

AIR MAIL, July, 1964, Gordon L. Freedman) and with no small hole in the backside of the line. Another reason for changing the vent to a higher position in this case is that after the tanks are filled a gallon or two of fuel will run or siphon out of the vent and onto the ground, or hangar floor, if the airplane doesn't happen to be sitting exactly level. FAA? And while they're reviewing these ABC's they should also establish that the only time that spare hole in the backside of a pressure vent line is permissible is when the airplane has a metal fuel tank and a fuel pump. But this is getting off the Volaire's track.

The Scales

The Volaire's weight situation is 2250 gross, 1280 empty, and 970 useful, or 4/44/14 (souls/petrol/bags). This, of course, contemplates a standard airplane and, of course, none are. The one we flew at Free-way showed an empty weight of 1396, including unusable oil and 3 lbs. unusable fuel. How did it get from 1280 empty to 1396? We assume 1) wheel pants and deluxe spinner (\$214 extra), 2) engine group (\$135 extra) which is 35 amp generator, ignition shielding, vacuum pad and adapter ring, recording tach, cylinder head temperature sensor, 3) Superhomer, including antennas, speaker, microphone, headphone jack, microphone

jack, and magneto and generator noise suppressors (they also offer factory installation on BEI 990 \$713, King KX 150 \$1108, and Narco Mark XII & VOA-6, \$1197), 4) accessory package "B" (\$974) which includes artificial horizon, DG, vacuum pump, vacuum pump gauge, electric T&B, Rate of Climb, 8-day clock, OAT gauge, stall warner, dome light, panel lights, nav lights, rotating beacon, landing light, tiedown rings. In short, that extra cookie for breakfast costs both in pounds and inflated currency. The one we flew, then, comes out 4/29/0. The baggage compartment, a not overly large area behind the rear seats, is placarded for 120 lbs. and would carry a couple of suitcases.

All in all, we'd say that the Volaire has no more than a normal complement of rough edges for a first-off-the-line airplane. If it might seem otherwise it is because everything it goes up against has been in production a long time or in high volume. The main thing is that its base price of \$8500 is in the base-price ring of the two-place airplanes. If they can just hold that price they've got a roomy enough little four-place which can go a long way towards more economical flying. And one which pilots will enjoy flying, once they get it to where it isn't so easy to overshoot with.



*A great place
to soar.*

Sugarbush

By

ROBERT N. BUCK

ABOUT sixteen air miles south west of Montpelier, nestled among Vermont's majestic mountains, is Mad River Valley. It is pastoral with a clear river that wanders through fields and twists around white farm houses. The mountains rise dramatically and ruggedly on each side. It reminds you of Switzerland and Austria. It's beautiful.

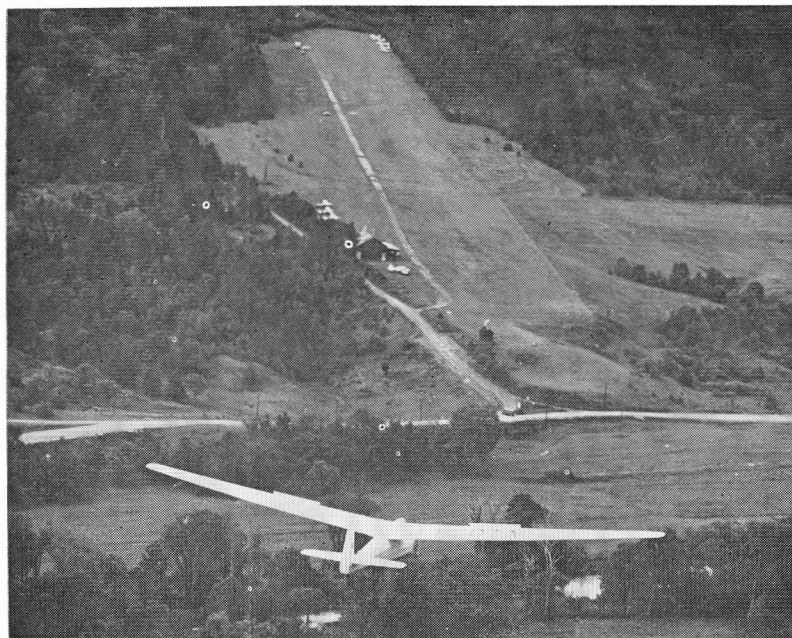
In this valley is Sugarbush, best known for its wonderful skiing but there are other things too; a tough, interesting golf course, fishing, hunting and, most of all, soaring—and what soaring.

Near Waitsfield, in the valley, is Esty Air Park. A fancy sounding name for a simple grass strip 3,000 feet long. There's a big hill at the west end so you land toward the hill and take off away from it with little regard for the wind. The east end of the strip heads toward the valley so any trouble on take off gives a good choice of pastures for landing. The field is fairly smooth and things as big as DC-3's have landed there. It's a good place to go for summer or winter fun.

John Macone of the Alpen Inn operates the airport and has two Super Cub tow planes and a Schweizer 2-22 and 1-26. You can get checked out there.

During October John, along with Jim Herman of the Sugarbush Inn, puts on a soaring encampment which is sort of a clambake for soaring people, a time when they come from far dragging their sailplanes behind automobiles on trailers to fly and to "Howdy folks." At night, in the Inns, the flying talk is about stratosphere thick and good.

Last year Ben Greene came from Greensboro, North Carolina towing his Standard Austria in its plush cocoon-like trailer, the monotony of the fourteen hour drive being broken by music from the stereo recorder he has in his automobile. A large contingent came from Canada with strong representation from the Montreal Glider Council. Ev Keeler, DC-8 Captain of Seaboard and Western, came with his 1-23, Bernie Carris hauled the Schweizer's dreamy 2-32 from Elmira behind his car. All in all



A German built, Canadian flown SCHLEICHER KA-8, spoilers extended, approaches at Sugarbush's Esty Air Park. All landings here are made in this direction. Photo by Alessandro Macone, Inc., Concord, Mass.

about forty sailplanes showed up. There were English Skylarks, German KA-6s, the Austria, a Sisu, lots of Schweizers, an HP-10 and others. With them came pilots, wives and busy children.

There were many friendly greetings, jests and kidding and then, always, a look up into the sky and some remark about the wave because the wave was the excuse for coming, the big yen to fly the wave, perhaps even get a Diamond altitude gain which is over 16,000 feet. The wave in soaring has a

magic sound, it has mystery, grandeur, promise and challenge, it's the big time.

What is it? Well, let's list the three basic ways of soaring: 1. *Ridge Soaring: the kindergarten part where you fly along a ridge supported by the wind flowing up its slope. Although it's elementary, experienced sailplane pilots will use it happily at times;* 2. *Thermal Soaring: circling and climbing in thermals which is really the basic, most done kind;* 3. *Wave Soaring: this has to do with mountains*

again, but it's not ridge or slope soaring, it's something different.

Look at a fast moving stream or river. See where a rock is below the surface and then see how waves form downstream of the submerged rock. The waves stand in the same spot and the water flows down and then up to a crest, then down again and repeats this up and down motion until it gradually subsides further downstream. The waves are in up and down motion all the time, but stand in one place in the stream.

With the right condition the same standing wave forms on the down wind side of mountains. Fast moving air is the stream, a mountain is the submerged rock. Pilots with skill and some luck get in the up-rising side of the wave and go up.

The biggest wave flown is the one off the Sierras. Near Mojave, California, Paul Bickle set the world's glider altitude record of 46,267 feet! He could have taken his Schweizer 1-23 higher, but cold and the lack of cabin pressure stopped him. He had oxygen, of course, but you need pressure too above that level.

They Aren't Simple

There are many complicated things about how waves form and what they are like—that's part of the discussion back at the Inns each night—and there's a require-

ment to be careful in waves because of turbulence and, sometimes, clouds. It's obvious, too, that a wave has down as well as up moving air. Glider pilots like to stay out of that because, in the down part, altitude can be lost in huge gulps. With understanding, this down can be used to advantage if, for any reason, you want to get down quickly.

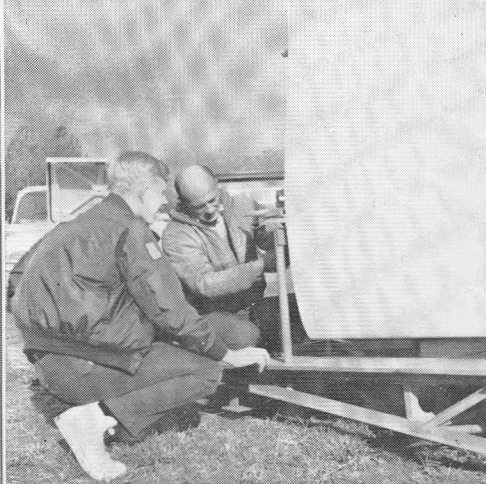
Under the hump of the wave where air, moving in different directions and at different velocities, bangs against itself it is rough.

Knowing something about waves is worth while for powerplane pilots. It doesn't take much imagination to visualize what it would feel like to cut across a wave at high speed hitting, in sequence, down air, rough rolling air under the hump, and finally up air. It can be a wild ride, especially going through about four successive waves.

Anytime there is a strong flow of air, especially after a cold front passage, across a sharp mountain range, pilots can be suspicious of wave conditions.

Lenticular Cloud

One way to tell a wave is by the lenticular cloud which often forms announcing the wave. The cloud is created by the rising air on the front of the wave condensing any moisture of the right mixture. The cloud dissipates on the down side



Rob Buck, left, gets a little dual from Bernie Carris on taking a 2-32 off the trailer.

as the air is heated adiabatically. The cloud appears in front and disappears in back in a constant process. It's like a cap cloud and the best way to tell it is by noting that it doesn't drift along like a regular cloud, but just sits in one place. It lives and dies on the wave and stays where the wave stays.

That's what we woke up to on a nippy fall Vermont morning. I looked out the bedroom window to see the Inn's parking area full of gliders on trailers and two men looking up toward the west. Our room faced east and we couldn't see what they saw. They looked a moment and then hurried away. It was a cinch they wanted to get going. Rob joined me at the window just as a man walked by.

"Any wave?" Rob called out the window.

AIR FACTS

"What?" the man answered quizically.

"Is there a wave, do you see a wave?" Rob pressed.

"I'm not quite sure what you're talking about," the man said. Obviously he was one of the few non-glider guests and unfamiliar with soaring and probably wondering if Rob was a little daft.

We dressed quickly, ran down the hall and out the door into the crisp, clear morning. We raced to a vantage point and looked into the sky and there, majestically, mysteriously, alone—white against blue—sat the lenticular.

"The Wave!" Rob said in a subdued tone.

We stood without speaking, a little in awe, looking up at the cloud and suddenly, as we looked, I knew how men feel who climb mountains, how they feel when they stand in a valley and look up at the mountain they will climb and I finally understood why they say, "Because it is there."

Activity

At the airport, activity was feverish as people took wings and fuselages, rudders and stabilizers off trailers and assembled them into sleek sailplanes.

The Super Cubs were already busy pulling gliders into the sky, dumping them off and coming back for another. The preparations were businesslike, important, technical.

JULY, 1965

Warm clothing, parachutes, oxygen masks and system checks, tow hook check, canopy carefully fastened and checked, a raised hand to signal, "Okay, I'm ready," and the tow plane would move, the rope lose its slack and become taut, and then the glider would move. In a moment they were airborne, the Cub straining a bit, the glider sleekly and quietly sliding along behind it, eager to climb.

And then it was my turn. I was alone in the Schweizer 2-32, the big, beautiful, multiplace. I was alone simply because if I got lucky and went to 10,000 feet I might get my Gold altitude and to get any badge you must be alone.

I was set with warm clothes, oxygen ready if needed, the canopy closed and my hand raised. Various people looked on with considerable envy, I'm sure, at anyone lucky enough to fly the 2-32.

Airborne

The Super Cub moved ahead, the rope took up its slack and we were on the way. During a circling climb I could feel the bump of thermals and see the tow plane surge up ahead of me as he entered a thermal before I did. In a moment I'd get the surge and lift too.

The countryside was beautiful with fall colors and wonderful visibility and a pure blue sky. It was cloudless and even the lenticular had disappeared, probably from



Ben Greene beside his Standard Austria—one of soaring's best pilots and best gliders.

small moisture change in the air flow. But the wave must still be there. Others that had taken off hadn't returned and I couldn't see them anywhere down low. They must be up in the high sky.

I cut loose at 3,000 feet not far from the airport and wrapped up in a thermal. Nothing much happened and I got little lift from it. I tossed that one aside and flew a heading looking for something better. I found another, but it was small and chopped up, I lost altitude instead of gaining. Now I got a slightly panicky feeling, mostly

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generated by ego. How awful, I thought, to land back at the airport fifteen minutes after release in such a beautiful performing sailplane. I damned a few things and especially the altimeter which was down to 2,000 feet.

Ridge Flying

To get time and think things over I went to a small ridge just east of the field and flew up and down it, staying up by simple ridge flying. I gained a little on some up-flow and finally decided to use the altitude to get at a higher ridge a little further east.

My radio was on the common frequency sailplanes with radio were using.

"Bob," Ben Greene's voice came to me, "I'm over on your left and I just got a good thermal."

That was the direction I was headed and if a pro like Ben Greene was working that way I was satisfied an amateur like myself couldn't go wrong doing the same thing.

As I approached the ridge I suddenly got a big boost from a husky thermal that the bigger ridge had kicked off. I wrapped around and started up. "I've got one too," I called to Ben.

"Yes, I see you and it looks like a better one than mine."

Then I spotted his beautiful white Standard Austria about half a mile away working a different

thermal. We both spiraled up. My thermal was stronger and I climbed above him. I was still spiraling when I saw Ben head over toward the big mountains to the west. He probably decided he had enough altitude to get in the wave and started toward it. Being less experienced and a little more chicken I held on to my thermal to get all I could before I started spooking around looking for things.

Turbulence

At 3,800 feet the air became rough, almost moderate turbulence. I hung into the turn trying not to let it ruin my circle in the thermal. Then I decided I had enough altitude to experiment so I straightened up and headed west-north-west. Very quickly the turbulence increased and in my bouncing around the rate of climb shot up to about 900 feet per minute. I was really going up. Then, suddenly, the turbulence stopped. One instant it was rough and the next it was smooth, not just smooth, but super smooth. "Damn!" I thought, "I've lost the lift."

My ignorance was appalling. I looked at the rate of climb and it was glued to 500 feet per minute up! Almost with a shock I got the news. "The Wave!" I said aloud to myself half in astonishment and half in a bomburst of joy.

And then I sat there in fascination at a totally new flying experi-

ence. The steadiness of the flight, the smoothness of the air, the church-like quietness, the vast mountains receding below, the sweep of the country and again and again the smoothness of the air. The glider simply hung there, its design stability allowed to demonstrate itself fully. I had it trimmed so I didn't have to touch a control. If I wanted to move the sailplane I could do it with great precision; a push ever so gently on the stick would increase the airspeed one mile an hour, a gentle pull decreased it exactly one mile an hour or whatever I wanted. It was a condition test pilots dream about.

Tacking

I started to plan so that I wouldn't drift out of the wave. It, obviously was north and south. The wind, being fairly light aloft, perhaps thirty knots, wasn't enough just to head into, so I tacked up the wave with drift set in. I spotted a bend in the river ahead with a white farm house enfolded in its turn. That was my northern target and I flew toward it. Over it I turned and the only noise around made itself heard—it was a small squeek in the right rudder pedal.


Southbound I saw the Alpen Inn and I aimed at that. I was well above the haze level below which gliders normally fly. At 7,000 feet the rate of climb had reduced to two hundred feet per minute, but it

continued in the same steady way.

The magic of the flight was broken by the awful thought that I had a time limit. Because of other business I had to be back by 1:30. I had used a lot of time losing altitude after the tow and gaining it back down on the ridge and in the thermals. The hour now was almost 1:30 and time was running out. I needed an altimeter reading of about 12,000 feet to get the gold C altitude — precisely 9,843 feet above my low point. It was simple arithmetic that 5,000 feet would take twenty-five minutes. On top of that I knew this wave wasn't a strong one and perhaps it didn't even have the capability I needed.

Greener Pastures?

I was north of the area where the wave is generally flown and I began to mull over the possibility that it might be stronger near the mountains a little further south. The idea



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was fortified by the fact I was all alone, none of the other gliders were around, they were probably in a better place. I was just crossing 8,000 feet as I headed southwest toward the big hills about ten miles away.

I spooked through the blue sky in the suspended state of tranquility watching the course, glancing at the rate of climb and, in mind, trying to grasp the tremendous experience I was having. Then, in an exciting instant, I saw the others, eight of them, hanging in the sky. They looked like a school of fish in a stream, all headed one way, all motionless. It was fantastic. There were two Skylarks, a blue one and a yellow one, there were 1-23's and 1-26's and above us all, perhaps a thousand feet, was the dazzling white Standard Austria alone in the deep blue sky.

It was an amazing sight. It gave a feeling of being part of the sky, of being out in the sky, yet safe, that I have never had any other time in the air. The big clear bubble canopy put my head into the sky so I felt in it, the other gliders gave a sense of depth that fortified the feeling. We just sat there, all of us, headed one way, suspended, motionless. It must be something like being in orbit. It was complete detachment.

Now and then one would break away and fly up and down the wave trying to find more lift, trying to

learn more about the wave. I turned myself, passed a 1-23, and did a little exploring. The lift wasn't any better. I was at 8,500 feet and the rate of climb still was about 200 feet per minute, but the clock showed 1:45—fifteen minutes late already.

The awful decision was made to return. I changed heading a little and let the wind drift me back through the others until I was behind them. Then I pulled on the big spoiler-brake and shoved the nose down to one hundred indicated air speed. The precious altitude rattled off more than 2,000 feet per minute and the earth came back into my conscious, the beautiful trees, the winding river, the farm houses and the airport were again a part of life.

At 3,000 feet I shut the spoiler-brake and just because I felt like it I did a loop. It felt so good I did another. Then it was all business as I pulled on the spoiler-brake, entered the pattern and landed.

The first to greet me was Bernie Carris. "I didn't make it coach," I told him with some embarrassment, "I only got to eighty five hundred feet."

I could see he was disappointed and so was I—very disappointed—but after all getting badges is only a part of soaring, the real reason for soaring is to soar and besides, my silent friend up there, we will meet again another day!

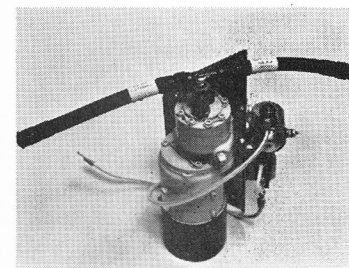
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