

The Merlin 133



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photos by Andreas Banghieri

NOTE: Seedwings Europe is not affiliated in any way with Bob Trampenau's Seedwings California.

When most of us hear the word Merlin we think of magic and the King Arthur legend. However, aviators should know the merlin as a small, fast fal-

con commonly known as a pigeon hawk (*Falco Columbarius*). This exquisite little bird has given its name to a famous fighter plane engine and even a previous hang glider. The Sky Sports Merlin introduced in 1977 evolved from the Kestrel and was superseded by the Sirocco.

But this new Merlin has a different lineage, and the most unique aspect of the modern Merlin is its size: 133 square feet. The glider is designed for the smaller pilot who wishes to fly with the top pilots. Let's learn more about this interesting wing.

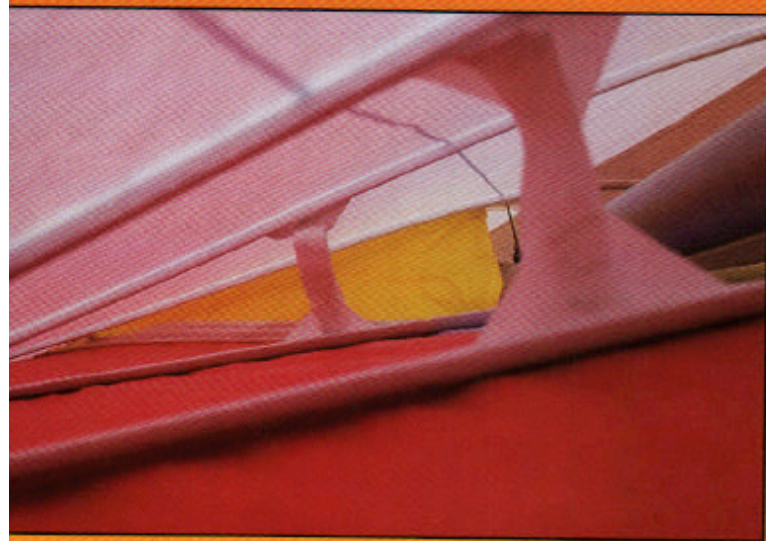
THE MERLIN'S MAKERS

The story of Seedwings Europe may be somewhat unfamiliar to most U.S. pilots, so here's a brief outline. Andreas Banghieri is an Austrian pilot who has been flying Sensors since 1981. In 1987 he traveled to Santa Barbara, California and entered into a contract with Bob Trampenau of Seedwings to distribute Sensors in Europe. In 1988 Andreas established a new company he dubbed Seedwings Europe as a manufacturer to produce Sensors in Austria.

To help the project along, sailmaker Bob Schutte moved to Austria to teach the art of



OPPOSITE: Landing the Merlin in the Zillertal of Austria. LEFT: The Merlin planform. BELOW LEFT: Inside the Merlin sail. The shear web is clearly visible to the rear as are the inboard upper/lower surface connecting straps. BELOW: The Merlin control bar top hardware.



sewing the fine Sensor sails to Manfred, Andreas's brother. Manfred is now the chief sailmaker along with three others in the Austrian factory. The Europe-U.S. connection lasted until July 1993 when the contract expired and wasn't renewed.

Last year Seedwings Europe obtained the services of Martin Jursa as a designer. Martin has just completed his doctorate in physics and was a lecturer in aerodynamics. Martin isn't just another gnome of academia, for he was on the Austrian hang gliding team before he resumed his schooling. Martin designed the Merlin using the latest in computer techniques.

Seedwings Europe had many requests for a small glider with performance equal to the standard-size gliders given a similar wing loading. Martin set to work comparing commonly used airfoils on the computer, and calculating performance factors for the current top gliders. This was his measuring stick and his goal was to equal or surpass the latest crop of gliders. Voilà the Merlin.

THE MERLIN APPOINTMENTS

The Merlin is built for smaller pilots, so much that we say about it will be with the

lighter folks in mind. But anyone can appreciate its grace and beauty. The long curved wing has an aspect ratio of eight with a sporty 130° (depending on VG setting) nose angle. These two numbers define a wing intended for performance. Incidentally, this is the smallest curved-tip glider available, at least until the smallest Xtralite appears.

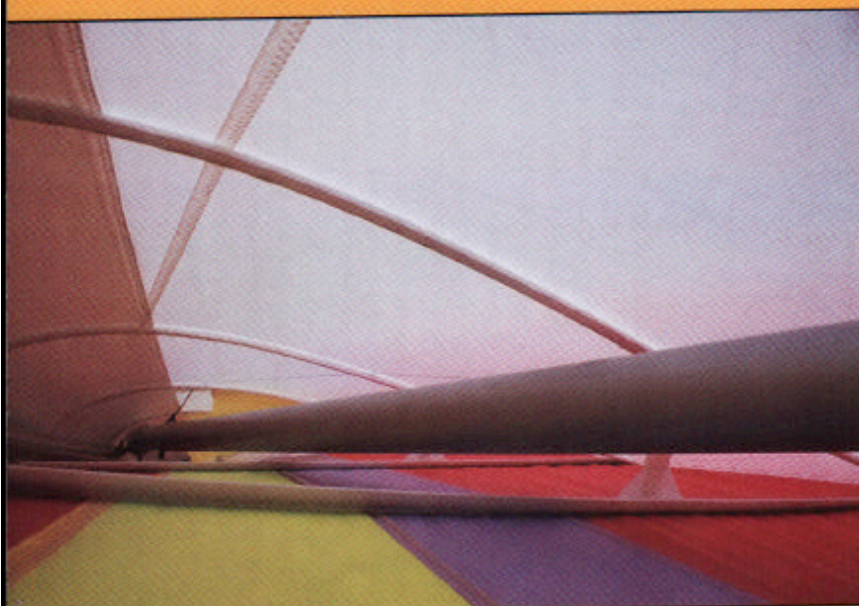
Because of its small size and 7075 Menzigen tubing, the glider only weighs 61.6 pounds. The control bar apex is placed back for an excellent static balance and ease of flare. Another virtue of the Merlin is its small control bar tailored for the more diminutive individual. The control bar, and



TOP: The Merlin lower surface showing no sag at the shear webs.



CENTER: Side view of the smooth Merlin airfoil.



BOTTOM: Inside the Merlin sail.

hardware in general, is of standard high-quality European design. Clean and functional control bar brackets and a quick pull-back crossbar attachment system are state-of-the-art. In fact, most gliders are now equipped with such systems — the only differences are minor hardware details and the force required to pull back the crossbar. In this respect the Merlin requires medium force (compared to all other gliders) to attach the crossbar hookup.

One other important attribute should be mentioned. The Merlin, like other Sensors, has one of the nicest VG systems. The pull, from full off to full on, only takes about a foot and a half and the tug is light. The reason for this is that the crossbar halves become nearly straight when the VG is tight, so there is a better mechanical advantage. This arrangement provides some relief from the miles of rope on some VG systems.

We'll discuss other construction details when we turn our attention to performance.

SETUP AND BREAKDOWN

A few notes on Merlin setup will familiarize those readers unaccustomed to setting up curved-tip gliders. The control bar sets up conventionally with a PIP pin in the corner as is common with European gliders. Once the wings are spread it's batten-stuffing time. In this case the onerous process is alleviated, since there are only eight curved and two lower battens per side.

After opening the wings with the crossbar haulback, it's time to insert the fiberglass tips. The easy way to do this is to insert the fiberglass rod inside the sail against the hole in the wing tip. Then, in one smooth motion, straighten it parallel to the leading edge while pushing toward the glider's nose to slip it in the hole. The process is easier done than said.

The hard part with the curved tip system used to be the final attachment at the sail, but no longer. The cams invented by Bob Bailey for the Moyes gliders solves the hookup problem and allows the entire tip to be enclosed in the sail. When we visited the Seedwings Europe factory in August the engineering for such tip cams was well underway.

The breakdown of the Merlin is conventional and the reverse of the setup. The ample pads and trick bag for the control bar ends are worthy of note, and a special quiver for organizing the battens, left and right, straight and curved, is provided. This satisfies the Teutonic need for order.

FLYING THE MERLIN

If you check the specifications chart you will see that the optimum weight range is 119 to 158 pounds. We neatly bracketed this range with three pilots: my wife Claire at 110 lbs., John Greynald at 135 lbs. and the author at 165 lbs. We flew the glider at Laragne, Aspres, St. Hilaire, Prapoutel and La Forclaz in the French Alps, and in the Zillertal in Austria. The conditions varied from a glass-off to strong thermal showing us cloud base.

The most impressive thing about the Merlin from my heavy-pilot point of view was the fact that I could slow the glider down as much as my normal-sized glider (155 sq. ft.) without stalling. Other pilots have experienced the same thing. This is an indication that the wing is working very efficiently with an effective array of airfoil shapes along its length.

Martin uses a variety of airfoils along the Merlin's span to manage this feat. The benefit is sure to be sink rate, for to achieve such a low speed on a small wing it must be flying at a high coefficient of lift. What this means in layman's terms is that you will climb well, especially in small, light thermals where a low minimum speed translates into a smaller diameter circle for a given bank angle.

Takeoff and landing with the Merlin are positively affected by its ability to slow down. For example, I didn't have to run any harder than with a larger glider on a very light-wind day to get airborne. I also landed in tall clover in high humidity with no wind. The result: an easy flare, one-step landing. Claire and John, with their lighter wing loadings, found the flare window of opportunity to be non-critical and broad. In fact, they both commented enthusiastically on the Merlin's ease of landing.

"These ribs, like those on the RamAir, keep the lower surface from blowing down at higher speeds and create a very nicely defined airfoil. As a result, top speed is enhanced... Pause to remember its slow-flight capability and you may find that the Merlin has the widest usable speed range of any flex wing."

In the air the Merlin is docile and predictable. There is little or no high-siding required. John and I found the handling quick and easy at our respective wing loadings. Claire, despite being below the recommended weight range, also describes the handling as "really nice." The final report card on handling is: good to very good.

MERLIN PERFORMANCE


We have saved the best Merlin trick for last. The outboard portion of the wing has mylar ribs or shear webs connecting the top and bottom surfaces at three stations. These ribs, like those on the RamAir, keep the lower surface from blowing down at higher speeds and create a very nicely defined airfoil. As a result, top speed is enhanced. The glider skims through the air at warp speed.

It is light, slick and fast. Pause to remember its slow-flight capability and you may find that the Merlin has the widest usable speed range of any flex wing.

What about climb rate? Claire found herself climbing to the top of the stack at Aspres. The handling and climbing ability should help you reach the upper gaggle levels equally well.

Good handling, glide and speed are also included in the Merlin's all-around package, so if you're looking for a little magic, try Seedwings Europe's fine-flying bird — the Merlin.

To get a Merlin or for more information, you can contact the factory at: Seedwings Europe, A-6300 Angath 78, AUSTRIA, Tel: 05332-71667, Fax: 05332-71668. They speak English as well as you or I and will be happy to answer your questions. The Seedwings Europe factory and personnel are producing many fine gliders and will make a lot of smaller pilots happy with this glider.

You can also contact their U.S. distributor: Flex, Aaron and Kerie Swebston, 2415 Forest Ridge Dr., Auburn, WA 98002 (206) 939-6248, fax (206) 939-8408. 

As we go to press we've learned that a larger Merlin 148 is now available. — Ed.

SPECIFICATIONS

Area	133 sq. ft.
Span	32.6 ft.
Aspect ratio	8
Nose angle	129°-132°
Double surface	82%
Glider weight	61.6 lbs.
Number of battens	20 + 2 tips
Optimum pilot weight	119-158 lbs.
Approximate price	\$4,500

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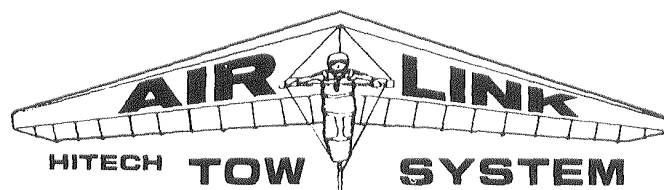
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