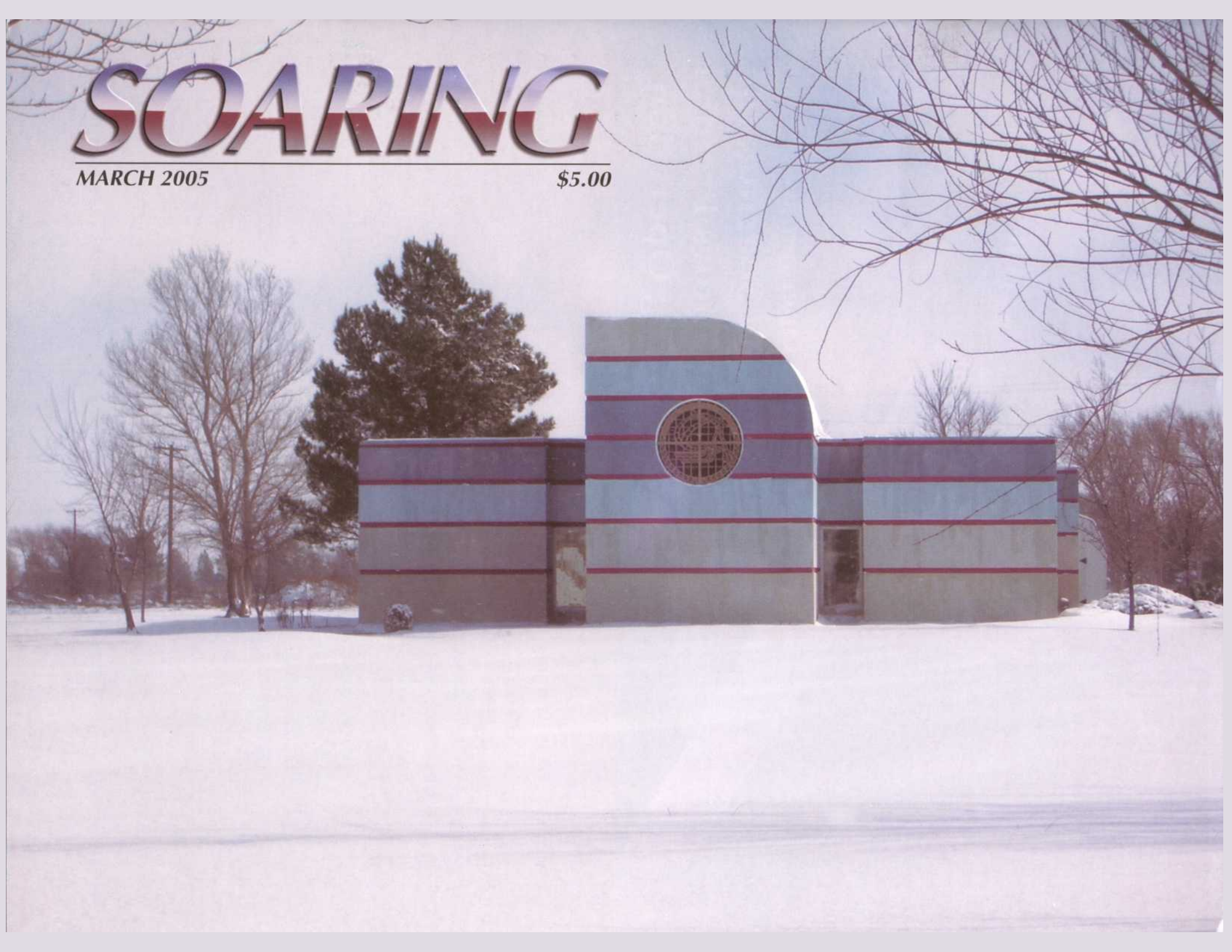


SOARING

MARCH 2005

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CONNECT THE DOTS

BY LEO BENETTI-LONGHINI

In 2003 Gary Osoba and I decided that a pure glider version of the Silent 2 motorglider would be ideal for attempting distance flights in the FAI's D-U ultralight glider class. This is the lightest class of four available FAI sanctioned glider record classes, the other three being the 15m (D-15), World Class (D-W), and Open Class (D-O). We were able to persuade the Alisport factory in Italy to build a pure sailplane prototype of the Silent 2 in time for us to attempt some record-breaking flights at the World Record Encampment (WRE) in Zapata, Texas last summer. But getting the glider to Texas took a lot of work! We had to retrieve the glider from a warehouse in Maryland, haul it back to Tennessee, squeeze in the condition inspection, perform the weight and balance, have a certificate of airworthiness issued, modify another trailer, fly off the test hours, and hit the road to Texas - all in less than a week! None of this would have been possible without the generous help of Paul Huskey, Jeni Pannell, Tim Donovan, Jim Chapman, Brian Robinson, Corey Gillard, Dick Butler, Dr. Uwe Peter Solies, Ernest Finney, and Steven Sipe. Their acts highlight the great goodness in the aviation community and are gestures I cherish.

We got the glider to Texas on July 3rd, and the next day Gary and I took turns flying locally (aerotows courtesy of Russell Brown and Quest Air's Dragonfly). Gary flew early to explore the performance of the glider while the intent of my mid-afternoon southward flight along the Rio Grande was mainly to become familiar with the unique desert terrain (this was also my first experience with the afternoon arrival of the sea-breeze and I barely made it home). It was satisfying to note that, even though my "loaded" Silent 2 motorglider is almost 64 kg (140 pounds) heavier, the D-U sailplane had the same very familiar feel, but with more agility and a wonderful ability to climb in weak lift. By Monday the weather looked good for a distance attempt and Gary launched mid-morning heading north towards Laredo with me in hot pursuit in his tow vehicle. Weather conditions initially cooperated providing both a favorable tailwind and some low-level cloud streeting. Accordingly, Gary made excellent speed until the lift became "soft" and the sky turned blue around Carizzo Springs. This led to an off-field landing on an isolated desert road followed by an amusing "find the needle in the haystack" retrieve. The weather did not cooperate for distance

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attempts over the next few days and the time was spent repairing a damaged wheel fairing and on another practice flight to the south (this time the sea breeze caught me and I had to land on a road).

By Thursday evening the wind had picked up and the tension cables bracing the radio tower outside the lodge were humming. Some of last year's participants mentioned that the wires had hummed on the nights before distance records set at the 2003 WRE. Needless to say, this caused some real anticipation and excitement about what the next day, July 9th, might bring. It would also be my last day in Zapata regardless of whether we flew or not. We all woke up early that Friday to find a steady wind from the south, and rows of low clouds, perhaps 100m (300 ft) above ground, already starting to form.



Zapata vendor.

This phenomenon of lift organizing relatively early in the day is common in southeast Texas in mid-summer. Gary's research indicated that Zapata held great promise for record flights due to the possibility of early starts and consistent tailwinds, albeit with the drawbacks of initial low flight altitudes and challenging terrain. All signs and forecasts indicated that the day was a go.

After a quick breakfast at El Paraiso, I headed to the airport to hook up the trailer and carefully go over everything prepared the previous day. The glider's relatively Spartan instrument



Fourth of July fireworks stand.

panel was fitted with an IGC approved Colibri GPS logger (powered by a small battery and solar panel), Illec electronic



Airport sign.

variometer (also running off the solar panel), altimeter, and airspeed indicator. In addition to this, we had temporarily installed a back-up Cambridge GPS logger powered by a separate battery. I carried two handheld radios, one for aviation frequencies and a second high-frequency unit for communication with David Glover in the chase vehicle (in turn fitted with a base-station unit and magnetic-mount external antenna). Other supplies and gear included seven bottles

of water, four granola bars, charts, cell phone, Swiss Army knife, small flashlight, lighter, hp balm, and parachute. With the exception of the bottles and charts, all gear was either in my clothing pockets or physically attached. Lastly, the left side of the instrument pod had a large adhesive label with pertinent emergency contact information written in red font.



Downtown Zapata, Texas.

WRE director David Glover and I discussed the options for a declared distance, electing to choose a distance-to-goal that exceeded the current record by a sensible percentage (instead of the FAI required 10 km) and to keep the path as northerly as possible. We

settled on Winters Airport, which resulted in a distance of 559 km (347 miles) and about 10% more than Gary's 1998 record of 508.1 km (315.7 miles). The course also had only a very slight westerly component, which would allow David to drive north almost the entire way on Highway 83 from Zapata, through Laredo, Uvalde, and on to Winters.

At approximately 10:45, with David already on the road, Russell towed me upwind with the open cockpit Dragonfly,



The US. and State of Texas flag gently blow in the warm afternoon breeze.

waving me at around 750 meters (2500 feet) above ground level (AGL). I immediately pushed the stick forward to put a "notch" in the barograph trace recording; continued south briefly, sniffed the general area, and then headed north to the start sector deciding that the only advantage was time left in the day, not start altitude. The first two hours of flight were quite consistent with fairly well defined cloud streets, with flight altitudes between 600 to 1100 meters (2000 to 3600 feet) AGL, and a slight quartering tailwind.

Since the prevailing wind was gradually pushing the glider west towards Laredo airspace, it made sense to fly down a street for several miles, identify a definite lift source in the adjacent cloud street, and then jump eastward. This went on until past Laredo. A low point of 460 m (1500 feet) occurred about one hour into the flight just south of Encinal and the saving thermal's source conveniently happened to be a private runway. This first hint of impatience had caused me to speed up and it almost cost the flight. Communication with David occurred every ten kilometers with a minimalist report of distance and hearing from Zapata. This allowed him to plot progress on a chart without the confusion of landmark descriptions.

The entire third hour of the flight was a delicate tiptoe through a band of low terrain stretching between Carizzo Springs to the west and Cotula to the east. Gary had also gone down in this area a few days earlier and I suspect that my slightly later departure may have been beneficial. Superimposing the "bucket" shape of the barograph trace onto the topographic map shows a direct correspondence with the Nueces river basin. Pushing speed in this area would have almost certainly resulted in a landout. Fortunately David's words and the low point over the Encinal ranch provided added incentive to take every thermal all the way to cloudbase. The next two hours took me from the northern edge of this wet zone, past Uvalde, and up into the hill country. After another reality-checking low approximately on the east-west line between Sabinal and Uvalde, the real test came when entering the hills further north. I found myself at the upper end of a shallow valley with insufficient altitude to safely proceed forward onto the plateau and the only decent place to land was a couple of miles back. This was the only time in the entire flight I actually turned back. The landing option was a small manicured lawn of a ranch house and appeared to be barely sufficient in length (but still preferable to the surrounding mesquite). The situation was dire and I had come too far to throw it all away. Fortunately a Crested Caracara graciously marked a thermal at about 200m (650 ft) AGL and I never had to discover who owned the only nice green lawn for miles around. Time wise, this near "game over" point marked the halfway divider of the entire flight. By now the position reports to David had already become destination-based (distance/heading to Winters) for accuracy, instead of departure-based (distance/heading from Zapata), and David's pace was matching well with the glider's.

Conditions on the plateau were initially delicate, but by the beginning of the sixth hour they had improved considerably. The flight path now also fell right on top of Highway-83 and I knew from David's feedback that we were neck-and-neck. At one point, about halfway between Uvalde and Junction, I just happened to glance down and noticed the telltale shape of a glider trailer heading north. A radio call to a surprised David asking if a red car was overtaking him confirmed that it was indeed him and not someone headed out of Uvalde. Now this was real "flight following!" For most of the plateau portion of the flight up until the day began to deteriorate, the barograph shows a textbook trend of rising heights, from an initial 1350m (4500 ft) above mean sea level (MSL) up to 2200m (7300 ft) MSL. The only exception to this was a lowpoint over the town

of Junction. It puts a rather embarrassing dip in the barograph and I can surmise that it was likely pilot error (my "cockpit recorder" seems to recall that the clouds just to the east over Highway-83 looked good and the pilot decided to drift to the west with the wind to some more questionable looking puffs instead). Also, the north and south branches of the Llano River meet at Junction (a fitting name no doubt) and continue eastward. This drainage valley may have contributed to softened conditions, but I'm probably looking for an excuse on this one. Who really knows though? The clouds to the east may well have been bogus. While circling over Junction I was able to watch David transition off Interstate 10 back onto Highway 83 and encouraged him to pull over to look up into the southwest sky. From this point forward David would lead slightly on the open road and I would lead slightly as he slowed through the small towns of Menard, Eden, Paint Rock, and Ballinger located between Junction and Winters.

Somewhere near Eden came the realization that success was within reach and I began to "count my chickens." Fortunately a little voice of sanity told me to wipe the grin off my face and concentrate because it's not over until it's over. It turned out that the grin could have stayed because the segment from Junction to Winters was as good as it got that day. Average lift over this leg was between 1.3 m/s (2.5 knots) & 2.0 m/s (4 knots) and the flying was generally between 1200m (4000 ft) & 1500m (5000 ft) AGL. Great flying, but relatively weak and low by Texas standards.

Once on a high final glide to Winters, David and I discussed the option of proceeding further to set a free distance record. We still had a couple of hours of daylight left and the quartering tailwind had picked up noticeably. We simultaneously confronted our charts and decided that, in light of the wind direction and the controlled airspace due north around Abilene, it would be best to turn northwest after reaching goal and shoot for Sweetwater. The town Winters came and went as I read the final seconds of the GPS display's countdown out loud over the radio. After hearing David's congratulations, I realized that David had been on the road and I had been in the air for over seven and a half hours (7 hours 17 minutes from declared start to goal). But there was no more time to think about it because reaching Sweetwater was going to take a lot of effort (the day was rapidly subsiding).

In spite of the temptation to cut directly northwest towards Sweetwater, the sky was turning completely blue to the west and it made sense to initially continue due north from Winters towards Abilene's controlled airspace to take advantage of some faint cloud streets. The end result was a sweeping left arc from Winters to Sweetwater almost bumping the controlled airspace. A half hour out of Winters marked the conclusion of the last good climb of the day (4000 ft AGL) and from then on it was an extended final glide with some minor circling and pull-ups. The arc gradually approached Interstate 20 and by

this time the tailwind direction was ideal. Running approximately east-west just south of the interstate are some low lying ridges. As I approached them I noticed a huge wind farm carpeted these hills. An attempt to count the number of three-bladed windmills immediately fizzled. There were hundreds of them and all seemed to be waving frantically at their fiberglass and carbon brethren passing by in the sky. Maybe I was a dehydrated and somewhat delusional Quixote-like glider pilot by this time, but it made for a fine welcome to Sweetwater. The last few miles were quite tense and the airport, located on the west side of town, looked way too far on the horizon for final glide. Would the good tailwind be sufficient? Would it be better to make a precautionary landing? I gave the glider a symbolic pat, whispered a prayer, and proceeded. The glide over town (spotted by David sitting at a traffic light) was right at my limits and the entire time I was playing mental hopscotch from one landing option to another. There were many choices and, always having one in reach, I pushed forward to the airport and made a left turn to final at 100m (300 ft), landing on the inactive north-south runway.

The reality of the flight immediately started to sink in. David arrived within minutes and Gary called from Oklahoma City with congratulations. Standing upright for the first time in over eight and a half hours gave me a good preview of what my knees might be like at eighty. I still didn't believe my feet were really touching the ground. The satisfaction and elation was indescribable and I'd do it all again in a heartbeat! After a quick photo shoot we packed up the glider and headed for Dave's home in Oklahoma City.

What else is there to say about the flight? The flight computer statistics for the declared task are 1.05 m/s (2.1 knots) average lift, 60% cruising and 40% circling, 79 km/h (42.6 knots) cross country speed, 54 thermals, 49.1 mean L/D, and 9.5 km (5.9 mile) average glide. For the entire flight they are 1.0 m/s avg. lift, 62% cruising and 38% circling, 62 thermals, 49.2 mean L/D, and 9.65 km (6.0 mile) average glide. The declared distance was 560.072 km (348 miles), free distance 627.62 km (390 miles), and the free 3-turnpoint distance 646.823 km (402 miles). All the documentation has been submitted to the FAI for two world records and three U.S. records in the D-U glider category. In addition to the records, the flight also provided me the immense satisfaction of a personal best and my diamond distance.

What factors made the flight possible? Thorough preparation, perseverance, excellent



The Gaither family drops by for a quick visit. Photo by David Glover.



N210DU instrument panel. Photo by Alisport Srl.



Pete Lehmann's license plate.

the folks mentioned earlier, the flight (and subsequent record application) couldn't have happened without Gary Osoba, David Glover, Russ Brown, Pete Lehmann, Andrew Holupka, Davis Straub, Dave Stevenson and Judy Ruprecht.

Gary and David returned south to Zapata on Sunday ready to attempt more distance flights and I genuinely hoped that Gary



A common lifeform in Texas...the rattlesnake.

crew support, and a good tailwind all helped. These overcame the problems of weak lift, low cloudbases, and poor landing options. Most important, were all the friends who helped me out. Credit is due to the super guys at Alisport for building such a great glider. In addition to

would be able to defend his records. It was not to be. Additional attempts later in the summer in Texas and Kansas also fell victim to soft conditions. Clearly, that Friday happened to be one of the only summer days where the weather was favorable over a large



Leo Benetti-Longhini right after landing. Photo by David Glover

enough area for a new D-U record; it simply happened on my day instead of Gary's. Given the right weather, it is apparent that the glider also has the potential to do much more (like break the 1000 kilometer barrier in the D-U class). In my opinion, my flight has merely raised the bar. The next few years should yield some exciting jumps in distances achieved. We'll just have to see what next year's weather brings.

About the author: Leo Benetti-Longhini is a mechanical engineer involved in wind-tunnel design and testing. He flies out of Tullahoma, Tennessee and is the U.S. representative for Alisport, manufacturer of the Silent series of sailplanes. Leo can be reached via the internet at leo@cafes.net