Coast Ridge and Micro Wave Soaring
North Island New Zealand
Matt Michael 1996

Since New Years Day I'd been living at Paraparaumu airfield instructing for the Wellington Gliding Club. I had logged nearly 170 flights and 70 hours with only a few days off. I had made many friends yet was pleased to see a familiar face when my American friend Les arrived. While orienting him I realized how much I had learned. I was finally beginning to feel comfortable over the local hills.

February 2nd and 3rd brought a weak westerly wind that generated wave off of 1500 foot Kapiti Island but no real ridge lift. I managed to work an hour of wave soaring into my student and trial flight duties each of these days but the 4th brought a strong dry westerly! I had heard much about the fantastic ridge and wave soaring this would create. Ross took me up in the Janus for a three hour ridge and wave orientation that was nothing short of incredible. Upon returning I put Les in the front seat and I showed him everything Ross had done and more!

Before take off I emphasized that we had to have everything secure in the cockpit because the rotor turbulence was very strong. We each had a water bottle and I wedged them both "safely" behind my elbows, then cinched my harness down as tight as possible while instructing Les to do the same. On tow at about two hundred feet the rotor turbulence started throwing us around terrifically. The G-forces were tremendous and alternated rapidly; weighing us down two or three times normal then the next second throwing us against our harnesses and lifting my feet clear of the rudder pedals.

Suddenly, at about five hundred feet, one of the water bottles appeared in front of my face and quickly vanished over my head banging around as it went. A chill swept through me as I realized that it was lodged behind the seat where the airbrake, flap and aileron controls connect. I continued to guide the ship as carefully as possible and prayed the controls wouldn't bind. Several worrisome minutes later as we climbed through a thousand feet, the turbulence slacked-off enough for me to loosen my harness and look behind my headrest to confirm the water bottles' location.

It was laying on top of the aileron control rods and seemed to pose no immediate threat. As soon as we released from tow I had Les take control so that I could twist myself around and grab the bottle. Greatly relieved we headed toward Flat Top, the nearest ridge east of the field, and began climbing in the relatively smooth lift there.

The rest of the flight was pure fun and adventure. After climbing to two and a half thousand feet along Flat Top we headed south about eight kilometers to Paekakariki. Here, the sea coast is quite steep and straight for another eight kilometers south. Ross had shown me how to run this section in successively lower passes until below the crest and level with the highway about eight hundred feet above the surf. For a couple of low performance midwestern flat land thermal pilots this was thrilling to say the least. At the

end of each run we would zoom up and head out to sea to turn in for the next pass. It's an unusual sensation to be nearly a kilometer out over the sea at fifteen hundred feet with full airbrakes on trying to loose altitude! After a few passes, cars began stopping at the lookout on the north end of the ridge and we would wave and smile as we streaked by the parking lot at over 100 knots.

While this is going on we hear over the radio that the coast ridge is working all the way south to Cape Terawhiti, the southern end of the north island, 40 kilometers distant. However, there is a five kilometer wide bay to cross enroute. I knew that it was a rare opportunity and as I gazed across the bay it occurred to me to ask Ian to escort us across. "No problem" he replied over the radio, "I was just heading that way. Be there in a jiffy."

While we waited I began familiarizing Les with the Janus. After doing some turns and dutch rolls I asked how it felt. Since Les is an aerospace engineer I expected him to respond with some deep technical insight as to the handling characteristics of this high performance brute. "Flies like the power steering has failed" was his only response. I laughed remembering my struggle learning to land it the previous week.

Soon Ian arrived and we headed out across the bay. The ridge lift extended nearly half a kilometer out over the water and picked-up again before reaching the far shore. We only lost about five hundred feet in the crossing which seemed fantastic to me. I would have never considered heading across so much open water at low altitude. Continuing south the terrain was quite rugged and there was no beach below us. To our east over the coastal hills about six kilometers we could see Wellington harbor and city as we cruised southward. Ian was waiting for us at Cape Terawhiti and warned us not to stray too far or we'd be swept around the south end of the island. From my perspective the scene looked like the proverbial "ends of the earth" so I wasn't in the least tempted. Hanging there at fifteen hundred feet over the rugged hills and rocky surf at the doorstep to Cook Strait, one of the most treacherous stretches of water in the world, Iowa seemed as distant as the moon and Paraparaumu airfield not much closer. But the westerly continued to blow like the breath of God and the return trip north was as easy as a cruise along the freeway. Of course, we couldn't resist buzzing the lookout at Paekakariki. By now Les had a good feel for the ship and I watched from the back as he had his fun.

As we continued north past Paraparaumu and Flat Top we encountered some of the rotor turbulence in the lee of Kapiti Island. For about five kilometers the ridge lift was not as trustworthy as we had quickly grown accustomed to on our trip south. Gingerly, we progressed north to the Waikanae ridge several kilometers inland. The Waikanae ridge is somewhat taller than the other ridges we had been flying and it's nearly two-thousand feet of forty-five degree forested slope creates perfect ridge lift. After racing along it's seven kilometer length and climbing to over four thousand above sea level we were ready for somewhere new to fly.

We decided to head into wind out toward the sea in hopes of contacting the wave from Kapiti Island. About this time Ian Mugan, who had been racing around elsewhere, had the same idea and we met up with him over the beach west of Waikanae. To our south,

the lee rotor turbulence from Kapiti Island was clearly marked by three rapidly tumbling clouds, one over the sea, one over the beach, and a less distinct mass that merged with other clouds over Flat Top.

Above Kapiti Island hove a smooth grey lenticular cloud whose lee edge seemed to pour steeply down toward the sea like a waterfall. To enter the wave we would fly into a clear gap in this train of clouds and ride the up-going side of a rotor. This seemed quite straight forward indeed for the whole scene was laid out like a textbook rendition of a lee wave system.

I'll never forget watching Ian's glider swooping in toward the gap between the Kapiti "waterfall" and the first churning rotor cloud. We were right behind him and it seemed that we were plunging headlong into a colossal atmospheric mechanism.

Owing to Kapiti Islands' limited extent, the entire system was only a kilometer or so wide at best. In seconds we were out the other side and turning back to further explore the lift area. Shortly, we were climbing through five thousand feet in smooth lift. I called up Wellington Control on the radio to ask for the wave window to be opened. In a few moments they gave us a code which Les entered into the transponder on his panel and as soon as they had us on radar we were cleared to twelve thousand five-hundred.

The rest of the flight we really didn't go anywhere except up and down, but it was a beautiful and thrilling ride for us! The highest I'd ever been in Iowa thermals was eight thousand above the earth and had to work hard to achieve that! Here, we just sat in the smooth wave lift flying straight and level, going up like a glass elevator. Every now and then we'd make a minor correction to maintain our place in the wave but mostly we just took in the sights. Beckoning overhead was the primary wave cloud and across Cook Strait the coast of the south island was growing more pronounced as we climbed. We pushed upwind to the primary at around ten thousand and continued on up to twelve.

We topped-out at twelve thousand five hundred right over the top of the wave cloud above Kapiti Island. The lift area here was very small and it seemed like we were balancing on an invisible fountain. Turning would cause us to fall quickly away but flying back into it would soon have us perched atop again. Descending, we flew to the north end of the cloud and out around the front of it. Here, the only land we could see was the coastline of the south island far out across Cook Strait.

Higher, longer wave clouds were beginning to form up wind of us over the sea and seemed to be vaguely joining with wave clouds from the south island. I began to see that in a strong westerly the main islands of New Zealand act like the bows of huge ships plowing through the sky, pushing up wakes out ahead and streaming off to the sides, joining together even across the strait. I was tempted to push upwind to the next wave cloud to see if it would sustain us. Possibilities for exploration seemed boundless.

After zooming around the south end of the wave cloud we reluctantly descended toward Paraparaumu and prepared for the rotor turbulence over the airfield. I flew a close, high

energy approach and we were jostled around quite a bit all the way to touch down. The flight had lasted four and half hours which made a total of seven and a half for me that day. We were tired, but we didn't feel it. Les summed up the flight: " We did everything! Ridge, wave, soared all over the place, buzzed motorists on the highway, flew nearly 200K just goofing-off. It was great!"

Matt Michael
1996