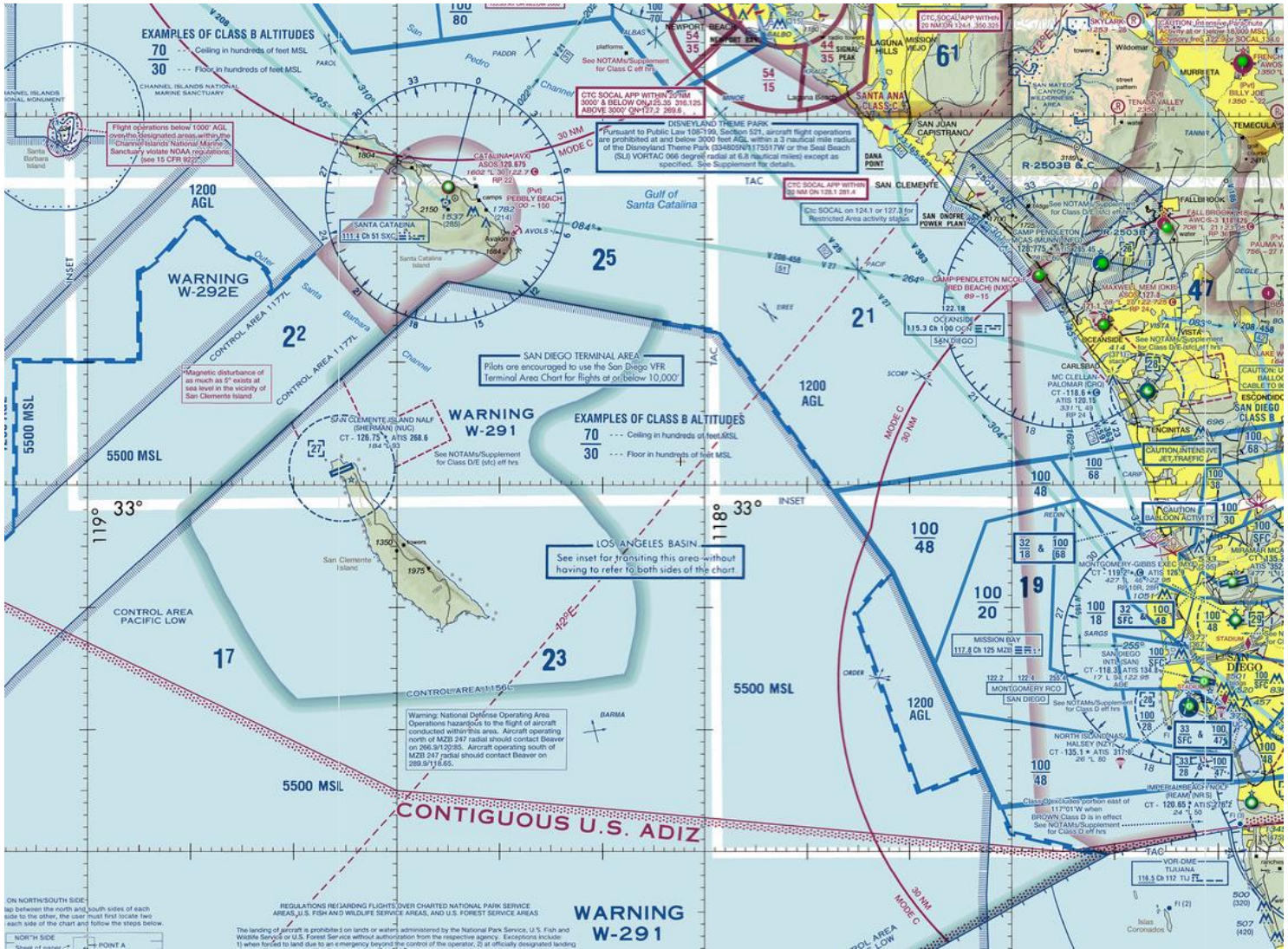
- 91.205 (12) If the aircraft is **operated for hire over** water and beyond power-off gliding distance from shore, approved flotation gear readily available to each occupant and, unless the aircraft is operating under part 121 of this subchapter, at least one pyrotechnic signaling device.
- As used in this section, “shore” means that area of the land adjacent to the water which is above the high water mark and excludes land areas which are intermittently under water.

# Minimum Altitudes – FAR 91.119

- **91.119** Minimum safe altitudes; general Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:
  - (a) Anywhere – An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
  - (b) Over congested areas – Over any congested area of a city, town, or settlement, or over any open-air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.
  - (c) Over other than congested areas – An altitude of 500 feet above the surface **except over open water** or sparsely populated areas. **In that case**, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.
  - (d) Helicopters – Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with routes or altitudes specifically prescribed for helicopters by the Administrator.

# Airspace Considerations

| Space  | Quiz   |
|--|--|
| 30 Mile Bravo Mode C Ring                      | Equipment Required   |
| Class Bravo                                    | Communications – Equipment   |
| Warnings Area                                  | Warning VS Restricted  |
| ADIZ   | For Defense VFR (DVFR) flights, the estimated time of ADIZ penetration must be filed with the appropriate aeronautical facility at least 15 minutes before penetration, except for flights in the Alaskan ADIZ, in which case, report prior to penetration. Additionally, VFR pilots must receive and transmit a discrete transponder code. Be sure to activate your flight plan before crossing the ADIZ. |
| <a href="#">Controlled firing areas (CFAs)</a> | FAA ORDER: JO 7400.2H  |
| Marine or Wildlife Sanctuary / Bird Nesting    | 2000 AGL   |
| MOA /Alert                                     | Alert Areas are a way to alert the average joe pilot to abnormal flying activity.  |
| Space Launch                                   | NOTAMS   |



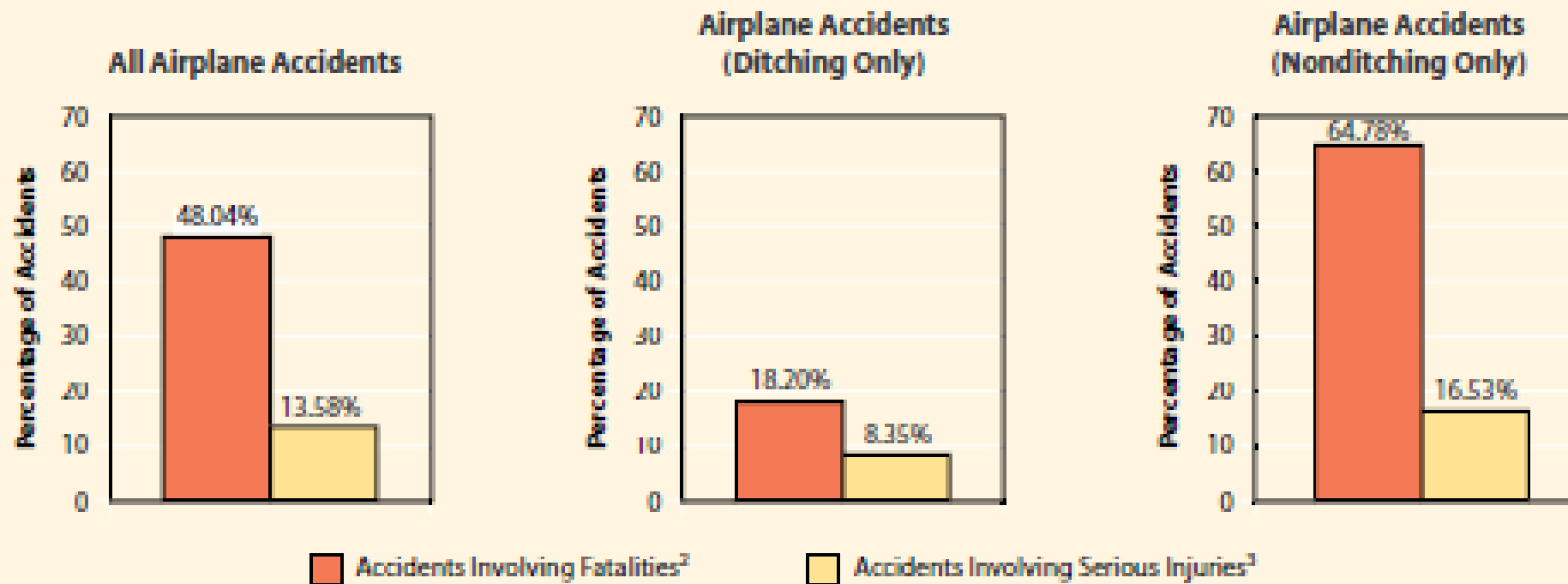
# Advisory Circular 120-47 (excerpts)

- 2. RELATED FEDERAL AVIATION REGULATIONS (FAR) SECTIONS. 121.339, 121.340, 125.209, and 135.167.
- DISCUSSION. The recommended equipment should meet applicable TSO. This equipment includes, but is not limited to, the following:
  - Life preserver for each occupant of the aircraft.
  - Rafts or slide/rafts with appropriate buoyancy and sufficient capacity for everyone on board the aircraft and which have a boarding station.
- Signaling devices including:
  - At least one approved pyrotechnic signaling device.
  - (ii) One signaling mirror.

# Brief Accident Stats:

**Figure 1**  
**Airplane Water-contact Accidents, 1976–July 8, 2003<sup>1</sup>**

**Percentage of Accidents Involving Fatalities and Serious Injuries**





# How to Ditch and Aircraft at Sea (Flight Safety)

[https://www.skybrary.aero/index.php/Ditching:\\_Fixed\\_Wing\\_Aircraft#Considerations\\_and\\_Techniques\\_for\\_Ditching\\_a\\_Fixed\\_Wing\\_Aircraft](https://www.skybrary.aero/index.php/Ditching:_Fixed_Wing_Aircraft#Considerations_and_Techniques_for_Ditching_a_Fixed_Wing_Aircraft)

- Communicate Position – ATC, 121.5, Activate ELT, If transponder is 1200, then switch to 7700.
- Calm Seas - Land into wind, OR Rough Seas - parallel large swells - Close to Boat(s) in their direction of travel
- Slow as possible (Fly-in 200 fpm, 10 degree Nose-up, no stall) – Light as possible – Gear-Up if able – Close Vents and Openings
- Door Cracked – non-inflated preservers on, “Brace-Brace”.
- Exit with Signaling Device, Waterproof Portable Radio, Waterproof portable ELT – Life Raft if able

# Appendix & Further Study

- FAA – Advisory Circular: 120-47 (Survival Equipment for Use in Overwater Operations).
- FARs – 91.509, 91.205 (12), 91.119
- Air Safety Foundation – Skybrary (Ditching) - <https://www.skybrary.aero/index.php/Ditching: Fixed Wing Aircraft #Considerations and Techniques for Ditching a Fixed Wing Aircraft>
- Air Safety Foundation – “Waterproof Flight Operations”