MAYDAY MAYDAY MAYDAY!

Several hundred feet above the suburbs of Sydney, a float plane pilot searches for an emergency landing site.

Roger Meadmore

IF THE ENGINE OF MY CESSNA 185 floatplane could have failed at a worse time – on climb, 700ft above the Sydney suburb of Mona Vale – I certainly couldn't think of it. Feeling for the fuel selector I confirmed it was switched to both tanks and shifted my gaze to the fuel gauges – low, but by my calculations, there was still just over an hour in the tanks.

Floatplanes are not known for their glide performance and this one was no exception. I had to find somewhere to land – and fast. My best chance was a heavily wooded stretch of sloping parklands leading up to a suburban football field backing onto a street of large homes. Too short, but better than the alternatives. I briefed my passenger, a friend who had jumped at the chance of a relaxing seaplane flight back to Sydney, and started thinking about how I was going to handle the landing.

I had read how bush pilots aim between the trees to slow their aircraft on crash landings and pointed the nose of the silent aircraft between the goal posts. A little high, I pulled on two notches of flap. The sink rate grew alarmingly. I killed the flap but the damage had already been done – I was now committed to a landing in the foliage just short of the field.

Impact absorbed: "Just don't stall her in", I thought. "Fly her just above the stall and you might drop her onto the turf…" Suddenly, the floats clipped the leaves, the nose pitched down and we hit the ground. Much to the surprise of the people who had witnessed the whole thing, we stepped out of the aircraft unharmed. Remarkably, most of the impact had been absorbed by the floats and the foliage, leaving the fuselage of the aircraft in reasonably good condition.

Minutes later the fire brigade arrived and doused the ground and the starboard wing. The wing was leaking copious amounts of fuel, making it impossible to determine how much had been left when the engine failed.

So, what went wrong? The aircraft had just been fitted with amphibious floats at Southport and I was flying it home to Adelaide via Bankstown Airport. Enroute I landed at Barrenjoey (near Palm Beach) and shortly after take-off the engine failed. The subsequent investigation concluded I had the fuel selector on "left" or "right" and had exhausted the fuel. I disagree.

While the rebuild of the aircraft progressed, I visited the Cessna factory in Wichita, Kansas. I asked if they could shed any light on the cause of the engine failure. If the fuel was on "both" why did the engine fail? Their only explanation was that, not being used to the floats, I had flown a skidding climbing turn to the left. The port tank was virtually empty and the skid had forced the fuel in the fuller tank away from the fuel intake, until the motor starved. They could not explain why the engine driven pump had not restarted the motor once the wings were level during the forced landing.

> **"The aircraft was climbing so the small quantity of fuel in its tanks was to the rear. In this case only a minor skid was sufficient to expose the tank outlet."**

Back in Adelaide, I discussed the accident with another pilot. We decided to test Cessna's theory and took the rebuilt aircraft up to 4,000ft above the Murray at Blanchetown. We had a small amount of fuel in the left tank and about an hour in the right. We then did a skidding turn to the left, and the engine stopped. We set the aircraft up for a glide approach to the river and at 1,000ft the engine caught and continued running beautifully.

We climbed back to 4,000ft and repeated the skidding turn. The engine stopped again, but this time we hit the "high prime". It fired a split second later and continued running normally. We lost maybe 200ft.

Roger Meadmore wins $250 for his entry to What Went Wrong.

ANALYSIS

Plan ahead

John Freeman

Given the distance between Southport and Bankstown, and the fact that this aircraft has an endurance of 4 hours and 40 minutes, I question the accuracy of Roger's estimation that there was more than an hour of fuel remaining at the time of the engine failure.

In 1980 I had my Cessna 185 fitted with PK 3500C straight floats, also at Southport, and also flew Southport to Sydney (refuelling on the way).

The aircraft in this story was equipped with amphibious floats which meant that it could have landed at a number of points on the way and refuelled. If this had been done this accident would not have occurred.

Other factors:

- Float equipped aircraft are not as directionally stable as those without floats and even the best pilot will tend to skid somewhat in level flight as well as turning. Skidding will transfer fuel from one side to the other.
- The aircraft was climbing so the small quantity of fuel in its tanks was to the rear. In this case only a minor skid was sufficient to expose the tank outlet.

Use of the high-prime fuel pump may have resolved the problem, but only if fuel was available at the tank outlets. I believe there was too little fuel, too much air in the system and too little time to restart the engine.

The test carried out at a later date would not have fully simulated the problem near Sydney. I wonder whether the test was done in level flight or while the aircraft was climbing? If the aircraft was in level flight, both outlets would have been more likely to retrieve fuel when the skidding stopped.

Additional advice: It is worth making a few additional comments for any pilot involved in an engine failure in an aircraft equipped with a constant speed airscrew. After lowering the nose to maintain airspeed and control, select coarse pitch. This will make use of the inertia of the still rotating engine but more importantly present the airscrew in a low drag profile which will help maintain airspeed and slow the rate of descent.

Do not use flap until you're sure of getting into the area you're aiming for. As soon as you know that you're going to make it, use flap as required (up to the maximum if necessary), plus fine pitch. The rate of descent will increase markedly but the aircraft will be under control and the chance of overshoot will be reduced. But, and it's a big but, do not increase drag until you are absolutely sure of getting in.

If the aircraft had been refuelled enroute to Bankstown, this accident would not have happened. Always carry ample reserve fuel to allow for contingencies and always plan to arrive at your destination with your fuel reserves (fixed and variable) intact.

John Freeman is a chief flying instructor and author of Flight at Lower Levels – Safety Through Awareness.

The motor's quit – *we're going down...*

SYDNEY MORNING HERALD

Lucky escape: The Cessna 185 at rest in Rofe Park, Turramurra.