

...Petersburg, West Virginia, Friday morning. The alarm goes off at 5:30 and I put on what I had carefully listed – with one omission, the heat pads for my boots! When I arrive at the airport at 6:30 a.m., the sun has not risen above the hills and an orange-red glow is spreading across the sky with wind blowing from the northwest. These were not ideal wave conditions as the wind needed to be more from the west, but I was hopeful.

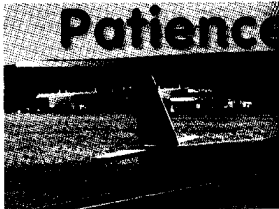
Fred Bancs, the FBO, was getting ready and we extricated the trusty 1-26 #081 from the jumble of gliders in the hangar and put it on the apron. It was time to clean the grime off of the wings, put in my water bottle, food, GPS, gloves, hat and oxygen mask. I turned on the oxygen and checked it, prepared the barograph, adding a new chart, winding it up, and locating a seal. Shane, my official observer, finished the process of signing and sealing the barograph, and strapping it in. I got into 081, the fourth time I had flown it. Shane tightened my straps – really tightened them: I could hardly breathe and my voice went up two octaves! At 8:30 a.m. we hooked up and I ran through my checklists, Shane re-checked the barograph, wished me luck and I closed the canopy for what would soon become the ride of my life! I was first off that day and the roll out was fine for the first few hundred feet. Then it began.

I thought I had been on some rough tows that had prepared me. I was wrong, very wrong. It began with a few bumps and suddenly the tow plane went up, then down, then left and right. I knew that whatever happened to the tow plane happened to me a few seconds later. Fred turned away from the ridge and I thought I would get some relief – wrong! We dropped 500 feet in an instant. The tow plane was rotating left. I was rotating right and I couldn't put in adequate control deflection. Then up again and back toward the ridge, then down. I had to use every ounce of concentration to keep the tow plane in sight and to keep the line taut. I was hanging on by sheer determination, trying not to get out of position. We did three circuits trying to get above the rotor to no avail. I had this bizarre image of some kind of wild computer game where you have to keep the target in the cross hairs! I discovered later that Fred declined to take anyone else over the ridge that day as the conditions were "as bad as they get."

As the torture ended, I reached 6,000' msf, got off tow and looked for the wave. My arm ached from the sheer effort of moving the stick so violently for close to 30 minutes. Where was the wave supposed to be just in front of the rotor? What wave? I found sink, more sink, turbulent sink and with every loss of 1,000', my heart sank too. In two minutes I was at 4,000' and had to make the hop back across the ridge if I expected to get back to the runway. I made a run for the airport watching the altimeter drop like a stone. I arrived almost with the tow plane and at only 1,500' agl.

Then, as if the God of Soaring had wanted to toy with me, I found some lift. I had already resigned myself, my Gold Altitude and Silver Duration were not to be. I thought I would try to use that lift so the day would not be a total loss. More in hope than expectation, I put in a 45-degree bank and started to circle in the lift. I soon found myself at 2,000' and relaxed a little. Then it was 3,000' and still climbing at 300 fpm in rotor lift. I stayed with it to 6,000', and decided to see if I could find the wave I knew must be out there. "But just where?" The sky was perfectly clear with no clouds as markers. I waited until the lift began to reduce and then headed out into the wind, flying straight and level – holding my breath. It went quiet and then I had 200 feet per minute... up!

I allowed myself the luxury of getting to 10,000' before I began to feel out the shape of the wave, flying gentle turns to



different headings using my handheld GPS to monitor ground speed – typically between 10 mph into the wind through dead stop to 40 or 50 mph with the wind.

Then, I made a startling discovery! The compass always showed east regardless of what heading I was on! It was stuck! It had not been moved in the refit. Later investigation revealed that the frame of the aircraft was somehow magnetized. I needed to replace the compass.

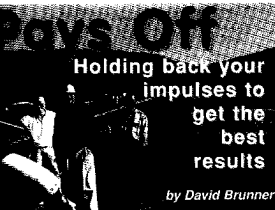
Reaching 11k, I decided to move on to the next wave. Knowing I would lose some altitude, I set off at right angles to the ridge and encountered sink, then more sink, then turbulent sink, then just plain turbulence and then up again. Having lost roughly 3,500', I was now in what I believed to be the secondary wave and going up at 200 fpm again! It was back up to 11k and then a hop across to the primary just like before. By now it was mid-morning and I could be pretty certain of my Gold Altitude, and, provided I didn't screw up, maybe my Silver Duration.

I took time for a drink and something to eat to relax and enjoy the ride. The views were breathtaking – indescribable snow-covered mountains set against blue sky. I felt good and spoke to other pilots, although the cold was beginning to have some effect on my feet (with the cockpit about 15 degrees.).

I continued up to 14k, feeling out the wave but never managing to get more than 200-300 fpm, and was about to encounter my first real problem. Deciding it was time to get my oxygen mask ready, I reached down only to find it wasn't there. The turbulence in the tow had dislodged it. "Oh brother!" (I can't repeat what I actually said.) I released my straps, reached round, found the pipe and pulled. Now I had the flow indicator, the pipe – and no mask! With further excruciating twisting, I reached the mask. What a relief! All the hard work, including the save, would have been wasted. I donned the mask and breathed a sigh of relief, and oxygen, as I reached 15,000'.

One of the other pilots passing me (having successfully obtained his Gold Altitude) said he'd like to take a picture if I would do a 360-degree turn so he could see me. I did, but he still couldn't see me and he asked if I could do another. I obliged, and promptly fell out of the wave! I couldn't believe it. How could I be so careless? It took me some time to find wave again.

It was back up now with the prospect of a possible Diamond, but could I really do it? I had now been in the air four hours and I was approaching 18,000' and getting cold,



# Waves Off

## Holding back your impulses to get the best results

by David Brunner

very cold. With the lift at only 100 or so fpm and getting less by the minute, I seriously doubted whether I could do it. I knew I needed at least 19k for Diamond, and wondered whether I was going to fail by 1,000'.

Suddenly, I began to feel fuzzy and lightheaded. I checked my regulator, which showed 1,500 pounds pressure with the green flow indicator showing flow. That wasn't the problem. As I turned my head to look around, horror! The pipe connected to the mask fell into my lap. Fortunately, I quickly realized the problem and rectified the situation.

By now I was getting colder. The indicated temperature in the cockpit was -10°. I had been stuck at 18k – seemingly as high as I was going to get. My water bottle had started to freeze. Sucking at the icy bit in the neck, I managed to get the water trickling through, ate and appraised the situation. "I had my Gold Altitude, and my Silver, yet, I was only 1,000 messey feet from Diamond. There had to be some way!"

As I moved through the wave, I realized I was stuck in equilibrium, not losing or gaining. As I went faster to penetrate, my sink rate increased. I had to do that to get back into the wave because the wind was blowing me out. I decided to try something: forward at 60 mph into the wind for one minute, sink rate 200 fpm, altitude lost 200 feet, pull up, slow to 45 mph and up for one minute at 250 fpm. Net gain of 50 feet. I had a plan! It was slow and painful, but during the next hour I clawed my way up to 19k, until eventually, even that technique began to fail. Some six hours after starting, I was at 19k and with a low point of 1,500', I had done it. No margin, no room.

I was tired, dehydrated and very, very cold. My GPS had long since stopped and I had been at or above 14k for nearly four hours. It was time to come home. The controls on the 1-26 had become stiff as the lubricants solidified. We needed to get lower. Mother Nature was calling; I couldn't answer the call. I couldn't believe it! Why couldn't I relax? The call was eventually heeded and relief followed. [Note: Don't underestimate what a problem this can be!]

Over the next 30 minutes I carefully descended to 12k to avoid any problems, removed the oxygen mask and began to warm up – wiggling my feet and moving the rudder and relaxing. I began to wonder about the location of the airport. I had flown from there the day before, so a gentle 360 and – it wasn't then! There was the town, the river, the shapes in the hills, but where was the airport? "Surely it must be there?" Another 360. I still couldn't see it. I pride myself on not get-

ting lost, and of course there was an explanation: I was directly above it! "Duh!"

I had time to relax and enjoy the descent, using it to play in the wave, to build a mental picture of where it went up, down and did nothing much. I descended to 3,000' msl, checked the airport windsock and went through my landing checklist, relieved to find my spoilers had not frozen shut. As the battery had given up a couple of hours ago, there was no point in making a radio call. Aware that the pressure may have changed, I paid less heed to the altimeter and set up a left hand pattern, chose an aim point half way down the runway in the snow, held it off and had one of my best landings ever in the 1-26.

We were home and safe at 4 p.m., seven and a half-hours after take off. This had been my first ever solo wave flight in only my fourth flight in the 1-26. Shane unsealed the barograph and informed me that in his estimation the low point was 2,550' msl and the high point 19,250' msl an altitude gain of 16,700' – if the barograph calibration was correct! I grinned and accepted congratulations.

What did it cost? I estimate that additional clothing, accommodations, food, and registration came to \$500. As the ad says, "for all these things there is your credit card." But on your first wave flight, in a 1-26, to climb over 16,000' and to stay in the air for seven and a half hours – that is priceless.

This flight required planning, preparation and a great deal of luck, as everything seemed to come together at the right time. The failure of any one facet of the flight could have prevented it or relegated it to failure. For example, had I found wave at 6,000' a Diamond would have been out of the question. What if I had failed to realize that the oxygen had disconnected? (That doesn't bear thinking about.) Had I not flown in wave a few weeks before and recognized its form, had the oxygen bottle not been returned or the regulator not passed its test, had the weather not been right, I would have failed. I learned how it feels to dig into mental and physical reserves to achieve a goal. The accomplishment is supremely satisfying.

I owe a debt of gratitude to all those who helped with logistics, preparation and moral support: Jim Kellett, Bob and Tracey Collier, Bill Vickland, Shane Neitzey, my partners in 081, and the folks at W99.

Of course I will be disappointed if I don't get Diamond. I had planned for Gold but Diamond would be wonderful. But I know that I can do it over. The challenge will always remain, and the memory of that first flight in wave and to altitude will be with me for all time – priceless. That is what makes our hearts and our lives soar.

Thank you Skyline and the staff at W99. Thank you 081, you repaid my efforts and then some.

**About the Author:** David Brunner lives and works in Harrisonburg, Virginia and is a lecturer at James Madison University. His flying career started in 1998 with Skyline Soaring in the Shenandoah Valley, which he joined in June of that year. He went solo in August and obtained his PPL(G) in December. During that time he has obtained his Bronze and Silver (altitude) badges and become part owner of a 1-26, #081. Prior to joining Skyline he had no other flying experience. Although he sounds like a Brit, he is actually Canadian by birth, but we won't hold that against him.

