

Six Chuter Design Philosophy

The Six Chuter design philosophy was developed in 1991 by Dan Bailey, original owner and President of Six Chuter Inc. This philosophy has been one of the core values that has guided the designs of every model for over two decades. And it is this design philosophy that helps set Six Chuter Powered Parachutes apart from all others.

Six Chuter Powered Parachutes are designed to provide a safe, and great performing aircraft platform with intuitive controls that make it as easy and enjoyable to fly.

Attention to detail of the basic airframe concept is paramount in creating a visually appealing design that is both lightweight, yet as strong as possible while built to meet or surpass the stringent ASTM light sport aircraft standards.

Let's consider each of the objectives included in this statement.

Our basic philosophy is predicated on building a safe aircraft achieved through the use of aircraft grade materials and hardware. To accomplish that, we believe that a safe aircraft should be as light as possible without compromising the structural integrity. Why lighter and stronger as opposed to bigger and heavier? Simply we believe that the greatest amount of safety is achieved through the performance of the aircraft. To do that requires a perfect marriage between the weight of the airframe and the wing (canopy).

Too many manufacturers and home-builders use heavier materials, including un-necessary tubes and brackets, and add extra items such as double shock suspension systems and complex overhead attachment points. The results typically are airframes that exceed the maximum safe wing loading recommended by the canopy manufacturer. At the very least the added weight and or overall size of the airframe diminishes the performance window. To us that is unacceptable.

Our lighter aircraft designs translate to shorter take off runs, better climb rates, slower descent rates, more efficient engine and improved fuel use, quicker turns and thus a larger safety window of operation. And not to be lost in that equation, are the additional years of use caused by less wear and tear on engines and canopies.

A great performing aircraft is the result of building a lighter design, but just as importantly, it requires properly matching the airframe to the canopy and engine. For over two decades we have conducted literally thousands of hours of test flying using various combinations of airframe, canopy and engines; and, continue to use only the most recognized and reliable engine and canopy manufacturers in the world with our products.



While many owners of our experimental light sport certified aircraft are flying with the elliptical canopies, we have steadfastly refused to achieve a slightly higher level of performance in exchange for what we consider the safer and easier to fly rectangular canopies. And therefore we do not offer the elliptical wing.

Dan Bailey's designs have also included careful positioning of the outriggers to the thrust line, as well as proper angle of thrust parallel to the canopy chord line, while in flight. The result is an aircraft that climbs well, while avoiding "stair stepping" that can occur with more radical or ill thought out designs.

Keeping the design as simple as possible helps to meet some of the other objectives including safety, ease of flying and maintaining lower cost. We have avoided adding more and more items to the airframe in exchange for simplicity. We remain one of the few powered parachute designs where frontal bars are optional, and not an integral part of the airframe design. We have always used simple, well known and tested components such as the Digital Engine Information System (EIS). The more items you add to an otherwise simple aircraft, in our opinion, simply increases the complexity and the difficulty with building, flying and maintaining. We avoid adding tubes, extra shock systems and other components simply to create a perception of having a stronger aircraft, preferring to focus on safety through light weight design and better pilot training.

Six Chuter Powered Parachutes are designed to be as easy as possible to learn to fly and to maintain. Again, part of this is achieved by keeping the aircraft components standard, and simple and by using the rectangular canopies on all factory kits and assembled aircraft. The airframe avoids welding except on a few factory provided parts. Thus if a tube is damaged, it can be easily replaced by the owner. And each of the components such as the instruments and wiring are all standardized and supplied from long standing dependable vendors. Some added ease with learning to fly our aircraft comes from the use of "intuitive controls". Ground steering uses "left is left" and "right is right" in lieu of a ground steering system that is a push pull system. And our throttle system uses forward for more power and back for less power. This avoids more complicated systems where too much thought perhaps leads to control systems that are not as intuitive as ours.

The efficiency of design goes hand in hand with the lighter and stronger design. Dan carefully and skillfully designed an airframe with fewer parts than most. An example is the use of a single aluminum spar that runs from front to back in lieu of twin steel frame rails. This design reduces the number of brackets required to attach tubes and results in a design that has proven even stronger



than previous models that use heavier and more tubes and brackets. The fewer tubes and brackets all feed back to the objective of being as light as possible, while not compromising strength. We have also avoided the use of heavier seats, molded body work and many other items that some manufacturers market to appeal to some potential buyers who might not be well informed about the downside of heavier options.

Designing and building an aircraft to meet ASTM light sport standards has virtually narrowed the field of powered parachute manufacturers from dozens to only a handful, including Six Chuter International. These standards are extensive and required years of hard work and investment to comply with. And the process of compliance is an ongoing one that requires constant attention to every detail of manufacturing. The result of course is an aircraft design that our customers know are as safe and high quality as possible.

A visual appealing design is perhaps a matter of personal opinion. But Six Chuter from their earliest model designs have distinguished themselves with great looking airframes. The sweep and look of the fan guard system has for the most part not changed in over 23 years. Six Chuter uses custom designed molded fiberglass components for the dash and seats. And we use the highest quality powder coat for our airframe colors instead of regular paint. The powder coated airframes are great looking and also extremely durable. Again, we have avoided adding heavier, fancier options, accessories or design features to keep a balance with our objectives for safety and efficiency.

Achieving the lowest cost possible considering our other objectives is perhaps the greatest challenge. We are neither the least expensive, nor the most expensive powered parachute on the market. We have developed over two decades of experience and relationships with various vendors so we know that we obtain our components at the least expense possible. And we use our local vendors for custom fabrication of many parts and use our own equipment of course to customize the airframes. Our team has years of experience in managing finances and projects and our company is structured with a small staff who are personally invested in the company. This and many other factors lead us to be able to offer the highest quality powered parachute on the market at the lowest price possible. We are also one of the few manufacturers who offer our aircraft in kit form. This appeals to many in the market who enjoy the process of building their own, and it avoids paying our company or somebody else the higher cost to fully assemble. In addition we are one of the few manufacturers that offer a full line of tandem, light sport aircraft and a "legal" Part 103 single seat.

"We would challenge prospective buyers to ask any other manufacturer they might be considering to articulate their design philosophy as we have. If they are able to do this and point to evidence of implementing the philosophy, we believe in many cases you will discover objectives that are in direct opposition to ours. And our objectives have helped Six Chuter to build, sell and support more powered parachutes around the world, by far, than any other."

