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# ON A WING AND HOT AIR

EXPERIENCING THE  
ALPINE MAJESTY OF  
MOUNT SHASTA VALLEY  
BY LAND AND AIR.



BY DON SHERMAN    PHOTOGRAPHY BY GUNNAR CONRAD



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DB



Siskiyou County, California—

**W**hat's a horsepower hound like me doing in an engine-less aircraft with a parachute strapped to my back and my fate in the hands of a retired schoolteacher? You could catalog what a journalist won't do for a thrill on a matchbook cover with ample space left over for advertising. Welcome to the noble sport of soaring: one pilot, one scribe, on eighty-seven-foot-long wings drawn heavenward by a nylon rope.

Without warning my host—ex-educator Gary Kemp, who has committed this portion of his retirement to captaining the U.S. Soaring Team—releases the towline, which prompts that sinking feeling inevitable with any heavier-than-air object held aloft by high hopes. The sensation lies somewhere between an elevator plunge from the top floor of the Sears Tower and the butterflies you get as you crest the top of a steep hill at speed.

## Like every adventure, soaring enjoys

swinging through what must be a ten-foot arc. Our white composite-plastic sailplane is flapping its wings in a crude imitation of flight. But a full minute after relinquishing our tie to horsepower, instrument readings are encouraging: We're making seventy-five knots (86 mph) horizontally and holding our own vertically. Even though the ropes holding us up are invisible, Kemp obviously knows them well.

You can see the whole world through our polished plastic canopy—Mount Shasta's snow-topped twin peaks a few miles to the south, California's Interstate 5 snaking below, irrigated prairies here, alpine forests there. It's a spectacular view on a perfect day; a robin's-egg-blue sky dotted with cotton-candy clouds warmed by those oh-so-golden California rays. The only mistake I made was not donning a hat. My brain is starting to bubble like a pot pie in a microwave and I'm ready for a cooling brush against the clouds a few thousand feet above our heads.

As we cross over one craggy peak, the warbling variometer that audibly reports our rate of climb sings a higher note as we're simultaneously hit with a massive wallop from below. Kemp heels the craft into a thirty-degree bank and we climb like an express elevator. I watch an instrument in my back-seat cockpit swing from 500, through 700 feet per minute, and occasionally touch the 900 mark as we helix higher. When we reach 7100 feet on the altimeter the clouds are literally right over our heads. The shade cuts the oppressive cabin heat and all is right with the world.

With abundant altitude under our wings, we can glide cross-country for miles and see the sights of northern California and

<b>ADVENTURE</b>	<b>SOARING OVER SHASTA</b>
<b>BEST TIME TO GO</b>	<b>SUMMER</b>
<b>4x4 DIFFICULTY LEVEL</b>	<b>CHILD'S PLAY</b>

But not to worry. Captain Kemp has thirty-three years of soaring under his belt, and he knows the lay of the land around the Mount Shasta Soaring Center at the Siskiyou (pronounced "sis-cue") County, California, airport. We're in easy reach of Paradise Craggy, a sure source of the rising hot air known as thermals. At 5000 feet, only a couple hundred feet below the release point, we bump into an invisible force that flicks us aloft like a feather. "Pretty strong lift for this time of day," observes Kemp. At 6000 feet there's another healthy upward surge. I steal a glance down the wing line and notice the tips—way out there forty or more feet—



**HURRY UP AND WAIT** Soaring is a highly organized sport that requires patience. There's no flying unless the sun shines, because the lift depends on warm air rising off the solar-heated landscape. Most competitors line up and wait for their turn behind a tow plane (below), though Ron Tabery's Open Class Schleicher ASW-22 (left) can launch itself using a foldaway propulsion system. Fifteen minutes after the final lift-off, pilots receive a radio call to commence their assigned tasks.



## its own special collection of myths and misunderstandings.

southern Oregon to our hearts' content. (The current world-record distance for a glider flight is more than 1200 miles.) The combination of rising air, skill at the controls, and the sheer efficiency of our craft has lifted us from a release altitude of 5200 feet to 7100 feet in ten minutes. I feel a touch of the thrill aviation pioneers Otto Lilienthal and the Wright brothers must have enjoyed when they cracked the fundamental secrets of flight.

Like every adventure, soaring enjoys its own special collection of myths and misunderstandings. Silence and serenity top that list. Even without the growl of internal combustion providing thrust, there's more than enough noise to keep you from nodding off. The composite structure constantly creaks and groans in response to varying lift and drag forces. The wind whoosh is ever present, with an intensity directly proportional to your horizontal velocity. Every time the nose drops and air speed rises, I picture Slim Pickens riding the nuke home to target delta in *Dr. Strangelove*. But with a sixty-to-one glide ratio, there's absolutely no sense of panic over locating a safe landing site. At this altitude, we have more than fifty miles of operating range, not counting the inevitable thermals rising off the solar-heated farmland en route home. So when Kemp vectors back to base with military precision, I step out of the sailplane ready to do it all over again. Cancel the cliché photo of this soaring novice with a frantic lip lock on terra firma.

My joy ride came at the conclusion of an intense two-week Open Class National Competition sponsored by the Soaring Society of America. The purpose of this annual contest is to identify those pilots best able to represent America at the world level.

When foul weather scrubbed one day's activities, I cornered a couple of the aces on hand to plumb their deep wells of experience.

Ron Tabery, a forty-seven-year-old chemical engineer from Austin, Texas, with four Open Class championship notches on his



belt, is soaring's perfect spokesman. Without a hint of smugness, he revealed his entry into the sport. "My first glider ride was with Neil Armstrong at age eight, but I didn't begin flying seriously until I was thirteen. We lived in Houston. Neil was an astronaut training for the Gemini VIII mission and a member of the local glider club. You have to be sixteen to obtain a power-plane license, but you can solo a glider at age fourteen. I had two instructors—my father and Neil."

I asked Tabery the secrets to becoming a successful sailplane pilot. "Desire is essential," he answered. "You've got to hang out at glider contests and learn from your mistakes. There's so much you need to know in this sport that I'm still learning after more than thirty years and nearly 4000 hours in my flight log.

"You start with a student license, take lessons from a certified

instructor, and solo when you're ready. That takes ten to fifteen hours of flight time. The written and oral tests are not much different from what's necessary to receive a single-engine pilot's license. A really dedicated student could earn a license in a month. With weather conditions factored in, it usually takes a year." Cost: between \$1000 and \$2000.

The Soaring Society of America (SSA) claims 15,000 active members, most of whom hold a pilot's license. Those who compete in SSA-governed soaring competition do so in four distinct classes determined primarily by wingspan, because that factor has the greatest influence on performance. What's called the Standard Class has a maximum 15-meter (49-foot) wingspan. Craft with the same wingspan and full-length flaps occupy the 15-meter Class. (Flaps are hinged aerodynamic surfaces used to alter the

FIELD REPORT

## On the Wing: A Brief History of Taking to the Air



Otto Lilienthal, circa 1896.

**HUMANKIND HAS ALWAYS** envied birds, and why not? Soaring over treetop and dale sure beats walking, though flight has

never been without its perils. Seven centuries B.C., the rapture of Daedalus and Icarus was the stuff of Greek legend. This father and son team allegedly escaped captivity by sticking feathers to themselves with beeswax. Daedalus discovered the shortcomings of his scheme when Icarus filed a flight plan too close to the sun and plunged into the sea.

More fruitful investigations were conducted by Leonardo da Vinci, the inventor of practically everything but the PalmPilot. Starting around A.D.

1500, this brilliant Italian penned sketches of parachutes, helicopters, and flapping craft, though he missed a critical detail: soaring eagles and condors fly while expending notably less energy than flapping hummingbirds.

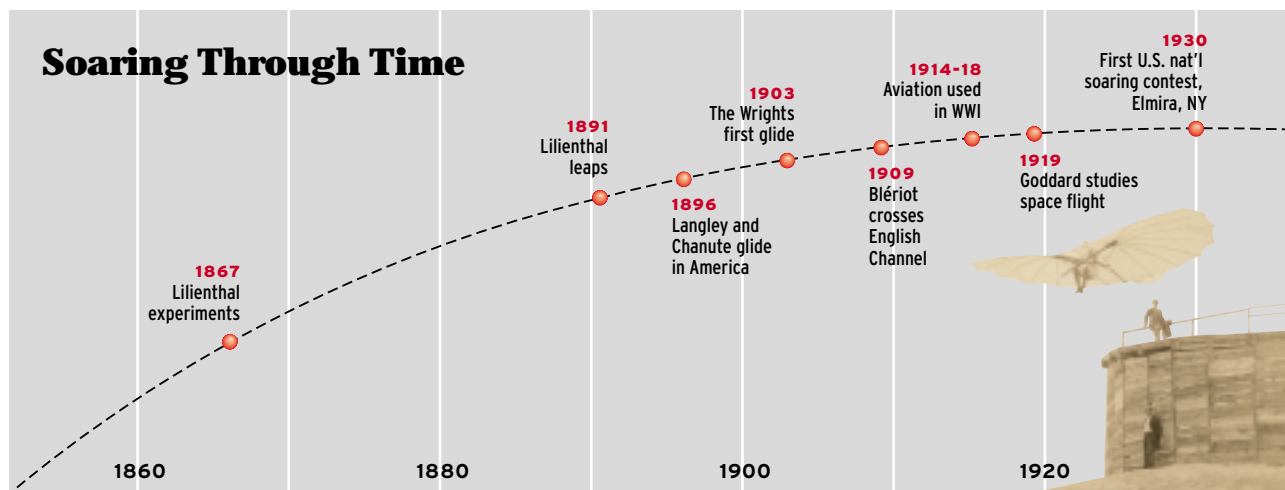
Scientific methods were first applied to the pursuit of flight in the nineteenth century. Otto Lilienthal began experiments in 1867 while studying civil engineering in Berlin. His 1889 *Bird Flight as the Basis of Aviation* served as a primer for decades. In 1891, Lilienthal leaped from a hillock to glide eighty feet aboard his Derwitzer glider. With its twenty-five-foot wingspan, this forty-pound craft is now recognized as the world's first successful man-carrying glider. A refined design was subsequently patented so that copies could be made and sold. Biplanes and motor-driven flapping-wing machines followed. Lilienthal made notable progress

toward defining aerial stability and control with more than 2000 flights. Unfortunately, an attempt to climb on rising air currents proved his undoing. He crashed and died in 1896.

The Wright brothers literally took off from Lilienthal's accomplishments. Achieving three-axis control of their glider set the stage for their epochal December 1903 powered flight at Kitty Hawk. While the rest of the aviation world chased aircraft with engines, a die-hard few upheld the dream of flying like birds to create the sport of soaring.

For more information, visit the Otto Lilienthal Museum located in Anklam, Germany (<http://home.t-online.de/home/lilienthalmuseum>), or the National Soaring Museum in Elmira, New York (607-734-3128; [www.soaringmuseum.org](http://www.soaringmuseum.org)). The Soaring Society of America located in Hobbs, New Mexico, can be visited online at [www.ssa.org](http://www.ssa.org).

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PHOTOS COURTESY OF THE ARCHIVES OF THE OTTO LILIENTHAL MUSEUM

You can see the  
**WHOLE  
WORLD**  
through our  
polished plastic  
canopy.





wing's lift and drag characteristics.) The 18-meter Class permits another ten feet of wingspan. The Open Class imposes no restriction on wing configuration, but the craft's ready-to-fly weight may not exceed 750 kilograms or 1650 pounds.

Tabery's Open Class Schleicher ASW-22 has wings that stretch a heroic eighty-eight feet. He puts that in perspective by noting it's not much shorter than a DC-9's reach. For competitive reasons, it's essential to leave the ground with water ballast tanks loaded right to the 1650-pound limit. Tabery, whose father was the first sailplane pilot to experiment with water ballast in 1947, explains why: "A soaring competition is for all intents a physics exam where you're constantly exchanging potential and kinetic energy. To maximize the potential energy at your disposal at the beginning of the race, you want the heaviest possible craft and maximum altitude."

The competition is speed-based using two distinct formats. The first is called Pilot Option; within a given block of time, the pilot flies around any desired course to rack up as many miles as possible. The more common format at Mount Shasta is called Assigned Task; here you race from one turn point to the next on a route defined by the competition director. After each craft is launched, it flies to a mustering point—an imaginary five-mile-diameter cylinder extending from the ground to a 9000-foot altitude to give every competitor ample maneuvering room. The competition technically begins fifteen minutes after the final plane is launched, though each competitor's speed clock doesn't start until he or she leaves the starting cylinder's boundaries. Beyond 14,000 feet, supplemental oxygen is used to keep a clear head. (The FAA-imposed ceiling is 18,000 feet, but the world

**TOOLS OF THE TRADE** Highly efficient (and lengthy) wings provide sixty feet of horizontal range for each foot of altitude, though nicks or bug build-up will deteriorate their performance. GPS instruments and recorders are crucial to navigating the prescribed course. Our butch-looking Chevrolet Avalanche tow tool (below) never broke a sweat.



record altitude for sailplanes is 49,000 feet.) On-board GPS instruments support navigation and course verification. Each craft's GPS recorder is handed in at the end of the day for analysis that reveals both the speed achieved and whether the craft flew the prescribed course within a quarter-mile of every turn point.

A cockpit full of sailplane instruments costs roughly \$6500, but that's merely the tip of the iceberg. Tabery describes the price of a front-line Open Class sailplane as "a modest house." In round figures that's \$100,000 for the plane, another \$9000 for a suitable transport trailer. Tabery has an interesting option on his craft that adds another \$33,000 or so to the tab: a 60-horsepower single-rotor Wankel engine that drives a two-blade propeller for self-sufficient launches. This system hinges up from a fuselage bay just behind the wing for takeoff. When a suitable altitude is reached, the engine is switched off, a device aligns the blades with the fuselage, and the power system swings back into its storage compartment. The extra mass has no influence on performance because an additional 500 pounds of ballast is still needed to reach the racing weight limit.

Tabery used neither his engine nor the Chevrolet Avalanche support vehicle we offered for launch purposes, but he did accept a tow to the Mount Shasta event's starting line. The contrast between the two machines couldn't be more dramatic. The spindly and sleek sailplane next to our big green monster truck constituted the mechanical equivalent of beauty and the beast. Still, there were envious eyes. Gary Kemp for one noted, "I could have made excellent use of your truck when I landed out in a plowed field the other day."

Tabery confirms that every sailplane pilot "lands out" sooner or later, including world-class champions. "When the weather's not there, you just go down," he explains. "The whole thermalizing maneuver demands skill, refinement, and practice. You're looking for cumulus clouds that mark the lift. As warm air rises, it expands and cools to make the cloud. So wherever there's a cloud, there's lift.

"The challenge is to center the craft in the strongest part of the lift column. We may describe the maneuver as a circle or a spiral, but one side is invariably stronger than the other because of wind, so you're constantly refining your turn. Since you're traveling nowhere in a spiral, you want to climb as quickly as possible to get going again. Altitude is money in the bank that you can spend in the form of speed over distance.

"Another maneuver we use is called 'dolphins.' When you hit an updraft while cruising cross-country at 100 or 150 mph, pulling the stick back can jump you a thousand feet from the combination of kinetic and thermal energy. It's like Superman leaping buildings in a single bound or a dolphin surging out of the water. When the lift is lined up in what we call 'cloud streets,' you can fly fifty miles with no loss of altitude and no need for circling. It's not unusual to maintain a 100-mph ground-speed average when this occurs."

Unfortunately, a tactical error on the fifth day of the competition cost Tabery dearly and he ended up third in overall standings, 120 points (out of a maximum 6000) behind Chip Garner and Rex Mayes in their two-place Schleicher. Proof that accidents can happen when you're having fun was dramatically supplied by Paul DeMeester, who snagged a wing while landing on the fifth day of competition, looped his craft, and broke both his sailplane and his foot. But there's little doubt he'll be back for more. As these pilots assured me, soaring isn't just a sport—it's an addiction. <<

## FIELD NOTES

Northern California's **Mount**

**Shasta region** is so blessed with rivers, mountains, forests, and volcanoes that even the most jaded adventurer will find fresh experiences to tuck in his or her knapsack. Legend has it that the mountain is the home of the Lemurians who fled the lost continent of Mu when it was overwhelmed by the Pacific

Ocean. Rising to a glorious 14,162 feet, the currently dormant Mount Shasta is the most majestic peak in the Cascade chain.

At its base, you can ride **McCloud Railroad's Shasta Sunset Dinner Train** on a three-hour extravaganza of gourmet dining and breathtaking views of two mountains, alpine forests, and lush meadows aboard turn-of-the-century dining cars (800-733-2141, or visit [www.shastasunset.com](http://www.shastasunset.com) for reservations).

Veteran anglers will enjoy polishing their casting techniques in some of the world's finest trout streams; rank novices can arrive empty-handed to rent gear and learn from the pros.

World-renowned guide **Jack Trout** (no lie!) will help you land the fifteen- to seventeen-inch rainbow or brown trout on the McCloud River (530-926-4540; [www.jacktrout.com](http://www.jacktrout.com)). Historic **Dunsmuir** offers sleeping and dining accommodations in period rail cars and the last working locomotive turntable in North America.

For more comfort far from the clickety-clack, try the **Mount Shasta Ranch Bed and Breakfast**, 1008 W. A. Barr Road, Mount Shasta, California 96067 (530-926-3870; [alpinere@snowcrest.net](mailto:alpinere@snowcrest.net)). This eighty-year-old ranch house was originally the home of H.D. Curley Brown, a wealthy cattle and thoroughbred-horse breeder who established several of this country's grand race tracks. The original 125-foot swimming pool and sunken tennis courts are long gone, but host Bill Larsen offers a warm hearth, congenial rooms, and a hearty breakfast spread. His eleven rooms range from \$55 to \$95 per night plus tax.

The specialty at Mexican restaurant **Casa Ramos**, 1136 S. Mount Shasta Boulevard, Mount Shasta, California 96067 (530-926-0250), is **borrego**, a marinated and baked lamb shank. Their delicious margaritas are served in vessels nearly large enough for bathing.

For lighter fare (burgers, tacos, homemade cookies), try the **Opera Restaurant**, 170 S. Eleventh, Montague, California 96064 (530-926-5794). During summer months, the Blue Goose steam excursion train still stops in this turn-of-the-century railroad town that was once the home of the Central Pacific Railroad's chief engineer Samuel Montague.



*Mount Shasta is sacred to Native Americans.*



*Casa Ramos offers hearty fare and heavenly refreshments.*