

Flying on a Dying Engine

Sunday, 30 August 2015, early afternoon. Christchurch air traffic control logs a MAYDAY from a Piper Arrow PA-28R-200, after some sort of explosion, and partial engine failure.

About five nautical miles out to sea, the three occupants of Romeo Tango Echo refuse to give in to their rocketing blood pressure, and with deliberate calm, begin trouble checks...

If student pilot Marcus Bekker (20 hours) had wanted a masterclass in what to do after partial power loss, he could not have had better tutors than his two North Shore Aero Club mates.

On the last Sunday in August, about 2 pm, Marcus was sitting in Piper Arrow RTE behind PPLs Craig Vause (640 hours and PIC) and Steven Perreau (approaching 1000 hours, right hand seat).

The single-engine retractable aircraft had just taken off from Christchurch International Airport, heading to Omarama in the MacKenzie Basin, where the three men were meeting up with other North Shore fliers.

Then disaster struck...

"We'd spent all morning monitoring the not-great weather," says Steven. "We'd looked at the charts, repeatedly consulted MetFlight, and rung experts around the region."

The pilots identified a very large 'hole' to the north of Banks Peninsula off the coast that they thought looked promising.

"But I've had enough scares in weather," says Steven, "enough experience not to try anything dumb, so we waited."

Finally, visibility improved to five kilometres, and about 1100 ft around the circuit, so the North Shore fliers decided to have a go, given that the web cams were showing it was fine at their destination.

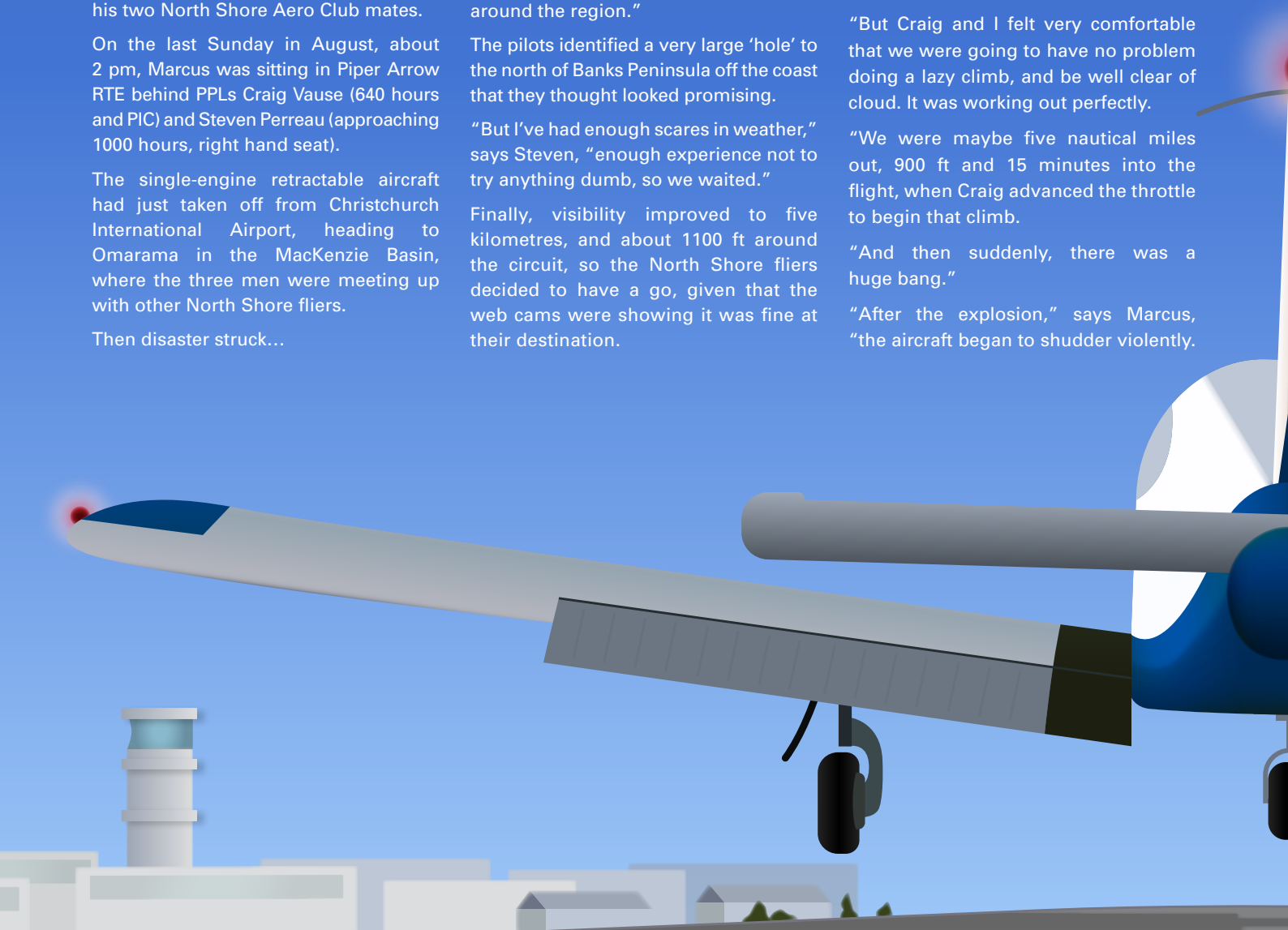
As they flew towards that precious hole of clear sky, the pilots found it was a bit further offshore than they had first thought.

"But Craig and I felt very comfortable that we were going to have no problem doing a lazy climb, and be well clear of cloud. It was working out perfectly.

"We were maybe five nautical miles out, 900 ft and 15 minutes into the flight, when Craig advanced the throttle to begin that climb.

"And then suddenly, there was a huge bang."

"After the explosion," says Marcus, "the aircraft began to shudder violently.



There were a few seconds of stunned silence, as we tried to get our heads around what the heck had just happened!”

Steven says, however, his and Craig’s training almost immediately kicked in.

“We both smartly went for the propeller control as our first check because it felt like the prop had driven to full course. Then we both went for the mixture control.

“Then realising it was *Craig* that was PIC, I took my hand away from the controls, and concentrated on the radio.

“While Craig continued the trouble checks, I declared MAYDAY to Christchurch Control, and immediately after, Christchurch Tower.”

Craig lowered the nose, and, with the engine coughing and vibrating, he began the slow turn for the coast.

“I was thinking we would probably end up in the water that day,” says Craig. “The heart was definitely pumping. I’m a very relaxed person normally, but oh boy, that coast seemed a long, long way away.”

In the back, Marcus, too, was mentally preparing to “go for a swim”.

“I tried to remember if I’d done a recent backup on my laptop, because that was probably going to go for a swim as well!” he now laughs.

On Steven’s instructions, Marcus stowed anything loose away in the back, preparatory for landing – wherever that was going to be.

“Then I just started grabbing fistfuls of lifejackets,” Marcus says.

“Their training just came flooding back. It was great to see how that works in reality.”

“Not having lifejackets on before we took off from Christchurch was a real mistake,” observes Steven. “It was a curious decision, given my practice of always doing so if I’m flying over water. I can’t really account for it, except to say it was definitely *not* the right decision to make!”

Disturbing the studied calm of the cockpit, having to put on those lifejackets in the middle of an emergency, was the only time the stress level obviously rose.

Steven and Marcus put theirs on and then, while Steven flew, Craig attempted to don his.

As sometimes happens, even on the ground, Craig’s lifejacket twisted horribly, preventing him getting it on properly.

“He’s wrestling with this thing,” says Steven, “so with cool I definitely did not feel, I said to him ‘no hurry, take your time’.”

With a second go, Craig’s lifejacket was on successfully, and he took back control.

“Craig had trimmed the aircraft beautifully,” says Steven. “We were doing about 110 miles an hour – just above best glide speed, there was no control load, the nose was much higher than normal level flight and it felt like it was maintaining that.”

Coming out of the turn, all three pilots were dismayed to see how far away land appeared to be.

“We’d lost about 200 feet in the turn,” says Craig. “And I really wasn’t sure we could maintain height long enough to reach the coast.

“But then I scanned the instruments and thought ‘well, hang on a minute, we do have some power, we’re maintaining height, we just might make the coast, and if we do, and the engine gives out completely, I’ll try to land on the beach.

“Christchurch Tower were fantastic. They were encouraging us, telling us we were doing a great job, giving us slight changes in bearing to make the journey to the coast quicker.

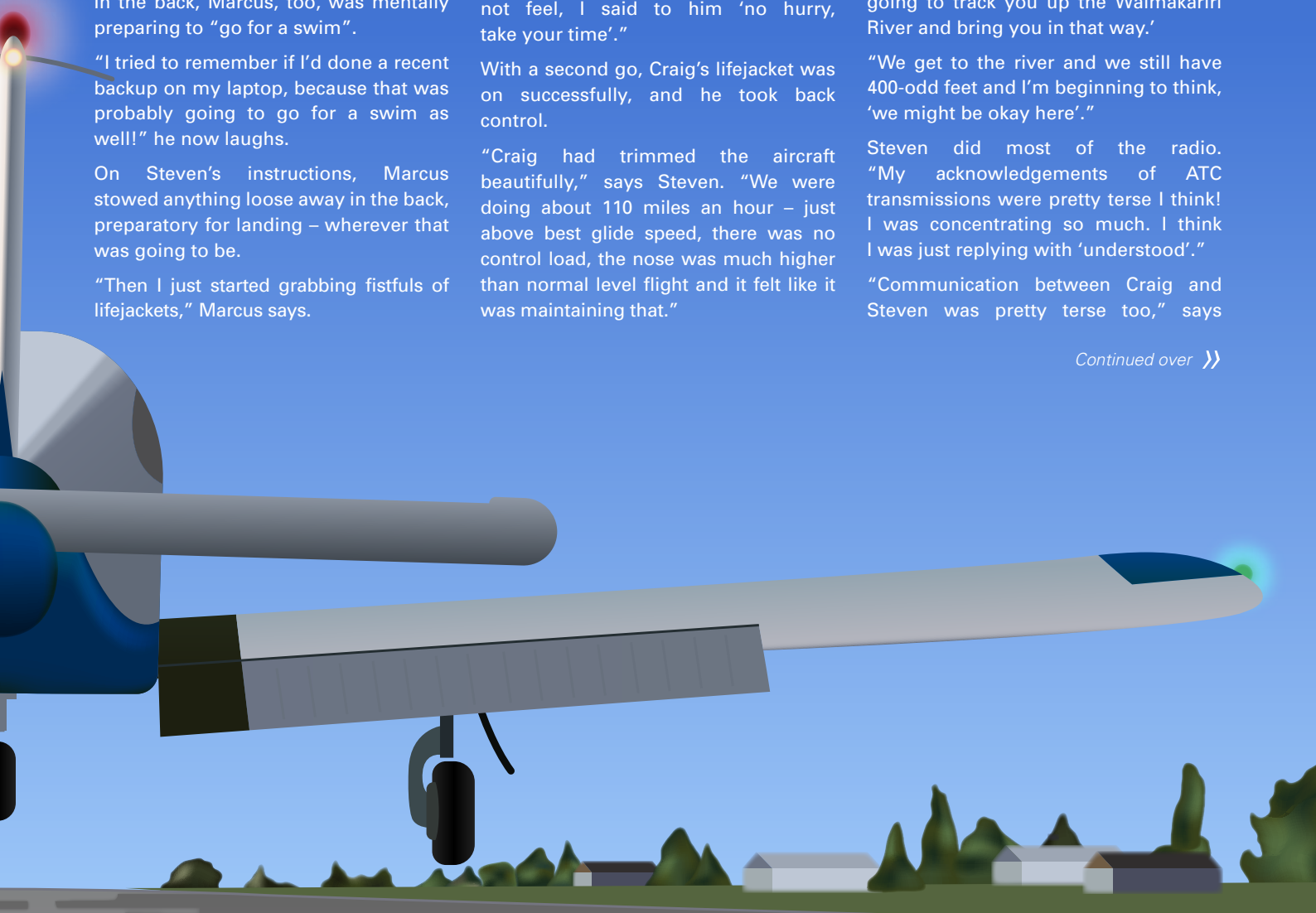
“So we reached the coast, and we still had 500 to 600 feet. At that point, Christchurch Tower said ‘there’s some obstructions you need to avoid, so we’re going to track you up the Waimakariri River and bring you in that way.’

“We get to the river and we still have 400-odd feet and I’m beginning to think, ‘we might be okay here’.”

Steven did most of the radio. “My acknowledgements of ATC transmissions were pretty terse I think! I was concentrating so much. I think I was just replying with ‘understood’.”

“Communication between Craig and Steven was pretty terse too,” says

Continued over >>



“...with not a great deal of communication, they carved up the workload. Craig’s flying the plane, Steven’s doing the radio.”

Marcus, “but it was remarkable to see how well they worked together to deal with the emergency.

“The two of them, their training just came flooding back. It was great to see how that works in reality.

“Every student pilot would benefit from being part of something like this. Although, let’s face it, you wouldn’t buy a ticket to do it!

“But seeing how, with not a great deal of communication, they carved up the workload. Craig’s flying the plane. Steven’s doing the radio.

“And the most amazing thing of all, is this total calm in the cockpit.”

“Yeah, how we worked together was almost co-ordinated,” says Craig. “It was really just second nature through training.

“We had a job to do and we did it. But it was great to know the person next to me was a high-hours pilot. We’ve flown together a lot over the years and that helped the situation.”

As the crippled aircraft began flying up the Waimakariri, Christchurch Tower asked the pilots to switch on their ELT (beacon).

Steven says, “Every time there was a radio transmission, the ELT went ‘whoop, whoop, whoop’ and completely drowned out any radio call. It just destroyed the messages.

“Despite using a noise-cancelling headset for a few seconds, I could hear nothing ATC said, so switched off the ELT. We would have to do without it.”

At 400 ft, Craig and Steven started playing “look at the paddocks”.

“I would point to one,” says Steven, “and say “we could go there” and he would say “...and then we could go there” and I’d say “yep”. This is what we were doing, identifying where we could land should the engine suddenly quit. We really expected it would, it was running that badly.

“We agreed that if the engine did pack it in, we were closing the throttle and flying to the ground,” says Steven.

But the engine, despite its terrifyingly

rough running, somehow, managed to keep going.

Air Traffic Controller on duty in Christchurch Tower, Louise Tasker, says there were five controllers with binoculars on RTE during the final approach stage.

“We switched the runway and approach lights on maximum to help these non-locals get a better idea of how far they had to go,” she says.

“We could suddenly see the bright lighting in the distance,” says Steven. “That was great, because the weather had deteriorated, and it was quite dark.

“Around mid-final, and lining up with the runway, as we started over the ALS (runway approach) lights, the engine was really packing it in. It was going BANG, struggle, struggle, BANG, struggle, struggle,” says Steven.

“By now it was impossible to maintain any real height and I said to Craig ‘I don’t think we can make it’ and you could see him doing some working out in his head, and he said ‘no, no, we can do it’.

“So I said ‘right, I’ll do the gear, I’ll do the flaps, you just fly the plane.”

“Steven made the decision,” says Marcus admiringly, “not to unlatch the door – which is actually done in emergency procedures – unless we went down in the last 200 ft. Opening the door would have created drag and may have made the difference between getting back, or not.

“It was the same with the landing gear. He decided not to extend it until the last few seconds, again because of the drag it would have created.

“The tower called us, saying ‘your landing gear is not extended’ and Craig beat Steven to the radio, replying ‘we know!’”

“We were now on short final,” says Steven, “we were ridiculously low and I said to Craig as calmly as I could, ‘um, do you think you could give us a little bit more power?’

“And he pushed the throttle all the way forward and said, in this really low-key

way, ‘nah, that’s it’. Suddenly, we were crossing tarmac. I said ‘gear down... gear coming... flap one... flap two’. For some reason Craig looked down briefly and the nose fell, and I said ‘Flare!’ and he looked up again, and caught the flare nicely, and I said ‘flap three’.

“And the next thing we’re touching down and going “oh my God,” ... and he still laughs incredulously.

The three pilots were not the only ones celebrating.

“We were all very relieved to see them get the gear down, and execute a safe landing,” says Airways’ Louise Tasker.

The engine had finally packed it in, just on landing.

“Craig thought I’d cut the engine,” says Steven. “I thought he had!

“Then the airport fire engines were screaming towards us. We were thankful for their quick response but very pleased we didn’t need rescuing!



"I'm not sure how much chaos we caused, but I think we shut an international airport for a good 25 minutes. It could have been longer if not for the obliging chap who patrols the airport for bird hazards. He towed RTE off the runway for us and over to the Canterbury Aero Club apron."

Local club members also rushed to the aid of the shaken pilots, filling them up with coffee, congratulating them with back slaps and ferrying the now-stranded trio about.

The three admit to a few sleepless nights after the trip, replaying the adventure in their minds.

For Craig, the 'take-home' from the day was the confidence boost from surviving such a hellish experience.

"I know now that should I ever be in a similar situation, I can handle it without falling apart."

But the three pilots are also very aware of the help Airways staff gave them in

Investigation

The CAA safety investigation is continuing into the cause of the partial #3 cylinder separation and subsequent partial power loss on the Lycoming IO-360 engine fitted to ZK-RTE.

Over the years there have been a number of occurrences where the cylinder hold down through bolts and studs have failed, which can lead to a full cylinder separation from the crankcase, and subsequent engine failure.

Additional information regarding issues with weld-repaired crankcases can be found in the Australian Civil Aviation Safety Authority Airworthiness Bulletin 85-015 published 19 April 2013.

guiding them home.

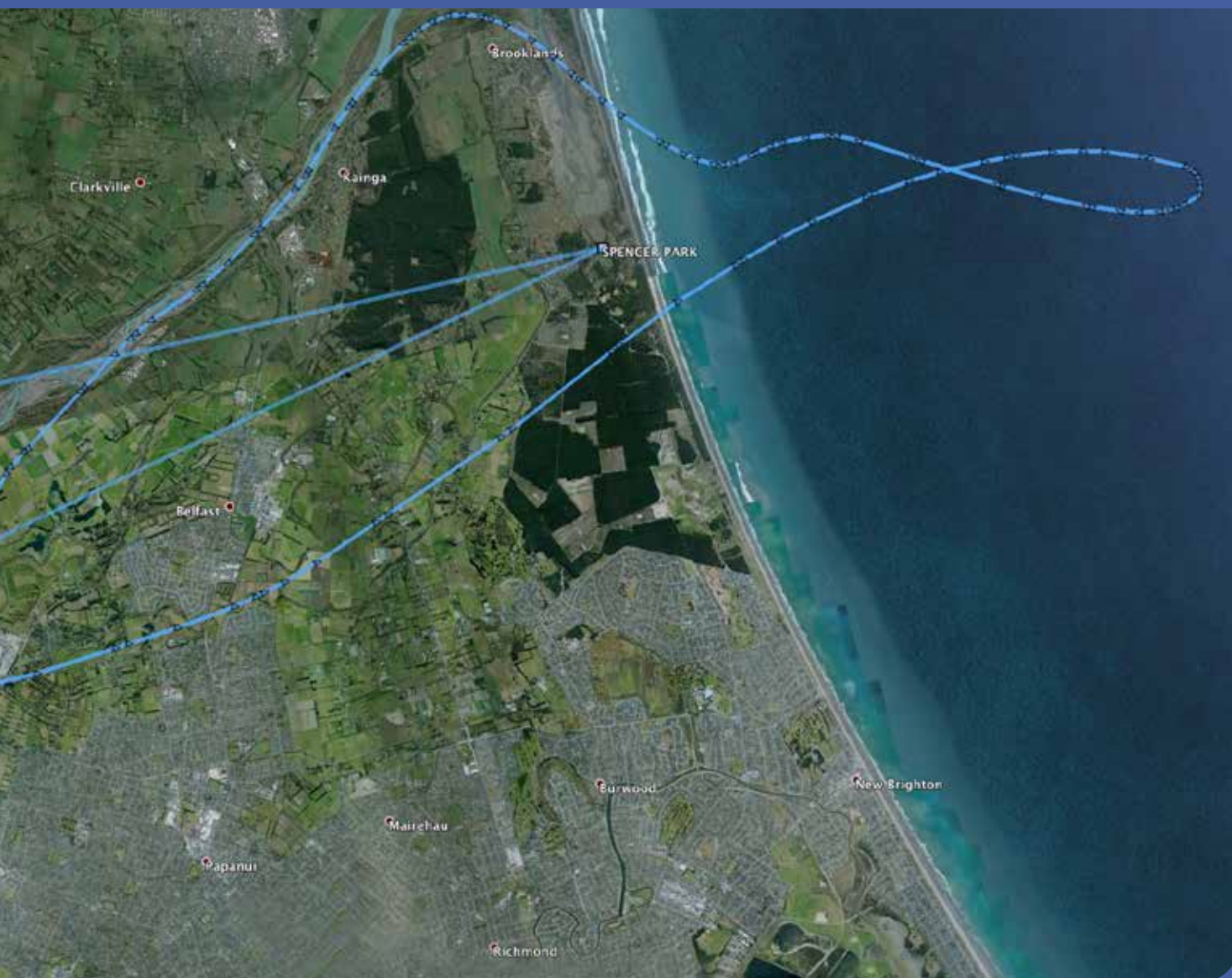
"They were professional, composed and efficient," says Steven. "It was great to know they were with us through all the excitement."

Marcus says the experience has refocused his mind on why so much training is on emergency flying.

"Having gone through it, you see the

benefit of that training, stuff that you might otherwise not have bothered much with, thinking 'I'll never need this drill' but after something like this, you really do get it."

For more about how two pilots in the same cockpit can enhance, or diminish, their flying experience, read our previous article *An Excess of Skill?* ■



Map data: Google Earth, Spidertracks