
Work is underway to develop an electric Waiex aircraft powered by this 270-volt, 200-amp motor. It's estimated the airplane will be able to cruise at 70 mph on 30% power for an hour.

# HEAR THE HUM?

## An electric airplane may be coming soon to an airport near you.

BY DAVID ULLMAN

**It's a new era.** Increasing concerns about fuel availability and cost are being met with encouraging technological advances, especially in the field of electric-powered aircraft. Right now, momentum is building for these aircraft as technology—driven by the auto industry and other users of electric motivation—makes them ever more viable. Many feel that the electric aircraft is a sure solution to save general aviation.

But what exactly is an electric-powered aircraft, and how would it work? Let's first look at the history and the technology behind this movement, and then take a glimpse at what the future may hold. (KITPLANES® Editor at Large Dave Martin, just back from AirVenture, offers a brief report on what appeared at the show on Page 17.)

Just for fun, though, let's start with a few predictions. In the next five years, before 2015, I predict:

- An electrically powered plane will stay aloft for 2 hours with two people.
- An electrically powered airplane will be cost competitive with Light Sport Aircraft and trainers.
- Electric airplanes will be powered by batteries with energy densities at least 50% better than what is available today.
- An electric airplane will land at an airport near you.

The state of the art in this field is advancing so rapidly that there are sure to be announcements soon that may make these predictions seem conservative.

### Definition of an Electric Airplane

Development in this field has been so quick that there is no firm definition of an electric airplane, so here is mine: An electric airplane is a human-carrying, heavier-than-air vehicle with the motive force supplied by an electric motor. The motor might get its electrical energy from batteries, solar collectors, fuel cells or a combination of these (one old-timer mechanic suggested a long extension cord). An electric airplane might be a motorglider that gains lift from thermals and updrafts and uses a motive force only periodically, or it might use the motor for continuous power. Further, it might also use electric power for lift as does an electric helicopter (not that I know of anyone who has tried this, but I am sure someone is out there considering it). A little on the gray side of this definition are airships. To me these are not airplanes, yet an electric airship flew in 1884, a remarkable feat. Finally, electric airplanes may also be capable of regeneration, regaining energy for storage by descending, decelerating or circling in thermals.

### History

My definition includes heavier than air, and it's worth looking at an airship, the La France, designed by Albert Constantin Krebs and Charles Renard. The LaFrance was 167 feet long and from 1884 to 1885 made seven flights. Five of these were round trips—the first for any

*Photos: Courtesy David Ullman, Dave Martin*