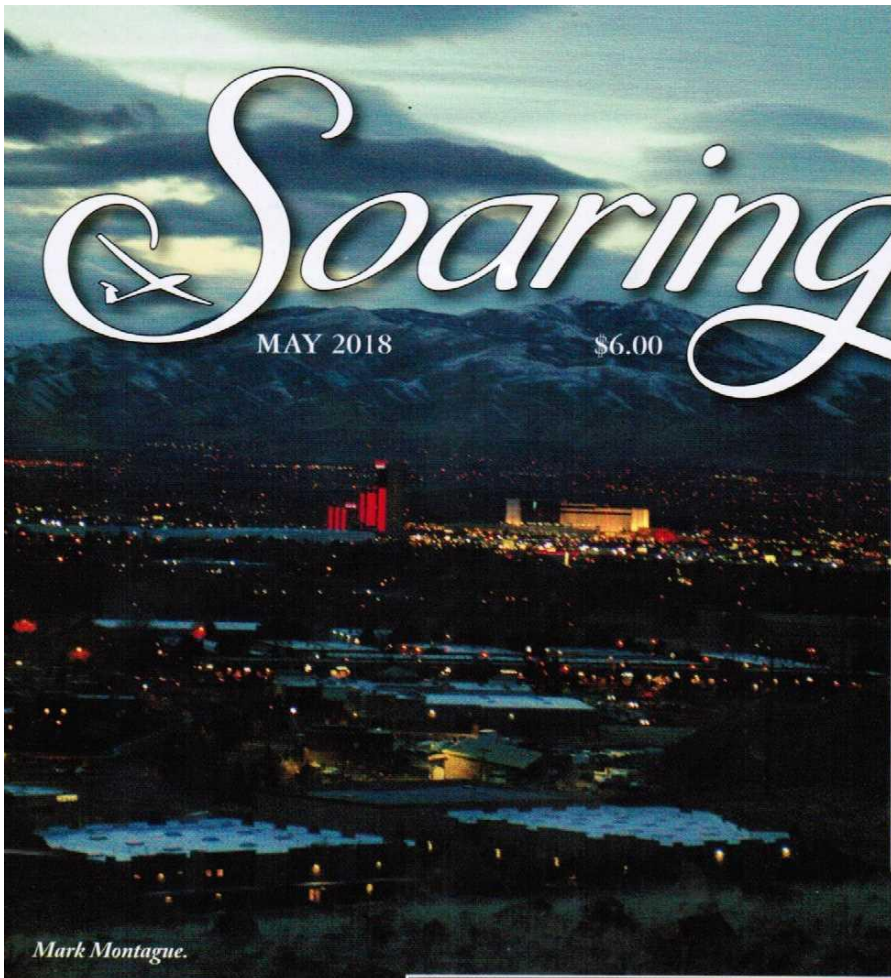


Soaring

MAY 2018

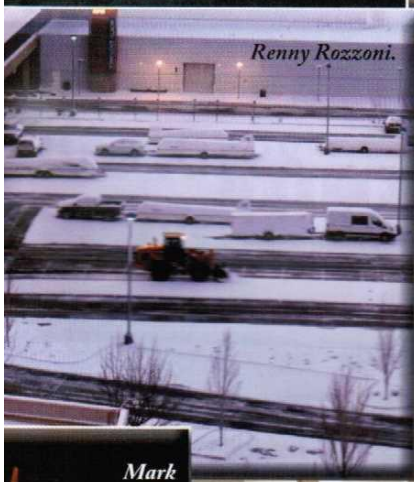
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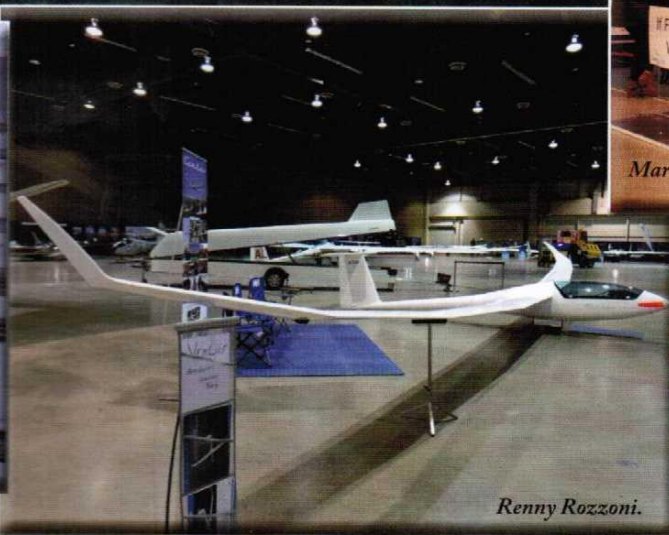
Mark Montague.



Mark Montague.



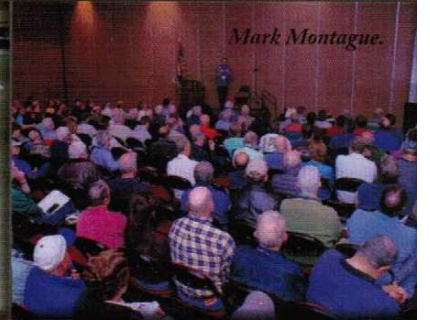
Renny Rozzoni.



Renny Rozzoni.



Mark Montague.



Mark Montague.



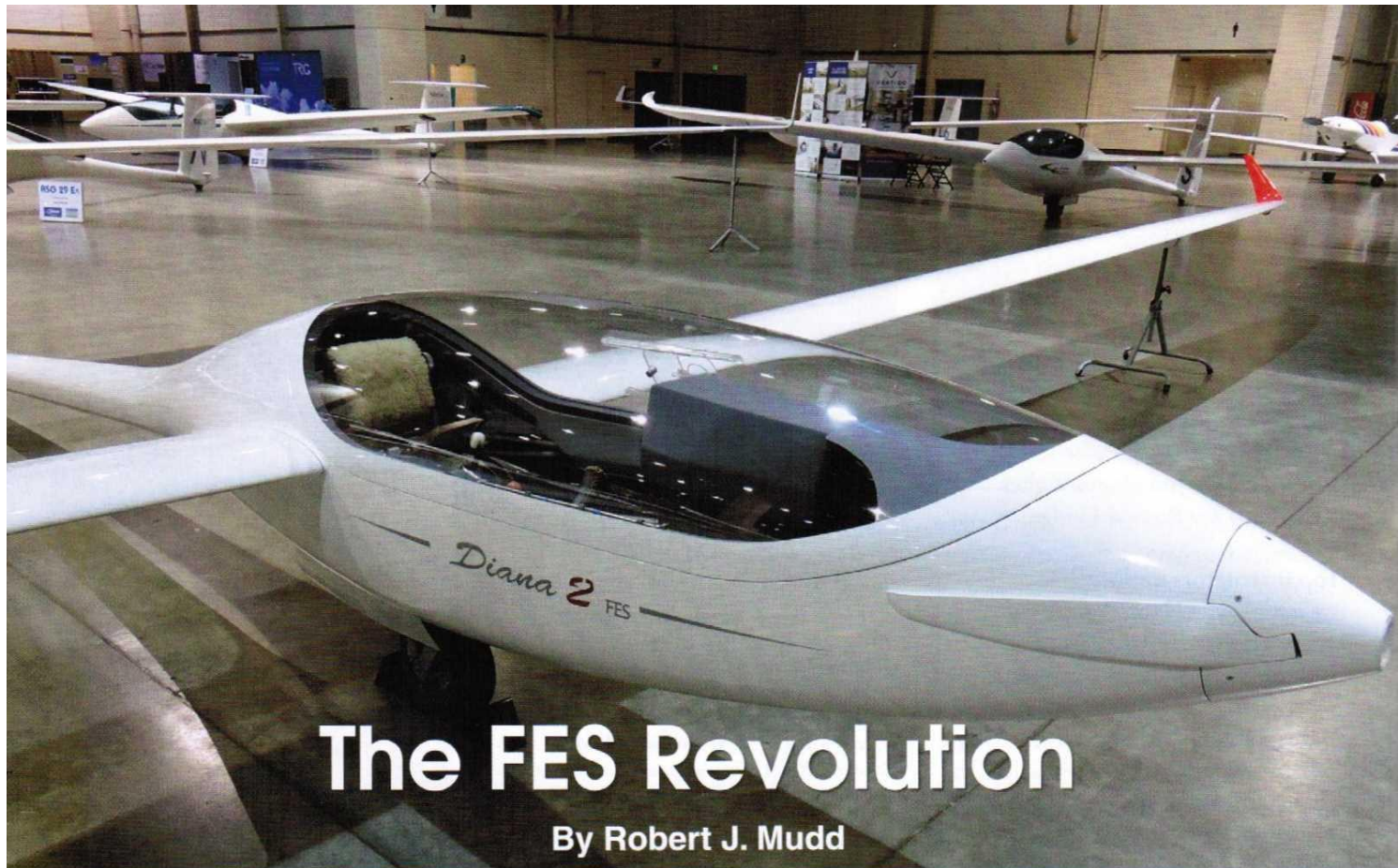
Mark Montague.



Lauren Sanders.



Mark Montague.



The FES Revolution

By Robert J. Mudd

Luka Žnidaršič and Matija Žnidaršič are not exactly household names or, for that matter, easy for Americans to pronounce. But you really ought to know who they are. This father and son team created the front electric sustainer system, or FES. That acronym is becoming familiar to glider pilots worldwide. Luka's company LZ Design, located in Slovenia, is at the forefront of electric propulsion. It's joined in that field by Roman Sušnik of ENSTROJ, also of Slovenia. With an electric propulsion system, efficiency is of paramount importance. The motors produced by these two pioneers have the highest efficiencies ever seen and the end point is yet to be reached.

Luka flew free flight model gliders from an early age and, like many before him, looked at adding a motor. His first attempt was a pylon-mounted, small displacement Cox motor. It proved inadequate and could only maintain level flight. He realized that the drag of the pylon was just too much for the diminutive Cox to over-

come. Mounting the motor in the nose provided the performance desired.

Over the years Luka and his lady friend, who also served as his crew, flew full-sized gliders both at home and in foreign contests. Luka became a dealer for Sportine Avicaja, builders of the LAK gliders. With marriage and children came crewing issues familiar to many glider pilots, male and female. What to do? In late 2009, with some help from his father and friends and a good grounding in model gliders, he worked up a prototype of an efficient electric motor. Developing a propeller that would work at 4,200 RPM, he installed the system into his LAK-17. His first contest flown with the FES was in 2010. Shortly after that, glider manufacturers started signing on to incorporate the FES into their existing models.

Over 140 gliders now fly with Luka's FES system. The list of glider manufacturers offering the FES is long and growing. Acceptance and praise is almost universal in the soaring world. For lighter-weight gliders, FES self-

Diana 2 FES on Convention exhibit hall floor. (Photo by Renny Rozzoni.)

launch is possible. With the heavier ships, sustaining flight and climbing is the method of operation.

Luka is still looking to the future and promising further developments in power and battery capacity – perhaps enough for two-seat gliders. Among other things, this could revolutionize training. The aviation world and gliding in particular have taken note of his accomplishments. He was awarded the Lindbergh Prize for the “Best Electric Propulsion System” at the AERO 2011 exhibition. And just last year the OSTIV Prize 2017 was bestowed on him for the FES system.

The FES is a seismic event in the gliding world. As a revolution, it ranks right up there with the introduction of carbon fiber in sailplane manufacturing. It will have a positive effect in almost every aspect of the sport. If you don't believe me, just wait and see: there will be an FES equipped glider coming to your gliderport soon. ✈

