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- conduct programs of environmental observation and technical research
- develop educational programs to advance public knowledge of the meteorology, subarctic environment and natural and human history of the Mount Washington region; and
- preserve the unique character and heritage of Mount Washington.

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Jim Salge Photo

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Summit and Observatory from the Air. Photo by Earl Adams.  
Inset: Wind-sculpted snow. Photo by Jim Salge.

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# Glimpse of "A Timeless Sky"

by Ann Posegate

Having moved to the White Mountains to work — without ever having been here before — I have never really considered myself a tourist of the region. Though I have to admit, one mid-October day last year I found myself grinning and glowing like an awestruck tourist, asking many questions, with my eyes glued to the window and my hand plastered to my camera. Forty minutes and 8,500 feet later, I was glad I had finally had the sightseeing experience.

When invited to "ride the Mount Washington wave" in a glider last October (a kind offer made to Observatory staff), I was immediately impressed that there exists a group of pilots who apparently think this is normal. Though this experience would be in air rather than water, turbulent flashbacks of my first surfing experience flooded my memory. Being familiar

with the unpredictability of wind blowing over, above and around the mountain, I did not make an immediate decision. A few other Observatory employees were interested; maybe I would brave it if they went along too. However, as the deadline for the decision approached, their eagerness faded or their busy schedules did not permit a roundtrip trek to Gorham, NH, with intermediate "airtime."

Two days before the suggested flight date, I called Kevin Brooker, the enthusiastic pilot from Post Mills Soaring Club I



Ann and pilot Kevin Brooker

Neil Lareau Photo

Ann Posegate Photo



The summit from above, looking south

had previously spoken with over the phone. The rare opportunity of viewing the summit from a unique perspective and the appeal of an adrenaline rush were outweighing my uncertainty about being the front passenger in a small metal aircraft with no motor, helplessly soaring several thousand feet above the ground. Thus, I accepted the offer.

## In Preparation

My choice ended up being far more worthwhile than I could have imagined. At the last minute, past intern and current Observer Neil Lareau also agreed to go along, though similarly, his nerves were telling him to do otherwise. Kevin had told us beforehand to be prepared for cold, since temperature decreases as altitude increases. He had also mentioned that in a good Mount Washington wave, pilots have been known to soar higher than 20,000 feet; on rare days, above 30,000 feet. However, we would not be attempting an altitude beyond 14,000 feet, and would therefore not need to use bottled oxygen...how comforting!

The Gorham airstrip was our point of departure. Other than this small grass landing strip, safe take off and landing locations around Mount Washington are very limited. As we arrived, we noticed many vehicles and quite a few planes settled near the end of the relatively short and narrow runway: a motor-

ized prop plane used to tow gliders (also called sailplanes), a new white glider with long, sleek fiberglass wings and a well-used but sturdy metal glider in which we were going to fly. Later we learned that the latter was the same model created by Czechs to train fighter pilots during the Cold War; flying the glider was one of the pilots' first tasks.

Also noticeable was the lack of wind. Valley winds were no more than five to 10 miles per hour, while summit winds were in the 30 to 40 mile-per-hour range. Lucky for us, it was quite warm, clear and calm for mid-autumn in the mountains; even a 10,000-foot flight seemed unattainable. We figured that even though we might not get to fly as high as expected, it would still be worth the experience (and that much less intimidating).

Though we trusted our visiting hosts from Post Mills, Vermont, and other pilots from the Greater Boston Soaring Club, Neil and I still joked about praying to Bernoulli (a scientist hopefully revered by all pilots for explaining the acceleration of air over curved surfaces). Neil volun-

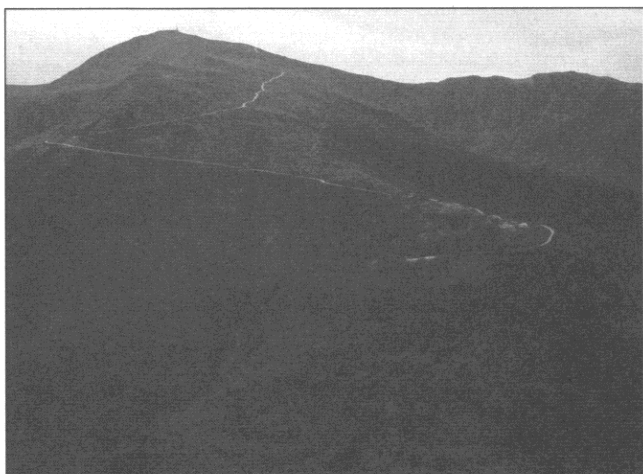
teered for the first ascent. After he fastened the shoulder straps and seatbelt rather snugly and listened to descriptions of the controls, instrument panel, oxygen system and vomit bag (again...very comforting), the canopy was closed and the tow rope secured to the towplane ahead. Off he went in the front seat of the two-seated glider with experienced pilot Kevin Brooker at the controls behind him.

### Weather and Wave

Alongside the airstrip, a few other pilots and I watched as the towplane gradually lifted off the ground. Only a rope's throw behind was the glider, skimming the grass and hugging the airstrip until finally being pulled up into the air. Neil and Kevin were planning on soaring over the Great Gulf Wilderness along the northern slope of Mount Washington. While awaiting the plane's return, the pilots and I spoke of "the why behind the sky" regarding this mighty mountain: talk of world-record winds, topography and the importance of weather to the sport of soaring, with special emphasis on the up-to-date information provided by the Observatory to those venturing above Mount Washington.

Yes, above our humble summit facility lies some of the best wave in the country. When pilots talk of wave, they are referring to the lift generated when strong winds encounter a mountain range or hill. The sport of soaring depends on "lift," in which pilots can gain altitude. Mountain waves are one way of generating lift. The Presidential range is conveniently oriented in a north-south direction, perpendicular

to prevailing westerly and northwesterly winds. As winds approach the steep western slopes of Mount Washington, they ascend rapidly along the grade, accelerating even more when flowing over the rounded summit (due to Bernoulli's principle, or the venturi effect). A wave or series of waves, in which the air sinks only to rise again over unstable air below, are created on the downwind (or "lee") side of the mountain, sometimes with much vertical height. Altitude gain of 1,000 feet per minute is quite possible if a glider catches a strong wave. One of the best places to search for wave lift is near "the Horn" along the northern slope, near the final



Profile of the Auto Road

Ann Posegate Photo

turn in the Auto Road and south of the Great Gulf.

Thermals — pockets of warm, rising air — are another means of lift. The third is called ridge lift, which is created by winds flowing up a windward slope. Rather than searching for individual thermals around Mount Washington, glider pilots first look for the strong primary wave, while thermals and ridges offer additional lift. They tend to look for a current of rising air, visible in the form of stratified cloud layers (often with "windows" or open spaces

between them), or in clouds such as rotor, cumulus or low- to mid-level stacked lenticulars. The biggest, safest and most stable wave sets up in mid-autumn, when days become shorter, less heating due to solar radiation occurs, and there are fewer thermals to interfere with the primary wave.

Though riding the Mount Washington wave can be an award-winning experience, variable weather conditions can change the wave almost instantly, setting the stage for danger despite a pilot's skill and preparedness. Pilots who soar above the summit must have a great deal of experience in their hobby and in visually monitoring weather. The wave — like the weather — has a mind of its own. During all activities on or above Mount Washington, *"with experience and care, the risks can be lowered, but not eliminated... Pilots should strive to develop the judgment that will keep them safe, understanding that mountains such as these regularly present conditions in which even excellent aircraft and skilled pilots cannot safely fly."* (from *Flying Mt. Washington Area Wave from Gorham, NH*, produced for the Post Mills Soaring Club by John F. Good — Version 3.1, October, 2003).

Despite dangers, seeking out the Mount Washington wave has been a pastime for glider pilots for many years. In 1938, Lew Barringer was the first to pilot a sailplane in the White Mountains. Not until 1966 was another successful flight attempted. For years afterward, annual encampments were set up in North Conway each fall for the same purpose. Post Mills Soaring Club, Greater Boston Soaring Club and



Ann Posegate Photo

Soaring parallel to Huntington Ravine's Headwall

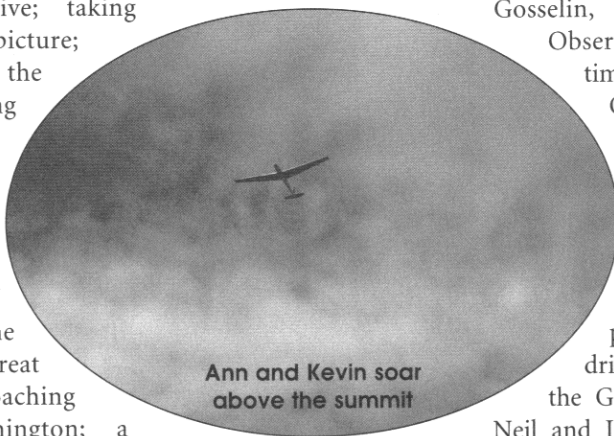
visiting pilots from locations worldwide began setting up camp in Gorham several years ago, and most return annually for one week, beginning on Columbus Day weekend.

The unofficial record for highest glider flight in the Mount Washington wave is close to 37,000 feet. This is over 12,000 feet below the world record absolute altitude gained in soaring. At altitudes such as these, pilots not only need a reliable supply of oxygen (with extra back-up and emergency systems), but also heated boots, plenty of winter apparel and if handy, a pressure suit. Add to that plenty of experience and training, a good tow pilot and reliable ground support, and a pilot may be soaring to record-breaking heights.

### Soaring in a Timeless Sky\*

After the first flight returned, Neil had such a contented smile on his face that, suddenly, my nerves calmed and I was eager to soar. I was so awestruck during my flight that all moments during the experience seemed to stream together. Those occasions when one is able to forget about the concept of time and take in the

present are infrequent. Thus, for forty minutes (though I was not keeping time at the time), my senses were over-aware and I noticed as much as possible: our glider being forced through the air like a fish on a leash; Madison hut from above; taking a picture; seeing the Auto Road and the northern slope of the mountain from a new perspective; taking another picture; smoke from the Cog traveling horizontally, sinking gradually, then rising (indicating the presence of wave near the end of the Great Gulf); approaching Mount Washington; a slight jerk as our tow rope was released; silence...smooth, effortless flight; taking another picture; soaring 1,000 feet over the summit; the remaining greenery in the Alpine Garden and Tuckerman Ravine; turning back toward the summit; waving at the little red dots of L.L.Bean fleece below; taking another picture; realizing how severe the grade of the Huntington Ravine headwall is while soaring parallel to it; catching a small amount of lift near the Carter-Moriah range (indicated by slight turbulence, followed by smooth sailing); Kevin mentioning that the North Conway wave camps frequently soared over this area many years ago...there had been some crashes due to unexpected lift and resulting turbulence; taking another picture; imagining a raven's flight; noticing the sound of silence again; Kevin offering me the chance to fly the aircraft (and me politely declining); descending in steady switch-backs over lingering fall foliage north of



Pinkham notch; taking another few pictures; making the final descent into Gorham; and finally, the ease with which the glider was gracefully landed, the left wingtip tilting to touch the ground, and coming to a stop.

Only after this experience did I understand the written words of Guy Gosselin, former Chief Observer and long time friend of the Observatory: "The sailplane impresses me as being almost literally more bird than airplane."\* Before driving away from the Gorham airstrip, Neil and I expressed our appreciation to Kevin for sharing with us his enthusiasm for the sky, and for offering us a glimpse of flight and yet another connection to our favorite mountain. Neil—with a smile on his face that mirrored mine, one that will be reincarnated every time he thinks of the soaring experience—expressed, "That was the closest I'll ever come to being a raven." And I understood.

## References/For More Information

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