

## Feet Wet

In my Navy days the term “feet wet” had nothing to do with stepping in puddles. It was just a simple way of saying “We’re now flying over water.” Hence I sometimes describe a Perth-Melbourne flight as “feet wet near Esperance, and feet dry around Mount Gambier.” But for most of us as pilots, “feet wet” doesn’t often apply unless we’re doing that short over-water transit from Freo to Rotto. Let’s look at some of the rules and considerations for flying with your feet wet.

### **Notification**

Part 9 of the CASR Part 91 MOS says that for an over-water flight you must submit a SARTIME flight notification or at least leave a Flight Note (WIFESAR, MUMSAR or equivalent) with a responsible person. According to the MOS, the responsible person you leave it with must:

- Be at least 18;
- Have access to 2 phones;
- Satisfy you that they know how to contact the Joint Rescue Coordination Centre (JRCC) and will do so if you’re overdue.

### **Equipment**

Division 26.14 of the MOS covers the equipment you must carry. That includes life jackets with whistles for everyone on board if:

- For a single-engine aircraft, you’ll be out of glide range of a suitable landing spot; and
- For a multi-engine aircraft, you’ll be more than 50 nm from a suitable landing spot.

In a single-engine aircraft, you must wear your life jacket if you’re out of glide range of land, unless you’re above 2000 ft, in which case CASA considers you’d have time to put it on before going swimming.

In a piston-engine aircraft you must carry life rafts if you’re flying over water for more than 30 minutes at normal cruise speed, or 100 nm, whichever is shorter.

Division 26.12 says that if you’re flying a single-engine aircraft out of glide range of land, you must carry a survival ELT. That’s not the same as the one fitted to the aircraft. A survival ELT is one that is removable from the aircraft, and is an EPIRB or personal locator beacon.

### **Transponder**

AIP ENR 1.6 says if you’re in Class G airspace more than 15 nm from shore, the appropriate transponder code is 4000.

### ***Ditching***

One of the many accurate aviation cliches is that there are no ships in the air but there are a lot of aeroplanes in the ocean. If you should ever have the misfortune of having to

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put your aeroplane down on the water, you'd like to have some clues about how to give yourself the best chance. To that end, CASA published a very informative Advisory Circular in November 2021. It's AC 91-09 and its title is Ditching:

<https://www.casa.gov.au/sites/default/files/2021-11/advisory-circular-91-09-ditching.pdf>.

The circular says, logically enough, that drowning is much more likely if escape from the aircraft is delayed. Reasons for that can include being unable to undo seat belts or open doors, disorientation, and unfamiliarity with how to escape. The last of these is clearly one of the objects of a good passenger briefing.

As for disorientation – I've done Helicopter Underwater Escape Training (HUET) quite a few times, in the Navy and as part of the requirements for offshore oil and gas work. When you do that training, you do a few simple immersions and escapes, and they get progressively more complicated, including inverted and blindfolded. On one course, after we'd done the required drills, we did one last one in which the instructor suggested we try something different. (The offshore helicopter pilots, who unlike the passengers have to do HUET every year, like to play chicken for this one – last one out wins!) My plan was to simulate that my window wouldn't open and I needed to escape via the opposite window, so as we went inverted I reached across the aisle and grabbed hold of the opposite seat back so I'd know which way to go. Once we were inverted, the only reason I went the right way was that I had hold of that seat. And that was a training exercise, with a few practice immersions under my belt, by day, in a pool. I find it extremely easy to believe that if you hit the water hard in a ditching, with the aircraft not staying level and your heart rate red-lining, not knowing which way is out or up could be a very real scenario.

If you only have life jackets and no raft to climb into, hypothermia will be a risk. You lose body heat about 25 times faster in water than in air at the same temperature. (Remember *Titanic* – Kate survived but Leo died.) You'll also be harder for the rescuers to spot, as they're looking for a few bodies rather than a nice brightly-coloured life raft. For these reasons, particularly if you're flying over cold water, you may choose to take a life raft even if the rules don't require it.

Section 7 of AC 91-09 contains lots of good tips for survival once you're on or in the water.

### **Preparing to ditch**

Section 4.3 of AC 91-09 list some things you'd do prior to ditching. A few of these, such as putting your life jacket on, stowing loose items, and bracing, are part of all the airline safety briefings we've all heard.

### **Where to ditch**

Provided you fly the aeroplane as well as possible, by far the biggest influence on the outcome of a ditching is the sea state. Your forced landing on land will be as into-wind as you can make it, but on the sea that may mean landing into a big sea or swell, which

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would be far from ideal. In most cases the safest bet will be to touch down parallel to the swell, on the crest or back side. And since the swell is a result of yesterday's wind or distant wind, it may well be a different size and in a different direction to the waves that are generated by the wind at the time of ditching, hence your typical weather reports about "3 metre seas on a 4 metre swell." (Incidentally, that's a total of 5 metres, not 7, because when you add sea and swell you have to Pythagoras the two numbers.) So if you touch down parallel to the swell, chances are you won't be directly into wind, meaning you probably won't have the slowest possible groundspeed (Can you call it waterspeed?)

### **Configuring the aircraft**

Your flight manual may tell you how to configure the aeroplane for a ditching. If it doesn't, gear up, full flap, and minimum controllable speed will be your best bet.

Whether your aircraft is high-wing or low-wing, and whether the gear is fixed or retractable (and therefore up), it won't be a smooth touchdown. As for getting out, you want to wait until the aircraft settles, and once you've opened a door or window, wait until the cabin fills with water. Otherwise, you're trying to push your way out against incoming water. And of course, you know from airline briefings not to inflate your life jacket until you're out.

### **Avoiding ditching**

If you're going to fly over water, what can you add to this list for avoiding the need to ditch?

- Well-maintained aeroplane;
- Good pre-flight checks;
- Fly high enough to stay within glide range of land;
- Have two engines.

And while we're on the subject of the sea, well done to new student and member Bassem Azer. While discussing Air Law recently, I think he was the first student I've ever had who's correctly answered the question, "Why do the flying rules say to turn right to avoid a head-on?"

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