

Instant Start



Just flip a switch
open the throttle
(BATTERIES INCLUDED)

Using a Slovenian-developed electric propeller system, in a LAK17A, 18m-class sailplane successfully late 2009. Developed by the father-son team of Luka and Matija Znidarsic in Ljubljana, Slovenia, the Front Electric Sustainer (FES) incorporates a 0.9m carbon fibre propeller that automatically unfolds by centrifugal force. When not in use, the propeller blades fold against the nose of the sailplane thus reducing drag. Each blade weighs just 110 grams.

The Znidarsic's developed their own brushless DC synchronous permanent magnet electric motor to develop 15kW of continuous power at 85V. It weighs just 5.0 kg (11 lbs.) and is rated at 95% efficient.

Their controller, also self-developed, is mounted atop the sailplane's main wheel well box just behind the single-seat cockpit.

Power supply is by Kokam lithium-ion batteries. Mounted in two battery boxes behind the cockpit and accessible through a panel in the top of the fuselage, each 10 cell pack weighs 11.0 kg. The total available

energy is 3.6kWh.

In addition to powering the FES, they also provide electric energy for the sailplane instrumentation through a DC-DC converter. Voltage range of the battery system is 60-85 volt. The batteries can be removed for re-charging, which takes four hours. Complete additional weight in the fuselage is about 35kg. Most newer 15m and 18m sailplanes are already designed for the additional weight of a power-plant.

The Znidarsics explained to Gliding International they that they chose to develop the front-mounted system rather than the retractable pylon-type used by Pipistrel as with a front engine there is no additional drag of a propeller mast and that mean less power is required for equal performance.

"In our case, less power means fewer expensive batteries and a smaller motor, resulting in less additional weight and cost plus the potential for the best sustainer system for sailplanes.

Complete additional weight in the fuselage is about 35kg. Suitable sailplanes must have enough reserve in weight of non lifting