



The Making of a Glider Pilot

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This was to have been a report on an introduction to soaring. It is not. Instead, it must be an account of riding sailplanes from fixed points in the sky downward to oh-so-gentle landings. In a word, gliding. The experience is a peaceful one, a quiet one, even a mildly exhilarating one. But at best it's half a loaf. I never soared.

It began with a slightly tardy arrival at Schweizer Aircraft Corporation's log-cabin ground school beside runway 24 at Chemung County Airport in Elmira, N.Y. The class of five had already gathered, so brief introductions were made and the instructor began.

"We use runway 24 Alfa; that's the grass surface beside the runway, away from the tower... They conduct simultaneous operations here. You may be landing with someone off your wingtip, so don't go wide ...

"We always try for spot landings and never land short. That's a major thing in gliders. We frown on landing short. In fact, that's inexcusable . . .

"We don't use the dive brakes to slow us down, we use them to increase our rate of descent . . .

"When using the radio, the main things we're listening for are Allegheny airliners and twin-engine aircraft. We can't land simultaneously with either of them . . . "If the tow rope breaks between 200 and

500 feet, make a 180 and land downwind . . .

"In off-field landings, gliders are much safer than powered aircraft. Every landing we make is a forced landing anyway; it's just that most happen to occur on an airport. It takes only 100 feet to stop ...

"Try not to land in a field with animals, especially cows, because they like to eat the control surfaces. And one thing to remember: you're responsible for crop damage . . ."

A guernsey's diet seems foreign to groundschool discussion, but here it came up in the first 30 minutes. Dive brakes? Simultaneous landings? Tow-rope breaks? This was a whole new ballgame.

continued

The 2-33, Schweizer's rugged tandem trainer, is everyone's introduction to soaring around Elmira, N.Y. There was further talk of stall speeds, pattern speeds, slips and clearing turns (after all, sailplanes are planes), but peculiar new terms kept cropping up. Like "minimum sink speed," the speed at which a sailplane will remain in the air the longest; and "lift-over-drag speed," the speed at which you cover the most ground with the least amount of descent. There was also this matter of dive brakes, which are actually spoilers and speed brakes working simultaneously. And then the talk of ridge soaring, thermals, tow procedures and the like.

Following the morning ground-school session, we were shepherded to a squatting, legless trainer that was leaning drunkenly on one wing. This was the Schweizer 2-33. (The model numbers have meaning. The prefix number denotes the number of people the plane can carry; the second number marks the model's place in Schweizer history. Thus, the 2-33 carries two people and was the 33rd model designed by the company.)

The aircraft, a tandem with metal wings and a Ceconite-covered fuselage, costs \$7,750, including an airspeed indicator, the only stock instrument. Addition of an altimeter, a compass and a variometer would cost about \$200 more. Because of its Ceconite skin, the 2-33 is the only one of the four models now manufactured by Schweizer that is not all metal in construction.

The walkaround wasn't all that unusual, just abbreviated. There are fewer things to check on a sailplane, because there are fewer things, period. We were cautioned to report any cracks on the metal-plated oak skid in front of the landing wheel and to make sure the rope lock released properly.

For the benefit of the goslings, we were briefed on the craft's instrumentation. There was an altimeter, an airspeed indicator and the variometer, a sensitive vertical speed indicator. There was also a two-channel, batterypowered radio and a fat red knob that was centered on the dash. Stenciled above the knob was a single, self-explanatory word: "Release." Control was exercised through a joy stick, a four-place trim lever and a dive-brake lever that doubled as a wheel brake. And that was it.

My instructor, Traf Doherty, introduced himself, and moments later I was harnessed inside the front seat of the 2-33. The canopy was pulled shut. A distant Super Cub waggled its rudder and the ground began rumbling beneath my seat. The rumbling soon stopped and we were flying, even though the tow plane was still bounding along the grass and across runway 1. Then it too was airborne.

Being towed into the sky seems a simple endeavor. Physically it is, but psychologically it can be most distressing. There's an immediate sense of insecurity, at least for the power pilot. You're quite aware that you have no engine and that you're at the mercy of a 3/4-inch rope. Compounding this apprehension is the concern for the tow pilot up ahead. You keep thinking if you foul up the tow for some stupid reason, you're going to drag the poor bloke under. Sweat comes easily in the greenhouse cockpit. However, tow planes are tough to bring down; they're sturdy and most forgiving. Besides, tow pilots have a sure secret for survival; they can always cut the rope.

Gliders can also be launched by car tow and by a highspeed winch, but the aero tow is the most popular and practical method and is employed at the Schweizer school exclusively.

The normal tow position is directly behind and at the same level as the tow plane when climbing. During level flight, the sailplane can remain level with or below the slipstream of the tow plane. Training maneuvers during a tow call for flying a box pattern around the tow plane's slipstream, a relatively easy task.

Before takeoff the lineman signals the tow pilot at what altitude you wish to release. The pilot then adjusts

Schweizer is placing a lot of its dreams on the 1-35, the newest addition to the family lineage. This bareskinned 1-35 prototype (foreground) was photographed between performance tests. Pictured behind it is the Schweizer 1-34, the firm's current top-of-the-line (\$9,000) single-place sailplane.



his pattern so he reaches that altitude at a point upwind and within gliding distance of the airport. When the time comes to release, the glider pilot simply grabs the red knob and gives a tug and "spronnggg!" The 200-footlong yellow tow line shoots out from beneath the sailplane and the tow plane dives left for safety. You're on your own.

Much has been said of that sudden rush of silence once the tow plane leaves the scene. Schweizer must use very quiet Cubs, because I never heard the tow plane in my 20 flights. From the moment you're airborne, all you hear is the whoosh of the wind and the rudder cables' groan, but that's it. And it's really quite nice.

Traf demonstrated some stalls, steep turns and slips, all of which were easy to copy. The stalls were extremely gentle and came at about 32 mph, or 10 mph below minimum sink and 20 mph below best lift-over-drag (L/D) speed. Heavy rudder was required in most of the maneuvers, and in a slip you push right to the floor.

Throughout the flight we were descending at about 250 fpm. When we got to 1,500 feet agl, we started home, switched on the radio for the first time and listened for those nasty old airliners. We were over the airport's boundary lake at 1,000 feet agl, the altitude prescribed for pattern entry. The lake is runway 24A's "initial point," a sailplaner's term for the fixed place where you always enter a pattern. Upon entering downwind you nudge the nose to build up speed to 60 mph. You maintain that speed until you're on the grass.

Traf had explained that you "use the dive brakes just like you'd use a throttle on a 172 or any power plane. If you're too high, you chop it; if you're too low, shove it in." He also advised that being high on final was preferable to being low. I was high on short final, about 500 feet agl, so I pulled full back on the brakes. The plane felt like an elevator going down, very fast. Instantly our rate of sink increased by about 500 fpm, but only a slight adjustment in attitude was needed to keep up 60 mph.

You don't flare a glider and then stall it on down. Rather, you skim it on the ground with judicious brake work. Clumsily, I retracted all the brakes about 20 feet off the ground, fully expecting the plane to continue settling. It didn't. With ground effect at work, the cleaned-up bird might have sailed to Pennsylvania before reaching the dirt. So on came the brakes again, and we were down. The aircraft stopped, I would guess, in less than 150 feet.

The flight had began at 3,000 feet agl and had lasted 17 minutes. We went through five more flights in quick succession, all of them beginning at lower altitudes, with the longest flight lasting less than 14 minutes. Before flight number seven, Traf got out and up I went alone. There was little change in the lightened aircraft's performance. The main difference was that there was no one to talk to.

By the time the second solo came around, a quartering crosswind was blowing, and I was very much the sailplane pro as I rammed the left rudder right to the floor, held a touch of aileron and slipped the bird on down.

The most satisfying moment came on solo number four; I was deemed ready for the 1-26. This was an open invitation to soar.

Whereas the 2-33 was a little dumpy, little lumpy trainer with struts, the 1-26 is a sleek low-winger that seems a stranger to the ground. You ride in a 2-33; you wear a 1-26. You slide into it and lean back just so. The wings of this \$6,000 bird seem to extend from your shoulders. Tighten the harness, lock the canopy and then shut your eyes. You're in an F-111.

Up we went for a 2,500-foot tow. "Spronnggg" went the rope release and down went the Cub, the hapless victim of a deadly burst from my imaginary twin .50s (this fighter jock business can really get to you). I went hunting for some thermals. What with nine flights already under my belt I was hungry to soar, but no such

Specifications for Schweizer Sailplanes

	2-33 1	1-26 1	1-35
Standard price	\$7,750	\$5,995	n/a
Seats	2	1	1
Wingspan (ft/in)	51/0	40/0	49/2
Length (ft/in)	25/9	26/6.5	19/2
Wing area (sq ft)	219.5	160	103.8
Empty weight (lb)	600	445	400
Max. gross weight (lb)	1,040	700	930
Performance			
Airplane tow (max. mph)	98	114	n/a
Auto/winch tow (max. mph)	69	63	n/a
Dive brakes open	98	114	n/a
(max. mph)			
Stall speed (mph)	31/32 2	28	n/a
Placard speed (mph)	98	114	n/a
Best L/D (glide) speed	45/52 2	45	n/a
(mph)			
Min. sink speed (mph)	38/42 2	38	n/a
Lowest rate of sink (fps)	2.6/3.1 2	2.6	n/a
Glide ratio	23:1	23:1	n/a

¹ Kit available: 2-33AK at \$6,295 (without instruments); 1-26C at \$4,090– \$5,295 (fabric covered; without instruments). Construction time between 300 and 600 hours.

² Solo/dual.

Schweizer manufactures trailers for all its sailplanes. Open trailer for the 2-33 and 1-26 costs \$900. Covered trailer for standard-class (15 meter) sailplanes costs \$2,030.

luck. Thirteen minutes later I was on the ground. During those ten flights I'd felt the thermals tease with nibblelike bumps, but not once did I get the variometer needle out of the minus and into the plus. The instructors explained that the thermals were lousy that day, but not to worry. I had ten flights left.

The next flying day's weather was little improved over the first. It was overcast gray, and what thermals there were were being dissipated by a steady breeze. After five more solos lasting a measly 44 minutes, Erwin Jones, the school manager, seemed a bit perturbed. He commandeered a 2-33 and off we went in search of those elusive thermals. We released at 3,000 feet agl and steered directly for a darkened area in the dull-looking sky. Nothing happened for a while, and then came a long, sure bump. A thermal. Jones banked the trainer 45 degrees and flew a 1,080-degree turn. Sure enough the variometer needle said we were rising at 150 fpm. After going down so long the change was amazing. It didn't feel that much different, but Lord knows it was satisfying. At last I was soaring, or at least Mr. Jones was.

Jones explained that since clouds are the product of convection, the thermals that produce them can generally be found upwind. The darker area, in this case, meant the best-defined cloud. You identify a usable thermal by flying straight and level. Should the variometer show a rise of 150 fpm or more for five seconds, roll into a steep bank and begin circling at the sailplane's minimum sink speed.

We never climbed more than 150 fpm, a fact that disappointed Jones, since a 500-fpm thermal is rather run-of-the-mill. But I couldn't have cared less. We were going up without any engine, without any tow plane. I was impressed and delighted. He turned the controls over to me, and I lost the thermal almost immediately.

The hunt went on. We found a couple more puffs,

but they amounted to nothing. Disappointed, Jones ordered us home. When we landed we had been flying for 29 minutes, 11 minutes longer than the best of my flights.

Four soarless flights later it was Jones and me again in a 2-33, but this time he was wearing his FAA examiner's cap. We did some tow maneuvers, some stalls and a slip. Nine minutes after takeoff, Jones signed my log. I was a private glider pilot.

The whole course was rather anticlimactic. I had arrived at Schweizer daydreaming about silent flight across river valleys and verdant hills. I had thought of slipping on down in my brother's backyard, 100 miles to the north. Heck, Niagara Falls was a mere 130 miles away; I figured I could make that and back in a day.

Alas, it was not to be. I never ventured past Harris Hill, five miles away. I couldn't go any farther because I couldn't stay up. Just release and land, again and again. For me, my new rating was quite properly named. I was a glider pilot and no more. Others might have soared, not me.

Apparently this matter of gliding, not soaring, is a very sore point at Schweizer. The instructors all seemed irritated by the lackluster thermals, and with good reason. Too many "transition" pilots, I learned, have shared my experience.

A power pilot can get his glider rating in two days' time, but if the weather's not right, he may never soar before the rating is won. That is bad for the sport. Soaring is what Schweizer's selling because gliding alone is not enough. Gliding is kind of peaceful and kind of pleasant, but frankly it's a bore. To soar, to spiral, to climb in silence, that's the thing.

Were he so able, Paul Schweizer would have air rise always. Paul and his brothers, Bill and Ernie, are totally committed to soaring. Paul calls it the "Sport of the Air," and justly compares it with sailing and snow-skiing. He shakes his head morosely when he hears that the thermals are not cooperating. That kind of misbehaving by nature can cost the sport friends. "You just don't know what it's all about until you actually soar," he explained.

The brothers Schweizer are soaring's foremost promoters in the United States, but they've got a long way to go before sailplanes replace ski boats or badminton in popularity. Their firm is far and away the largest sailplane manufacturer in the country, and yet in its 35-year history, it has built only 1,600 of the motorless planes. There are maybe 2,500 sailplanes and some 13,500 licensed glider pilots in America.

Hundreds of those pilots have won their licenses at Schweizer's school, through either the \$195 "transition" course for power pilots or the \$495, two-week-long course for fledglings. In fact some of the instructors and company employees began their lessons at the school at 14, the minimum age for glider students.

Schweizer has established 31 dealerships around the country, plus one in Australia and one in Japan, but even so, sailplaning could hardly be characterized as a commonplace sport.

The truth of the matter is that sailplanes are not even Schweizer's main product. Sixty percent of its business is building the Grumman American AgCat, a \$40,000 cropduster. Last year AgCats accounted for \$3 million worth of Schweizer sales. Other subcontract work amounted to \$1.1 million, and sales of 100 sailplanes earned the company \$780,000. Schweizer also owns and builds the Teal, a two-place amphibian.

While sailplanes are not Schweizer's big money-maker, they are the company's first love. And now that the sports boom is upon us, the company thinks soaring will grow steadily in popularity. Forecasts this year call for sales of 110 sailplanes worth \$1 million. Next year could be even better.

Schweizer is pinning a lot of its hopes on the 1-35, a super-looking sailplane it plans to introduce next year. An all metal T-tail with retractable gear, this is a high-performance dream machine, probably in the \$12,000-or-under range. Even parked on the crabgrass, the 1-35 suggests the grace, the speed and the lift of an eagle, soaring. Surely this plane will fly forever. When it does, maybe I'll be in it.

And on that day when the weather is right, my brother will look up from his backyard chores. He'll hear a strange whoosh and see tapered wings flash. Niagara Falls is just up the pike.

On that day I will have soared.

The step up from the trainer to the 1-26 is a satisfying one for the student. Suddenly you're alone, in command of a storybook sailplane.

