Too close to the sun

Renowned BC artist Toni Onley and I shared a passion for water flying that ultimately led to his demise. In the wake of the sad news of his crash in the Fraser River in 2004, and reflecting on my own experiences flying the same aircraft, I felt compelled to investigate his accident and share my theories, along with memories of a good friend, wonderful artist, and fellow flyer.

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Before I could touch the zwieback I was reaching for—as my evening meal—the television interrupted me with news of a plane crash on the Fraser River. BC artist Toni Onley had gone down while practising "touch and go" on the water near the small town of Ruskin. Witnesses reported that he and his aircraft had submerged almost instantly. The shock of the news brought back memories of my friendship with the artist and the several ways our lives had intersected.

A shared passion

I remember a flower painting in the hallway of the Faculty Club building at the University of British Columbia, a Toni Onley creation that I had judged to be well done. I had learned to distinguish competent brush strokes from my father, who adopted the style of Edouard Monet after studying art with a pupil of a French Impressionist. I soon learned to recognize Onley's unique watercolors, mostly landscapes of subjects ranging from the Canadian Arctic to the southern scenery of Patagonia. His sophisticated and elegant work earned him many awards and honorary degrees. I came to enjoy his art wherever I encountered it, particularly his paintings of familiar landscapes in the Gulf Islands and the Fraser Valley, where we both had homes.

Toni Onley's plane went down near the little town of Ruskin. Ironically, it was Toni himself who corrected me in his erudite, scholarly way about the origins of the town's name. Toni informed me that it did not reference rusk, the German term for zwieback (a humble biscuit), but was rather a homage to the English art critic and essayist John Ruskin, a nineteenth-century writer and social reformer. Immigrants dedicated to home crafts and rural industry had established the original commune in that location. Now, in the river near a village named for a Victorian art critic, British Columbia had lost a popular and successful lyrical abstract painter famous for his aquarelle landscapes.

It was not only the man and his work I remembered. Toni Onley and I were fellow flyers, and the amphibious aircraft in which he had gone down was an LA-4-200 Buccaneer, identical to one I had owned myself. Had he encountered any of the mechanical challenges that had led me to abandon the Buccaneer? Furthermore, as a physician authorized to perform Canadian Medical Aviation examinations for other pilots and validate their licences, I wondered—feared—whether an existing medical condition had gone undetected during his medical workup, a condition that could have materialized and incapacitated the pilot at a critical moment during his touch-and-go maneuvers. For these several reasons, I did feel a personal need to follow up on the investigation of his crash and his death.

The planes

Stork/Wilga

Before I met Toni Onley I took my Lake Buccaneer for servicing by a specialist mechanic at the Delta Heritage Air Park. He told me that he was looking after a good number of lake aircraft, and that one of his customers was the renowned artist Toni Onley, who lived in Vancouver and parked his planes at Delta. He mentioned that Toni had recently acquired an additional exotic air vehicle, a Polish-built Wilga that enabled the pilot to take off and land on extremely short airstrips. The mechanic encouraged me to take a look at the unusual plane, which was parked under his care. During my walk-around, I observed its very large

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propeller, manufactured of wood with a leading metal edge, reminiscent of the Fieseler Stork, the German military craft that had been used in the daredevil liberation of Mussolini from his Gran Sasso confinement during the Second World War.

As Hitler's Fieseler Stork reached its degree of fame, so would Toni's Wilga aircraft gain some less spectacular notoriety, albeit under peacetime conditions. As part of his plan to create unique paintings of high mountains and glacial scenes, Toni Onley had the Wilga plane mounted on skis for landing on ice or snow, a creative, ambitious experiment that ultimately failed. He took off from the grass strip at Delta Heritage Airpark and flew his modified aircraft north and east, across the river, into the mountains of Garibaldi Provincial Park. He touched down on a glacier but was unable to brake. The Wilga skied along the ice in an uncontrolled skid and finally came to rest in a crevice of the glacier, the wings straddling the edges of the crack, holding the fuselage up seemingly in mid-air. Tony and his passenger were unhurt, but humiliatingly confined to the disabled plane; unable to get out at risk of falling into the deep, icy abyss below. In contrast to Mussolini, who was flown out of his remote alpine incarceration in the Abruzzi Mountains in a Stork aircraft against his will, Toni and his passenger were deeply relieved when rescuers lifted them from their high-altitude entrapment.

Buccaneer

It was the infatuation with the LA-4-200 Buccaneer that Toni Onley and I had in common. I was still in the initial rapturous stage of amphibian ownership when I met the high-flying pilot artist. My family had recently changed residence from the old townsite of Hope to the shore of Kawkawa Lake a few miles east, with water at our doorstep. The new location aroused my desire to acquire an amphibious plane that would allow me to leave my house, walk through my garden to the beach, and step right into my aircraft. Rather than a conventional float plane mounted on twin pontoons instead of wheels, I chose an amphibious plane, capable of landing on and taking off from water or land.

The Buccaneer is an aviator's dream, an amazing flying boat that is truly amphibious in design. Its wheels can be raised or lowered while floating. Wheels down converts the aircraft into a land plane, enabling the pilot to land on water and then taxi onto solid land. My usual flight routine involved climbing into my flying boat at the dock and taxiing out into open water. Then I would flick a switch to raise the wheels and lower the wing flaps hydraulically, and take off. Landings and takeoffs were a thrilling pleasure even in strong crosswinds. As long as I kept the wings level and did not let them touch the water, the boat-shaped fuselage would skip sideways on the frictionless liquid surface while gaining takeoff speed. The amphibian freed us from the limitations of wheeled land planes that rely upon straightforward movement and favorable wind direction for takeoff. It was an exhilarating sensation; moving forward and sideways at the same time, as though I were skiing on water or snow. In addition, it was equally exhilarating to be liberated from plotted flight plans between groomed landing strips. British Columbia is, after all, a province with more lakes than airports. The landscape suddenly seemed open to us; accessible.

When I met Toni Onley in person at the Delta Heritage Air Park, we found we were kindred spirits—Buccaneer fans—who would become friends. We were both intrigued by our ability to land our planes on any one of the province's thousands of lakes, or along the sea coast of Vancouver Island or the mainland; to lower the wheels and taxi onto land.

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Toni used his Lake Buccaneer G-HJE to reach remote and interesting places to paint the scenery. His unusual mode of transportation—a single-engine flying boat—was indispensable to his work as a landscape painter. My own obsession with the Buccaneer, in contrast, was more frivolous: a pastime, a hobby. However, because we as private pilots were able to afford this means of transport we both invoked the scrutiny of the taxman, who questioned our assertions that our planes were a legitimate business expense. Toni found himself under close scrutiny from the income tax department when he wrote off the loss of his plane after his crash in the Garabaldis. My plane had also been through the purgatory of the income tax scrutiny. In the naive expectation that I could

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deduct my aviation expenses from the amount of my income tax owed, my accountant had investigated the possibility of an advantageous tax loophole. As a result, an income tax department officer arrived in Hope to review my records. My attempts to save money were denied; I had to pay up. My unvoiced ambition to become the "flying doctor" had been shot down.

Toni was more successful. Using his celebrity to create public awareness of the injustice of tax laws as applied to artists, he won his case and was able to continue to fly and paint.

My incidents

I had already given up my Buccaneer before Toni Onley's final descent into the Fraser River, but not before experiencing two serious incidents with Father Fraser myself. On the first occasion, early in my infatuation with my flying boat, my overconfidence caused me to misjudge the level of the glassy water. I was too close—I struck the water surface at full speed, albeit at a shallow angle. The impact was severe enough to cause serious damage. My beloved amphibian sank, and I had to swim ashore. It was early March. While I sat shivering and dripping wet in a police car, I watched the rescue helicopter retrieve my favorite LA-4-200 from the waters of the mighty Fraser River.

While the loss of my plane was not enough to deter me from water flying—I acquired a second Lake Buccaneer—soon the disadvantages and dangers of the pastime began to dawn on me. My initial rhapsodic passion for reaching idyllic, secluded scenery waned into cold reality. My main concern was the spectre of an accident during landing. My experience as an anesthesiologist and my knowledge of lung physiology made me particularly aware of the crucial link between air, lungs, and life. If a pilot remains conscious after a water crash, he can try to extricate himself and swim to the surface, as was the case in my own accident. However, if the pilot is out cold, disoriented, severely injured, or trapped in the cabin under water, it would be up to rescuers (if there were any witnesses to the mishap), to recover and resuscitate the victim within minutes to prevent brain anoxia or death. In contrast, the unconscious victim of a land plane accident still has air and the opportunity to breathe it. I realized that the risk of accidents and the danger to life inherent to water flying were too great—particularly in the learning stage.

I had assessed the physical and medical risks and had concluded that it is not about how high you fly, it is about where and how you land when you fall.

After surviving several hairy water landings in my Buccaneer, the honeymoon stage of my love for amphibian aircraft was over. My blindness to the faults of my beloved aircraft began to clear. I noticed unexpected defects that a buyer would not find in any sales brochure. The Buccaneer's characteristic feature, which distinguishes it from conventional aircraft, is the mode of propulsion. The propeller, mounted on a pylon behind the engine several feet above the pilot, pushes the aircraft rather than pulling it. The eccentric location of the heavy engine places the centre of gravity in a high, critical spot outside of the long axis of the fuselage, creating inherent instability enhanced by the "push-prop" propulsion.

One of the plane's systems, the hydraulics controlling the wheel retraction and landing flap deployment, caused my greatest concern. The small pipes tended to leak, and it proved to be nearly impossible to track down the exact location of the defect in order to repair it. As an alternative, I carried a supply of brake fluid with me for replenishing the system, and after each flight I cleaned up, scooping up the wasted liquid that had leaked out into the bilge.

Cautious after my two water mishaps, and concerned about the design flaws of the Buccaneer, I sold the once-beloved amphibious plane and stuck to the use of my safer, albeit more restrictive, land plane. As I no longer had to fly to Delta for maintenance, I lost touch with Toni.

Toni Onley's crash

Toni addressed the Buccaneer's challenges in his own way. He probably had the self-confidence to cope with the plane's idiosyncrasies, yet he continued to practise the critical water takeoffs and landings, touch-and-gos, as flyers call them. Take off. Turn around to final approach. Touch down. Take off again. Turn around to final. Touch down again. The maneuver is designed to develop the pilot's skill in mastering the craft. Toni was a high flyer. Unlike Icarus, whose mistake of flying too close to the sun has become an idiom for overriding ambition, Toni never became overconfident—he was determined to practise his takeoff and

landing skills until they were second nature.

When I decided to stop water flying, it was because I had assessed the physical and medical risks and had concluded that it is not about how high you fly, it is about where and how you land when you fall. I had escaped from my upside-down underwater cockpit, surfaced in the Fraser River, and swum for shore against the current and undertow. Such was not the case for Toni Onley.

What I had feared for myself, a neophyte, had come true for Toni, a veteran aviator. In an amphibious plane identical to mine, even part of the same production series, he had fallen from the sky. News reports suggested that in the afternoon of 29 February 2004, when his Buccaneer came down too hard, Toni was knocked unconscious and drowned. His decomposed body was found in the water 3 months later. The postmortem examination suggested that coronary artery disease might have been present. He was a pipe smoker, which increased his risk of heart disease. However, since I was familiar with Toni's aircraft, I wanted to ascertain that possible mechanical defects had been considered. Had the inherent faults that had affected my plane also been a concern for him? Could their seriousness have been magnified? Could they have caused Toni's death? Feeling a strong urge to investigate, I accessed the accident bulletin of the Transportation Safety Board.

The report

Toni's LA-4-200 Buccaneer (serial number 646, registration C-GHJE) had departed Delta Heritage Air Park, British Columbia, at about 13:10 Pacific Standard Time on 29 February 2004 for a local flight. The weather was good, with partial cloud cover, and the winds were variable in direction, at less than 5 knots. The water surface was rippled. The departure was normal and the engine was running smoothly. Some time later, the aircraft conducted a touch-and-go landing on the Fraser River on an easterly heading in Plumper Reach, adjacent to Crescent Island, near Ruskin. The aircraft appeared to be descending for another landing when it hit the water in a nose-down, wings-level attitude, with a high vertical speed component. Boaters arrived at the accident site in less than 1 minute, however, the aircraft had already sunk amid a small amount of floating debris. Sections of the aircraft were recovered 2 days after the crash, and the pilot's body was retrieved almost 3 months later, a few miles downstream from the accident site.

Aircraft recovery.

The pilot held a Canadian private pilot licence. His flight medical was current; his last ECG was dated 7 January 2003. The aircraft journey log recorded 2132.76 hours on the airframe, and it appears that all of the airtime was flown by the pilot.

Examination for visible flight control damage revealed extensive preexisting corrosion. The bearings were badly corroded, although they were not seized and moved freely. Unexpectedly, the wing flap selector was found to be in the up position. There were no signs of damage in the vicinity of the flaps that would have indicated that they were in down position

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at the time of impact. The retracted position of the flaps contradicted the instructions in the aircraft owner's manual, which states that the wing flaps must be in the down position for all normal takeoffs and landings.

Pilot flight medicals are intended to ensure that only medically healthy aircrew are allowed to fly. This is a shared responsibility—the onus is on the applicant to report any symptoms, and on the physician to conduct a careful and thorough examination. During a postmortem examination the pilot's body was found free from injuries that would have been immediately life threatening, except for drowning after his ejection from the cockpit into the water at the time of impact. The coroner attributed the pilot's death to cardiovascular disease, resulting in spontaneous cardiac dysrhythmia and sudden death while piloting the aircraft. It was noted that significant narrowing of the arteries that supply the heart might have caused sudden death, even in the absence of previous symptoms or medical documentation of heart disease. Absence of previous signs of depression, together with the properly fastened seatbelt and the fact that he frequently practised maneuvers to perfect his flying skills would speak against the possibility of suicide.

Examination of the recovered sections of the aircraft revealed no mechanical failures that would likely cause a loss of control, although corrosion was noted throughout the aircraft. It would appear that the controls had been re-set for cruise flight after the previous touch-and-go landing, since the flaps were found retracted at impact and the landing gear was up. The aircraft was not configured for an intentional landing, nor was the engine power reduced to a level consistent with an attempted touchdown.

My own investigation

The coroner's indictment of a medical disorder as the cause of death did not sit well with me. I carefully studied the official accident report hoping to find a factor other than a dormant cardiovascular condition that could have caused the accident. I looked for a list of mechanical defects similar to those I had experienced on my own Lake Buccaneer. Although there was no mention of propeller damage, the possibility of hydraulic system failure, or of loss of wing panels in Toni Onley's accident investigation, the report does speak of bad corrosion throughout. What those who prepared the report could not have known is that Toni, who landed frequently in salt water, used to wash off his plane by performing touch-and-gos, landing and taking off from the fresh water of St. Mary Lake on Salt Spring Island. Rinsing the salt off his plane on the way home was likely an ineffective way to reduce corrosion. This leads me to conclude that, despite his pipe smoking, the cause of Toni Onley's fall from the sky was a mechanical disorder undiscovered by investigators.

In light of the findings of general corrosion of his Buccaneer, the delicate hydraulic pipes could not have escaped the same damage that had affected those in my own plane. If Toni was unaware of hydraulic fluid leakage as I had experienced it, his final dilemma would have arisen suddenly, a mechanical emergency comparable to the medical magnitude of a ruptured aorta. I hypothesize that, on the Buccaneer's final approach, in the last few seconds before the catastrophe, Toni faced an unexpected hydraulic malfunction as he was vainly attempting to lower the speed-reducing landing flaps. Since he was still at high speed, he tried the only alternative solution—converting the plane's configuration from that of landing into one of takeoff, using maximum power, and pulling the plane up with all the force he could muster. In the process, the elevator control—the horizontal stabilizer—snapped. His actions were to no avail. It was too late. Without the speed-reducing flaps, the top-heavy, nose-down plane continued in its downward momentum at high speed and a steep angle and plummeted into the Fraser's turbid waters.

I concede that the assumption of hydraulic failure is impossible to confirm or disprove. In checking the wreckage, the absence of hydraulic fluid could be explained by either the impact causing a break in the spaghetti-like aluminum pipes; the hydraulic fluid would then have drained or leached out. On the other hand, an unnoticed, spontaneous, all-at-once loss of fluid from within the fragile pipes could have resulted in lack of pressure at the critical moment. Did Toni have to scoop leaked hydraulic fluid from the bilge of his flying boat after every flight, as I did? We will never know.

When Icarus flew with his father Daedalus from Crete, he flew so high that the sun melted the wax of his artificial wings, and he fell into the sea and drowned. My friend Toni Onley also fell into the water from the sky. Did he drown? Or was he dead before he crashed? This too I do not know. I am skeptical about whether the postmortem of a body that has spent 3 months submerged could determine which came first. Medicine, coroner's reports, and accident investigations are all subject to speculation based upon evidence and educated deductions. It is always some combination of preparation, luck, experience, and skill. And practice. Touch and go. Touch and go and turn on final.

To its credit, the Transport Canada Civil Aviation Medicine Branch has initiated a project with the Transportation Safety Board to re-examine all accidents involving known or suspected cardiac incapacitation that have occurred over the past 10 years. The Toni Onley crash will be one of those studied. Following this review, more frequent or extensive testing may be proposed for pilots during flight medical examinations. BCMJ