



The Leader In Recreational Aviation

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Next Event

March 12th

- Lt Col Doug "Bags" Jenkins F-15C Operations
- 5:30 Dinner



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ELECTRIC AIRCRAFT

By Steve Jones

With fuel prices creeping ever higher, and the prospect of replacing 100 Low Lead aviation fuel with something new, could an electric airplane be in your future? Some say yes. This month, we'll briefly explore some new developments in electric flight technology and visit some of the companies readying electric airplanes for the market.

There are a litany of benefits and challenges that go with spinning that whirly thing on the front, or the back with electrons. The benefits are legion. The power plant, an electric motor, has one moving part, and two bearings. We may see time between overhauls extended to ten times what we experience with gas engines. Pound for pound, we should get more horsepower from electric motors. And, they require far less cooling air than gas engines, so we'll see more aerodynamically efficient cowls. This means more propeller thrust will be available to move the plane forward.

So why aren't we seeing a revolution in flight technology?

Weight. While the electric motor will deliver more torque and horsepower per pound than a gas engine, it relies on a fairly heavy, low

density energy storage system — batteries.

Gasoline provides a huge advantage in terms of storing energy. We can carry it around unpressurized. It's a fairly stable, if flammable liquid. Plumbing, routing, pumping, and filtering fuel for on-board use is a well developed, well understood science. It's easy to monitor quantity on hand to determine if you're going to land at your intended destination, or if you're going to detour to some picturesque, off-field location. Finally, and most compelling, gasoline stores enormous energy potential in every pound.

The major constraining factor for electric aircraft is the weight of the batteries. There is intense interest in improving battery performance, and there's great hope we'll see a four-fold increase in energy storage and useful life of batteries over the coming years.

Another consideration is operations and maintenance. When the battery pack finally needs replacement, what will the incremental expense be to remove, replace and properly dispose of the old batteries?

With this in mind, we present several initiatives, beginning Page 6.