AIRWORTHY

Newsletter of the Black Forest Soaring Society - Winter 2002

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Weaklink	official mascot	doesn't use mouse, kills them

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FROM THE EDITOR

It has been a while since Black Forest Soaring Society has put out a newsletter so the new board of directors decided it was time to resurrect it . For now Airworthy will be a quarterly newsletter in Adobe Acrobat format. The newsletters will also be posted on our web site at: : http://www.serkowski.com/bfss

I've enjoyed working on this first issue of the revival of Airworthy. Thanks to people who gave advice and to folks who contributed to this issue, especially Dave Leonard who agreed to write about his great summer flight, Jim Forman who allowed Airworthy to print his article, and Hans Arnold who reflected on his flying career during an enjoyable interview.

Planned for the spring issue in late March is an article by one of our members about a recent contest he attended. There also may be another article from the Black Forest distant past. Bruce Carter (who is said to have done a great job as weatherman for the 1-26 Nationals this summer) has agreed to do a column on weather.

Issues are planned to come out around the changing of the season and deadlines for articles and news for the Club News section are due by the first of that month. Your input, including ideas for future articles, are encouraged.

Bill Howe Airworthy Editor

FROM THE PRESIDENT

The end of the year has always been a time for reflection.

The Black Forest Soaring Society has a very rich past indeed. This storied past is illustrated quite well in this winter 2002 issue of Airworthy in Jim Forman's heart-thumping wave soaring story "The 47 Minute Diamond". A piece of our present and future is illustrated as well with Dave Leonard's personal account of the first 1000k cross country soaring flight originating from Colorado.

The BFSS membership currently finds itself looking toward the future and the future looks bright once again! Our Pawnee has a new engine, our clubhouse has a new paint job, our membership is steadily increasing, and we have added an L-23 to the fleet. Perhaps the most telling of all is we have enough money in the bank to purchase a panel mount radio for the L-23, a radio and transponder for the Pawnee, pay the bills and still have enough cash reserve for a rainy day fund!

As with most Soaring Clubs many important issues still remain to be tackled in earnest by the membership. We can all thank our past Board of Directors and the many BFSS members whose energy and in many cases generous cash donations helped to keep us afloat during the lean times so we could begin to grow and become healthy once again.

Yes, the future looks exciting for this Soaring Club. I eagerly look forward to working with all my soaring friends in 2003 to continue to foster a Black Forest Soaring Society environment that is Healthy, Safe and a whole lot of Fun!

Happy New Year and Fly Safely,

Rick Culbertson BFSS President

MEMBER SPOTLIGHT

Hans Arnold Interview by Bill Howe

photo: Hans on one of his favorite days when the snow is melting and it's muddy.

Hans was born in Germany sometime in the twentieth century. His first flying interest was in model airplanes when he was about 13. **"I joined a club and there were some big guys that built a real glider. When I was 15 or so I joined the big guys in helping to build that glider. I had to go to the workshop once every Saturday afternoon and then it was once during the week in the evening. I had to put in 200 hours in that workshop before I was allowed to take lessons."** Hans still has the log book where he logged the work hours.

The two seater glider they built was called, in English, Double Raven. The wing was plywood and pine. The front fuselage was steel tubing and the back fuselage and tail were also wood and plywood . It had fixed gear, dual peddles, but only one stick! The instructor had to reach over the student's shoulder if he wanted to take control of the stick. The rear instructor's seat was built high to facilitate this maneuver.

Hans soloed in this ship at an airport south of Frankfurt in the fall of 1959. **"The small airport still exists. It's right where the Rolladen Schneider factory is. That's where I had my first lesson...and that's where I soloed in 1959... I did three solo flights, of course all winch, and then that was the end of my soaring for I think 27 years."** First came winter when there is no flying due to the weather, and then came the military and the university. There was little time or money for flying.

While at the university Hans met a student on a year abroad study program and we all know the result of Hans meeting Marilyn. She convinced him to move to the United

States after he graduated in 1969. At first he was not too happy here. His jobs, including construction, plumbing, electrical maintenance, and snow shoveling, required more exertion than he was accustomed to. **"This was hard for me. I'd never really done such work. All I knew was to push a pencil."** But he went back to school to the University of Illinois and it has been uphill since. After graduating with a masters in mathematics he worked as a computer programmer at a bank for about 5 years. After that Hans and Marilyn moved to Colorado where Hans worked for computer reservation companies, which he still does on a contract basis when he isn't busy being retired.

In 1987 Hans had not totally forgotten about flying. **"I knew about the operation in Colorado Springs at the Black Forest Soaring Society but I deemed it too far away. Today I wouldn't think that way any more."** Then he noticed some building going on at Kelly Air Park. **"I snooped into it and asked people around and one of the first ones I ran into was Alice Palmer and she told me what was going on there."** So Hans returned to flying. He soloed in 1988 and went on to get his private license. He then went on to get a commercial license and in August of 2,000 he got certified as a flight instructor.

The first ship Hans owned was a Schweizer 1-34 with fixed gear. **"The reason why I bought it is I made a fantastic wave flight in it...On that day, it was a Saturday in April, I did line work and the wave showed up. It was so great - you could see it by the cloud formation. Then I asked if somebody would take over for me with the line work...It was only a 2 or 3 hour flight...Oh gosh, I got right into the wave. It went up so fast the vario of course pegged out. It went up so fast you didn't need a vario, you could see the altimeter go around. In no time I was at 18,000 feet. I requested entrance to the wave window and it was granted to me...I got a gold altitude for it. I could have made diamond if I'd climbed for 1,000 feet more but there was a problem."** Hans had reached 27,800 feet. According to weather information the wind was 90 knots at that altitude. **"I had to really push against it not to be pushed out of the wave window, and so I really lost a lot. I mean if you push so hard against the wind...you put your nose quite a bit down and you don't climb that much any more...I was right over the top of Pike's Peak, which was a little hill below me. I was twice as high as Pike's Peak.**

Hans now flies a Libelle. He's had it for at least 10 years. He hopes to lighten up somewhat on his teaching duties this summer and do more cross country. This past summer Hans's best flights included an out and return to Limon from Kelly, and a trip out of Canyon City that took him to Westcliffe and Mosca Pass.

Hans's scariest flying moment was coming into to Kelly once a little low. **"I realized on final that I was a bit low and it was a very very heavy wind- it was in the Libelle- so I thought 'what to do? How do I make it?'. There were still wires at the North end of the airport and I had to clear them. What I did**

was I retracted the gear on final approach and went very very low, like 20 feet above the ground...I pulled the flap negative and that gave me a lot of speed and reduced the drag...I pulled up and I made it over the wires and extended the gear and even made it to the runway. So I really dove below the strong wind. It was an idea that came to me at the moment and I made it.“ Since then the wires have been buried, Hans observed. **“Maybe somebody saw what I did.”**

Hans would love to have the club arrange more flying camps. He remembers fondly the days when the club flew together in Creede, Westcliffe, Limon and Taos. **“For me it was the highlight of the soaring season, especially Creede. I would like to see one definitely again in Creede - and in Taos. Westcliffe is good for wave. Westcliffe is perhaps the nearest place where we could have a nice soaring camp. Spectacular soaring is in Taos, and also Creede. Creede is as much of a social event with dinners during the evening hours.”** Hans remembers his first club trip to Creede years ago towing his 1-34. His alternator went out and he found himself without lights. He eventually saw the light of a home and stopped for help. The man who lived there had a truck similar to Hans's and Hans talked him into loaning his alternator. **“I must be a pretty good salesman”**. He arrived at Creede at 2 am. He had a great time flying with club members, got his alternator rebuilt, and stopped on the way home to return the borrowed alternator.

Hans has lived in the US now for some 34 years, and expects to continue to make this his home. He has helped the club out a lot over the years wearing many hats including, president, flight instructor, motor fixer, and friendly face on the line. The Black Forest Soaring Society is lucky that Hans moved to this part of the world.

photos (1958): The ship young Hans built. He's at controls in photo at right.

CLUB NEWS

Boldfaced Quotes (from an unreliable source)

"Why is everyone heading for that cu, the beaver pond is this way?"
Rick Culbertson
This quote is no doubt the result of the unique lift source Rick found this year. You may remember Rick's email: "... I heard and felt a thump kind of like a bird hitting my ship or the rudder hitting the stop hard. Just then I noticed a large cloud of white smoke billowing up from the ground and in this field I could see 6 or 7 cars... I noticed that a big white cloud of smoke is rising and drifting my way so I did what anybody who finds himself 1,800 agl and sinking at 3 kts would do, I went over to the nearest thermal source and hooked into a 2 knotter and gained another 1000 ft. - go figure. As it turns out the friendly gent who owns the property...and a few of his buddies were blowing up a Beaver Dam!" Rick learned these details from Clay, who landed out there that day.

"Will work for rides."
Sean Bradbury
Sean reportedly walked onto the field one day wearing a sign with above quote. The result is the Teenagers Interested in Flying program (TIF). In exchange for helping out on the field (and word is he is a great help) Sean gets some financial help from the club toward his goal of soloing in a glider. In appreciation of Sean's efforts BFSS gave him a copy of Joy of Soaring at our annual Christmas Party. The club also welcomes new junior members Taylor Ellington and Mark Penninga.

"Who says we're too far from the mountains?"
Anonymous
BFSS members did well on the Online Soaring contest this year. (Four thousand pilots logged 20,000 flights covering 6 million kilometers worldwide.) Dave Leonard took first place among US entrants, BFSS friend Tom Serkowski was third, Clay Thomas was fourth, and Rick Culbertson was thirteenth. In the 1-26 nationals held in Colorado this summer Oliver Schmelzer took second and Jim Walker took thirteenth.

"Comrade, have you seen my wing?"
Robert Chur
Robert reportedly said this while assembling his Russia glider for the first time on November 30. Finally Bill, the other Russia owner in the club, replied "Da!". It turns out Bill was holding one end. Shows just how small and light those Russias are. We welcome Robert's AC4c to our international fleet.

RECENT PAST

BFSS 1,000 K Story by Dave Leonard

Over the summer, Soaring magazine wrote that everyone should write about their 1000 km attempts. Of course, the author also stated that a “real” pilot wouldn’t settle for a zigzag route, but would only attempt the flight as an FAI triangle. Maybe I’ll be excused, for a little while at least, since no one had even proved that a 1000 km zigzag was possible here in Colorado. Anyway, here it is, how I was finally able to “Go Long” from Kelly Air Park.

My first real 1000 km attempt was in 1990, during my first summer of flying the ASW-20. I tried a long zigzag from Taos north into the heart of Colorado. Like most of my early tries, I aborted about 150 miles out due to slow progress or overdevelopment and came home with a nice easy 500 km flight.

After 10 years, I finally broke the 500-mile mark on a flight from Canon City in my LS-6 in 2000, reaching two of the three declared 1000 km turnpoints. At that point, I had probably tried the flight a dozen times, but I had never landed out, which could indicate that I wasn’t pushing hard enough to actually finish such a long flight. On the other hand, the aborted flights sometimes required epic struggles to get home.

I was slowly learning what to look for in the weather to enable a really long flight. I still couldn’t predict it ahead of time, but thought I could recognize a favorable pattern once it was established. Discussions with Bruce Carter helped me to identify a seasonal mid-June window where conditions are most likely to be favorable. I was limited to weekend flying, but resolved to be ready at every opportunity during that window.

Saturday, June 16, 2001, looked like a pretty decent day around Kelly. If anything, it looked a little too dry and stable. I was a little late getting everything in order for the flight and ended up launching around 11:45 even though the lift had started about an hour earlier. I declared turns at the Santa Fe ski area, Salida, and Blanca peak. Such a late start would require a very high average speed to be back by dark, and conditions looked mostly blue. I made good time and pressed all the way to the New Mexico border before hitting the good cu. The run from there to the Santa Fe ski area turnpoint and back to the end of the clouds was easy, with classic high-based cu with strong lift and no overdevelopment. Too bad the first 140 miles wasn’t like that.

The second turn was near Salida. The Sangre’s were working, but not as well as I wanted them to. By the time I reached the turn I was only a few hundred feet above the crest. A poorly planned turnpoint location required dropping off the back side of the ridge, where I couldn’t climb to get back on the sunny upwind side for the third leg back down to Blanca. After struggling for way too long, I gave up and tried to fly back home to Kelly. That turned out to be fairly easy with the tailwind. About 530 miles flown, landing about 7:00 pm. My best effort yet, but the weather wasn’t quite right, at

least not with my late start.

The evening weather showed more of the same for Sunday, so I set the alarm to get up early again, just in case it was The Day. The morning weather check showed the same pattern, with just a tad more moisture, particularly to the south. I decided to get out to the field a little earlier, to try to correct one of yesterday's mistakes. I had rested well overnight, but could still feel the effects of 7+ hrs in the cockpit the day before.

I decided to declare a flight I had laid out the winter before: a zigzag north to some arbitrary GPS coordinates in the hills SE of Laramie, Greenhorn Peak, Estes Park and back to Kelly. That course had the advantage of keeping me almost within reasonable gliding range of one of the Front Range soaring operations throughout the flight. It was also a course that I had flown every mile of numerous times before. I just needed strong consistent conditions and no overdevelopment. Also no cirrus, no slow weak start over the plains, no early end to the lift, and no mistakes flying the course. Other than that it looked like a piece of cake.

I actually got to the south end of the field to launch about the same time as the day before. Bruce Carter was there working with one of his students, and was about ready for another tow. He smiled and said, "This just might be your day". He insisted I launch immediately, pushing his glider out of the way and getting me out on the runway. I didn't protest too much. That little courtesy probably made the difference. Thanks, Bruce.

I got off tow a little too low. Old habit. The first climb quit at 2000 ft. Fortunately, there was a better one nearby to 13,500' and I was on my way. The first leg was fast with strong lift after reaching the cu halfway to the mountains. Cloudbase was 'way too high to go to the top. Westerly winds were keeping the air very lively even between thermals. The only place it was smooth was in the tiny core of the thermals.

Hitting the first turn about 1:30 at 17,000', I was surprised when the glide computer switched to the next turnpoint. It read Greenhorn Valley Airport. That wasn't right. I thought I had declared Greenhorn Peak, 20 miles to the west. The route was supposed to stay over the high ground. The plains almost never work as well, and it is often very tricky to get back up over the high ground late in the afternoon. Such a rookie mistake. Oh well, there's always next year. I decided to press on and see what would happen. There was still no overdevelopment as far as I could see. It could still work.

Only a few stops were required over the next 150 miles to Pikes Peak, looking for only the very best lift. I was nearly halfway around a little before 3 pm. The sky out towards the turn was blue with two wispy cu along the course line. Conditions still looked great to the west., towards what I had originally planned as my second turn.

I decided to try the declared turn anyway, rationalizing that I could probably still get home, albeit slowly, with a good aborted flight if those scraggly cu didn't work. It was a long quiet glide to the first cloud where I found bumps, but nothing good enough to

stop for. The second cloud, only a few miles from the turn, had the boomer I needed. I enjoyed an 8 kt climb from 11,000' back up to 17,500.' The goal looked almost reachable again.

I flew to the turnpoint and retraced my path under those two clouds, finding nothing this time. But I didn't really need it to make the bald spot in the hills NW of Canon City. The lift there was right where I hoped it would be and I was quickly back up to altitude heading for the last turn at Estes Park.

I started flying a bit more conservatively on the leg north, trying to stay high. There was still 4 hours of daylight left with only 200 miles yet to go. From 17,900' at the end of the day, the last 70-80 miles should be free. Still no overdevelopment, but the west winds seemed to be picking up, and there was cirrus to the distant north.

Around Niwot ridge, I got down to around the level of the Continental Divide just to the west of me. Conditions were getting tricky with downwash off the peaks to the west and cu to the east looking pretty sickly and wind torn. I struggled to around Twin Sisters just east of Long's Peak before contacting another nice 7 kt climb to 17,900'. There were still a couple cu back around Gold Hill, so all I had to do was run in to the turn and back to the cu for one last climb and a final glide home. Five minutes later I made the turn, looked south, and my cu were gone. No clouds looking even remotely convective as far south as I could see. On the west side of the divide, the sky still looked perfect. But crossing looked unlikely, even from 17,000' at Estes Park.

The glide computer said I could almost make it in one glide back to Kelly. But that would require flying the transponder-equipped crow's route back. Lacking that crow's ability to squawk, I would have to go straight south and turn the corner around the Class B airspace down near Chatfield Reservoir. I had flown this route many times, but never starting at 6:00 pm in a dying sky.

The air between thermals became progressively smoother as I glided south. I found a few weak 1-2 kt thermals that drifted me rapidly east and got me only marginally closer to a glide home. I finally set off to the south from near Golden with almost enough to make it back home. The air was getting very smooth. Part way along this glide I had to decide whether to abort back to Boulder or risk heading towards Kelly and a likely outlanding. I couldn't raise anyone at Kelly to get the winds. Centennial ATIS reported light SE winds. I figured the west winds I was still flying in would not persist all the way home, so my tail wind was likely to dissipate and maybe turn into a headwind. I really needed another 1000 ft to make the glide home.

Finally, about 7:15 I bumped into a nice smooth 2-3 kt thermal right over the parking lot for my office at Lockheed Martin. The valley was completely in shadow, but the residual heat from the plant (managers must have still been at work) and the evening breezes were just enough. I clung to that thermal, working it for every foot of altitude I could get. I finally topped out at about 13,500,' which should be plenty, barring strong headwinds or late evening sink.

The 35 mile glide back to Kelly was glassy smooth. Not a ripple. The tailwind faded to nothing. My water ballast was long gone, sacrificed for more altitude back near Boulder. I burned off my excess altitude cruising the last few miles at 110 kts. The only celebration was a pass over the airport at 1000 ft and 110 kts to check the windsocks and traffic followed by a wide sweeping pattern slowly bleeding the speed off. I noticed a couple cars still in the parking lot and a few people walking out from the ops building. On final I could see they were coming to meet me at the taxiway in front of our apron. I greased the landing and rolled out dropping my wingtip gently in Bruce's hand. A perfect end to an incredible adventure.

I heard there was a second Colorado 1000 km flight from Owl Canyon this summer, although it was undeclared. I guess it's time to try it the hard way now, in a triangle.

(See flight log 3D image at: http://home.netcom.com/~leonardd/1000k.jpg)

Photo: Dave west southwest of Ft Collins, northbound.

DISTANT PAST

Jim Foreman used to fly out of the old Black Forest site until 1987 when the club moved and he sold “everything that flew...and decided that 50 years and nearly 8,000 hours was enough.” Read more about Jim’s flying experiences on his web site at: http://www.JimForeman.com

The 47-Minute Diamond

In soaring or gliding as it is called in many places, there are badges for achievement of certain levels of expertise. For many years there was only the A Badge for soloing a glider, the B Badge for a bit more training and the C Badge for those able to remain aloft for an hour.

As pilots become more proficient and the gliders more able to remain aloft longer, there was an even higher level in which a wreath was placed around the C badge and it became the Silver C. To acquire this coveted badge required more advanced levels of skill; including staying aloft for five hours, gaining a kilometer of altitude and flying to and landing at some point 50 kilometers away.

As in all sports, they keep raising the bar and soaring was no exception. The next level above the Silver C became the Gold Badge. Finally, for the most skilled pilots who could fly higher and further, they added three diamonds which could be placed on the Gold Badge. Each required its own level of performance. One was for flying to a designated landing point 300 kilometers away, another for flying the unheard of distance of 500 kilometers but the most difficult of all was the altitude diamond. This required that a pilot gain five kilometers or 16,404 feet of altitude in a glider. Until a WW-II fighter pilot discovered a phenomenon called the Standing Lee Wave caused by winds blowing over a mountain, about the only way to achieve this award was to fly up through a building thunderstorm. To gain just one diamond usually required vast skills, great personal fortitude, years of trying and in most cases, a lot of luck. When I started flying gliders in 1969, only a scant handful of people in the world held all three diamonds.

Even though I'd been flying for more than 25 years and had several hundred hours of flying time, I had never even sat in a glider much less flown one until I came across one at a local airport. I took four or five flights with their instructor and was sent off by myself to practice the maneuvers I would have to do in order to become a licensed glider pilot. All my flights consisted of being towed aloft, gliding around for a bit and landing. Finally the day came for me to ride with the FAA inspector who asked me a few questions out of a book, rode two flights with me and added "Glider" to

my license. There just had to be more to it than that.

I found a dog-eared copy of Soaring Magazine at the airport and read of a place with the magical name of Black Forest Gliderport in Colorado. I just had to go there if for no other reason than to see what real glider pilots looked like.

I arrived one crisp January day and announced that I had come to fly gliders. To my surprise, they said that they were having a wave camp and all people and equipment was dedicated to that. However, if I could stay around for a while, they would try to work me in. That sounded like a great idea and they checked me into the bunk room which I shared with half a dozen people who were there for the camp. I was in hog heaven; rubbing shoulders with real glider pilots at a place where they had hangars full of gliders. In fact, the only airplanes on the field were the tow planes.

The radio was patched into the PA system and I kept hearing voices muffled by oxygen masks announcing things like, "going through twenty-four at five knots." It finally dawned on me that they were climbing through 24,000 feet and going up at around 500 feet per minute. Unbelievable!

After the gliders were all put away and the office closed, they had a meeting in the club house where they announced the achievements for the day and assigned ships to pilots for the next day. There had been three gold and two diamond altitudes flown that day. Just before we left for town to have a pizza party in celebration, a guy who looked about the age of my kids told me to come by his office the next morning. His name was Dick Sayer and he was the chief instructor.

I figured that he would be impressed with my flying hours and all the different aircraft I had flown but his remark was, "This is it?" as he looked at my dozen or so flights in a glider. Then he pointed out a small single place sailplane tied down on the ramp and told me to get in it, belt myself in and close the canopy. "Get used to how it looks from the inside and work all the controls. There's a pilot's handbook in the pocket on the side. Study it and everything you see in the ship. Come see me this afternoon and be able to answer any question I might ask." When I went by, all he said was to be at the meeting. After the meeting, he told me to see him the next morning for an oxygen checkout, find insulated clothing to fit me and that we would do an orientation flight if the wave was running.

The Schweizer 2-32 was the biggest glider I'd ever seen, seemed more like getting into a military airplane that a glider. It also flew like one, nothing like the trainer that I was accustomed to flying. We were first off on tow and shortly after the towplane turned toward Pikes Peak, the air began to get rougher and holding position on tow more difficult. Dick

pattered away, pointing out landmarks and telling me the minimum altitudes at certain places in order to get back. I heard him call on the radio that we were finding light rotor and he could see a lennie forming so it looked like a good day.

Light Rotor! I'd hate to think what heavy rotor might be, and what's a lennie. I learned later that he was talking about a thin, lens shaped cloud called a lenticular. They usually mark the location of wave action. Suddenly, as we were about level with the top of Pikes Peak, the air turned smooth and the variometer swung upward showing 600 feet a minute climb. "OK, this is the wave, pull the release," Dick told me. "First thing after establishing your position is to notch the barograph. Lower the nose, open the dive brakes and dive off at least 200 feet of altitude so the barograph trace will indicate that you were off tow and establish a low point for the flight."

After about an hour in the wave, during which he pointed out how to identify landmarks and hold my position over the ground, we had climbed to about 25,000 feet where the lift dropped to less than 200 feet per minute. It was the most amazing flight I'd ever had. We turned back toward the gliderport and Dick pointed out a finger of trees sticking out of the forest as if beckoning us home. "It points at the north end of the runway," he told me. "From this altitude you can see into Kansas and it would be easy to fly right past the field."

As we wasted altitude on the way back, he had me do a few stalls and then a six turn spin. "You fly pretty well for such a low time pilot." Then he told me that the 2-32 was fully aerobatic and asked if I would like to do a loop. "Entry speed is 140 and keep pulling to tighten the loop because all you have working for you is inertia." He demonstrated the first one and then let me do a couple; they were fun. At the evening meeting I was assigned a ship and I was first on the takeoff list. Some time later I realized that they were using me as the guinea pig to see if the wave was working before they sent the regular camp members up.

I was sitting on the takeoff runway early the next morning, dressed in the down from a hundred geese, oxygen mask on my face and the regulator clacking away each time I took a breath. An instrument called a barograph was ticking on its mount behind my head. It would record my flight on a piece of smoked aluminum foil.

Dick helped me close the canopy, connected the towrope, wished me a good flight and lifted the wing for takeoff. Slack came out of the towrope, I waggled the rudder and was rolling down the runway. As we turned toward the mountain, I could see a strange wall of dust rising from the ground near the Air Force Academy. It didn't look like the usual cloud of dust blown up by

the wind but more like a dirty, brown wall. Then we slammed into unbelievable rotor. I could see the controls on the towplane going lock to lock as he fought the churning air and I thrashed about trying to stay in position behind him. One second my head would hit the top of the canopy and the next I would be slammed into the seat. As I was trying to pull the belts tighter, the emergency oxygen bottle that had been stuffed in between my left leg and the side of the ship came flying out and I caught it like a shortstop as it flailed around inside the cockpit.

Then, as suddenly as the rotor had begun, the towplane shot upward and the air went creamy smooth. I pulled back on the stick to follow the towplane and shot right past him. I felt the nose of the glider being pulled downward so I grabbed for the release knob and pulled. There was no rewarding sound of the rope releasing and I found myself looking straight down the rope at the towplane pointed toward the ground. Then I realized that in my excitement, I was tugging on the spoiler handle instead of the release knob. The rope shot away with a loud twang.

"Now that was interesting," came the calm voice of Dave Johnson, the tow pilot. "You are in the wave and don't forget to notch the barograph."

"Release at ten-eight in strong wave two miles east of the interstate. The rotor is pretty severe, let's not put anyone else up here unless they know what they are doing." he said.

I heard the gliderport answered him. "Is he doing OK?"

I glanced at the variometer and found it pegged at the top of the 1000 feet per minute scale. The altimeter was rotating toward 13,000 feet. Notch the barograph! I had forgotten to do that! Just then I was slammed up and then down like a dog shaking a rabbit. I had drifted back into that awful rotor. I had to get back forward into the wave. I pushed the nose down to pick up speed. If the wind was blowing at 60 and I was flying at 60, that meant I was standing still over the ground. I had to move forward so I pushed the nose down some more.

The variometer swung to full down and the altimeter began to spin backward as I fought the pounding wave. The airspeed crept to 80 mph, then 85 but the beating continued. If I wasn't out of the rotor by the time I reached 10,500 feet, I would turn tail and race for the gliderport. Then as suddenly as it had happened before, I was in wave again and I felt the upward acceleration. I raised the nose to slow down but certainly wasn't going to be pushed back into the rotor. The variometer was pegged up and the altimeter spinning back toward 12,000 feet.

I heard the gliderport call a ship number a couple times but didn't realize

that they were calling me until they said, "Jim, how are you doing?"

I pressed the microphone button and gave them a status report. A few seconds later the tow pilot called to report that I was in wave and climbing when he last saw me. Obviously my radio wasn't working, at least not the transmitter. During the two trips into the rotor, the microphone cord had become unplugged.

Going through 18,000 feet still in pegged out lift, I spotted something tumbling through the air toward me. I turned to avoid it and watched a green plastic garbage can as it spun by. It must have been sucked up from someplace in the Air Force Academy.

At 24,000 the variometer was still pegged and frost was forming on the inside of the canopy. I was looking down at snow capped Pikes Peak and beneath me, streaks of dust being blown across the ground.

Finally at 28,000 feet the variometer dropped off the peg but I was still climbing at 800 feet per minute. Then I started trying to remember my release point and tried to calculate how high they said I had to climb for a diamond altitude. Was it 14,400? No, that was the height of Pikes Peak. Dick had said something about 31,000 feet if I stated even with the top of the mountain, or was it 32,000, or was that how high the wave window was open.

I scratched the frost off the instruments with a gloved finger and found I still had 600 feet a minute climb and the altimeter stood at 32,000 feet. Frost covered everything except for about a six inch spot where the air vent was blowing frigid air on the inside of the canopy. This was bound to be high enough so I swung the nose to the east and opened the dive brakes.

At 14,000 feet the trees of Black Forest were visible through the clear spot and as I swung the nose back and forth looking for the telltale finger that pointed to the gliderport. I couldn't find it! Then I made a turn all the way around and could see that I had flown past the field. I shoved the nose down and started making slow progress against the wind back toward it. At 10,000 feet I was over the field and the frost had begun to evaporate so I removed the oxygen mask to get a breath of fresh air. "The radio crackled, "Winds at Black Forest are west at 25 gusting 35. Evidently Dick had spotted me because I heard him add, "Don't get downwind of the field, Jim, or you likely won't make it back."

I picked out my touchdown point, flew a short pattern and landed. Dick's voice came over the radio, "Keep the canopy shut, dive brakes open and stick forward. We will be right out to get you." Dirt, trash and weeds blew by as the Jeep pulled in front of me and a rope was attached. One person on each wingtip walked the ship to the tiedowns where it was secured before I opened

the canopy.

I removed the ticking barograph from its mount and walked into the office. No one asked how my flight went or how high I had gotten. I was crushed. They seemed to be more concerned as to how long the winds would keep them shut down. I could stand it no longer so I blurted out, "I got to 32,000."

Everyone turned to look at me in disbelief. Dick said, "You weren't gone long enough. I figured you fell out and came back." Then he wiped the sweat off the glass of the barograph to see the trace but it was still clouded on the inside, so he clipped the seal. He rotated the smoked drum, "You have a trace and it looks pretty high."

No one, especially me, breathed as he carefully removed the foil and taped it to a piece of plywood used to hold it during the calibration process. He carefully checked various points on the trace with calipers and then verified them against his master chart. Finally he announced, "Low Point, ten six, high point, thirty-one eight, altitude gain, twenty-one two. Flight time, 47 minutes. He certainly has his diamond!"

"Does he have a notch?" someone asked.

"Does he ever," replied Dick. "About two thousand feet of notch. I also calibrated climb rates of over 3000 feet per minute in places."

I had an altitude diamond but nothing to put it on except a Rotary Club pin. I still hadn't even made a one-hour solo flight to earn a C Badge. I did go on to earn my other two diamonds but certainly neither was as easy or fast.

I had stumbled into one of those very rare situations in which a wave forms off the escarpment of the front range, rips 80 mph winds through the Air Force Academy then boils up in a vertical column of air with speeds as high as 40 mph. This wave condition seldom lasts for more than an hour at most. I just happened to be in the right place at the right time. I worked at Black Forest for about seven years after I retired but saw this condition only one time. While living just north of the gliderport, I did fly the wave more than a hundred times.

With a total flight time from takeoff to landing of 47 minute, it was the fastest diamond ever recorded. It was also the 200th earned at Black Forest where more than 500 were awarded before it closed due to urban encroachment and political pressure in 1985. No wonder it was known as the Diamond Mine.