Sling AIRCRAFT

An exercise in 3D entrepreneurialism

BY BUDD DAVISSON

PHOTOGRAPHY BY JIM RAEDER


N916TS
Sling TS
ROTAX

THERE'S A REAL POSSIBILITY Sling Aircraft isn't aware of how it paints the personalities of its founders and assembly line personnel in the opening paragraph of its website. The dominant descriptions include words like "adventurer," "adrenaline junkie," "crazy rock-climbing adventures," "wild-eyed rough diamond," "boyish passion for adventure," and "heroic adventure." Adjectives like that increase expectations that those who were behind the delightful pair of Sling aircraft on display at EAA AirVenture Oshkosh 2024 are a cross between Indiana Jones and Tom Swift with a dash of Capt. Jack Sparrow tossed in.

As if cementing that image, the company is based in South Africa — Johannesburg, to be exact — which much of the world imagines as Adventure Central. It is Africa, you know. Elephants, jungles, and all of that.

What is hiding in that image is an entrepreneurial spirit that seems to permeate South Africa where there are an unusually large number of growing companies, some small, some not so small. Sling should be seen that way. It is the personification of entrepreneurial spirit in action and taking whatever risks are necessary to make its products the best they can be.

An outstanding example of not only testing their product but also proving their faith in it is seen in the company founders taking a preprototype aircraft of their own design around the world. It took 40 days, 28,000 miles, and many 22-hour legs, much of that over oceans while loaded 50 percent over gross design weight. Mike Blyth, founder of Sling, and James Pitman, chairman and co-CEO of Sling, put it all on the line to prove their aircraft even before they had a production line on which to build their aircraft.

If discovering Sling for the first time while racing past its display that featured both of its latest models at AirVenture 2024, it was easy to misidentify the aircraft as being sleek composite designs. However, neither are. Yes, they are sleek, but they are essentially all aluminum.

The concepts on which the company is based reflect what it saw as a need in the marketplace, which included satisfying the needs of its surroundings. Initially, both founders, Mike and James, were flying ultralights. In fact, Mike, the original founder of the company, started his aviation life flying and competing in weight-shift trike ultralights. This resulted in an intimate knowledge and distinct taste for control efficiency and the need for coordination. This led to a near obsession to design and build what he saw as the perfect light-sport aircraft (LSA). This didn't happen magically. A lot of detail work on the first design led to the LSA Sling now produces.

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The Sling LSA was designed around South Africa's LSA rules, which allow slightly heavier aircraft to be built than in the States. The final result is a low-wing trainer that has seen significant success in the highly active flight and training communities in Africa and around the globe. In South Africa it has, in many schools, largely replaced the traditional Cessna/Piper products because the Sling LSA is much less expensive, fulfills instructional needs, and features a much lower fuel burn.

Hands down the most impressive aspect of its LSA is how the company is using it as part of its construction quality control system. Because so many of its LSA are in constant use in training schools, some have accumulated as many as 9,000 hours. Beginning early in that environment, the Sling factory started bringing a number of those aircraft back to the factory on 2,000-hour schedules to do detailed inspections looking for any weak points. This has given their engineers a real-life understanding of how their concepts have fared. It also helps guide their new designs and their manufacturing processes. Regardless of how rigorous factory testing can be, real-world experience is basically impossible to duplicate on a computer. Tracking it on an as-used basis leaves no doubt.

All Sling aircraft use aircraft pull-rivet aluminum construction and the TSi and HW are powered by 160-hp turbocharged Rotax 916 iS engines.

PHOTOGRAPHY BY **CONNOR MADISON**


STEP


Sling TSi
N916TSi

Sling's TSI has its roots in the company's original low-wing LSA, hundreds of which are used in flight training worldwide.

In describing their aircraft, James first addressed the question of where the name "Sling" came from.

"Very early on, we knew we needed a name and were looking for something catchy," he said. "So, we ran a contest in a magazine offering a prize to whoever came up with a name we used. We received over 200 entries that included too many animals, birds, etc. So, one night I sat down and looked at all the names, and none of them caught my eye. I started thinking about weapons and settled on the slingshot as used by David in beating Goliath. I liked that image — our little airplane challenging the world — so we went with Sling."

As they considered future designs, James said they focused on the local area and how the aircraft would be used.

"From the beginning, when we got away from the ultralights and LSA and focused on bigger aircraft design, we found ourselves thinking about how we expected these aircraft to be used and designed accordingly," he said. "Johannesburg is located in a large agricultural part of South Africa where the farms can be quite big and cities far apart. The needs of the area dictated that we design for transportation, for duty on the farms, which meant lots of landings on rough runways, and is why we offer tail wheel options on our aircraft. The area also needed airplanes that are easy to support mechanically and are 100 percent reliable."

At the same time, they recognized the need for easy assembly.

"The kit market said the airplanes had to go together easily with no specialized tooling and zero aircraft assembly experience," James said. "For that reason, all our designs are designed around German lock-spindle pull rivets, so building can be done by a single individual with no need for help while riveting. Every component is CNC punched with holes to [the] final dimension. We continuously get comments from builders about how well the pieces all go together. We use 6061 aluminum, rather than 2024, because it allows us to safely make tighter, more precise bends. Even though we have an FAA 51-percent approved quick-build kit option on our designs, which knocks about 35 percent off the build time, [the] truth is, builders all comment on how easy the airplane goes together, so the quick-build option isn't necessary for some."

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James noted the instruction manuals and photo guides are a key piece of the quick assembly process.

"Part of the reason for the ease of assembly is that we've spent almost as much time designing our manuals as we do the airplanes," he said. "Yes, we have detailed instruction manuals, but the text is combined with a massive number of photos of every step of the assembly process. Words are important, but detailed photos communicate details words can't. That's the beauty of digital manuals. As we accumulate input from builders, we can immediately upgrade the instructions and get the improvements to every builder in the worldwide Sling universe in a matter of seconds. We invite prospective builders to download samples of the manuals directly from our website."

James also said the Sling team recognizes that while some builders may be assembling their airplanes in urban environments with easy access to hardware suppliers, others may be built in "chicken coups in the Australian outback or on secluded farms in the Amazon rainforest."

"For that reason, we go out of our way to include even the tiniest bit of hardware in the kits," he said. "This includes every nut and bolt, cotter pin, etc. Everything!

PHOTOGRAPHY BY JIM RAEDER

We also have a shopping list included of the tools, which are few, that will be needed to complete the assembly."

In terms of how they fly, Sling designed all of its airplanes to handle more like a sports car than a bus.

"Builders consistently comment on how much fun their aircraft are to fly," James said.

Initially, Sling focused on two-place aircraft and the Sling 4, a low-wing aircraft. However, at AirVenture 2024, the company brought over its newest designs.

"The Sling 4 TSi is a true four-place, low-wing airplane with a useful load of 950 pounds and a cruise speed of 158 knots true airspeed (KTAS) with the Rotax 916 iS and MT prop," James said. "It's burning a little over 8 gph but still has a sustained climb rate of 1,200. It is a truly useful cross-country airplane with a 1,150-mile range."

The company also had the Sling HW at Oshkosh, which is the team's first high-wing design.

"A four-place, it too is a serious cross-country airplane," James said. "Its useful load is 1,064 pounds, and it cruises at 145 KTAS with a 1,093-statute mile range. The Rotax 916 iS is turbocharged and delivers 160 hp through an MT hydraulic constant-speed prop. Its handling is just like all our other designs, very pleasant."

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Both two- and four-place Slings have a cabin that is 47 inches wide, which is 3 inches wider than a Cessna 182. The cabin is also purposely upholstered to give a luxurious feel, James said.

"We are very proud that the cabin is so professionally finished it's hard to believe it's a homebuilt airplane," he said.

James said the Sling team was "really pleased" with the reaction at AirVenture 2024.

"We increased our production, so we are putting out 12 completed airplanes and 10 kits a month," he said. "In fact, our production has developed to the point we're constantly on the lookout for more employees for the production line. Our website addresses that need. We've been in production for 14 years, and all indications are that we have a very bright future."

It's going to be interesting to see what crosses the pond from South Africa to Oshkosh this year. EAA

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The interiors of both the HW and TSi are specifically designed to be larger than the Cessna 182.

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