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Earlier, months of effort had seen the glider carefully assembled by the skilled experts of the Otto Lilienthal Museum in his birthplace at Anklam in north-eastern Germany. Then the machine had been thoroughly tested in Germany using a winch, where Markus² and his supporters had struggled but finally succeeded in finding the right trim³.

Now, at last, the glider arrived at Marina State Beach north of Monterey. Today we moved it out of the box, carried all of the gear over the dune and set the glider up – and were flying it! We flew downhill along the slope of the dune, not too high above the ground, slow and steady – in the same way as the first human who ever managed to fly repeatedly and controllably: Otto Lilienthal, 124 years ago.

It was not the first time that we had met around here: Markus had flown Lilienthal's famous *Normalsegelapparat* (Normal Soaring Apparatus) last year at Tres Pinos and, together with Andy Beem⁴, at Dockweiler Beach and in the Monterey area, as today. George⁵ had seen us practicing with the monoplane and had come by to support us. He was the one who recommended flying here: a dune with constant wind, not too crowded, with the right slope – and in a country where flying uncertified ultralight aircraft with weight-shift control is legal. The place couldn't be any better.

The *Normalsegelapparat* was patented in 1895 and many copies were sold in America and Europe – it was the world's first production aircraft. Together with the theory of curved wings, developed and published by Lilienthal, the glider contributed to the epochal shift in the rapid development of aeronautics. However it was also the aircraft with which Otto Lilienthal fatally crashed on August 9th, 1896.

After his death the following day, most people believed that his aircraft simply could not be flown stably and safely, and that it had been Lilienthal's extreme fitness and skill that had allowed him to fly it at all. Even though he had flown his glider hundreds of times before the final crash, people's opinions were determined by this one failed attempt.

Bringing the monoplane to successful flight in 2018 had been extremely hard work. After wind tunnel tests by the DLR (Germany's National Aerospace Centre) in 2016, Markus conducted platform and winch tests in order to gain experience,

before successfully flying the glider at the dune on Marina State Beach. These flights, under the eyes of Andy and George on April 3rd 2018, were the first flights with this glider since 1896.

This year we had just three days; everything had to be exactly right from the very beginning. With help from a handful of hardy volunteers, we rigged the *Grosse Doppeldecker* at the beach and carried it to the top of the dune. The wind was steady, slowly increasing from 10 mph (16km/h) before noon to a maximum 14 mph in the afternoon. At first we ventured only a few yards up the dune.

Markus, with his monoplane glider experience, made the first attempt. He launched very carefully and slowly, but the glider flew beautifully right from the beginning. It glided steadily and pitched up as soon as Markus shifted his weight a few inches backwards. On the first day the flights lasted just three or four seconds, but we were all excited and satisfied with these initial glides. One could easily see that the glider flew very safely and steadily, and reacted surprisingly well to every weight shift of the pilot. Both Andy and Markus flew that day.

The next day started out even better. We began early after a night in Monterey. Although everyone knew what they were about, something was wrong. All of us noticed that the glider was flying left turns in spite of the pilot trying to compensate for the inexplicable drift by shifting his weight to the right. Try as we might we couldn't figure out the reason, and instead of bothering too much about this imperfection all three of us enjoyed flying the glider from further up the dune. The left turn sometimes even helped to oppose the crosswind that increased at the foot of the dune.

George did his guest flight that day and landed the glider right on his first try. We discovered later that one of the cords keeping the two upright bamboo struts in position had shifted and led to a misalignment. These two struts separate the upper wing from the lower. They were no longer parallel due to the misalignment and the upper deck was pointing a few degrees to the left.

Our third day of flying the *Grosse Doppeldecker* was set for one week later. It was the end of July and Markus had had time to re-rig the glider and find and correct the misaligned cord attachment. The result was exhilarating: the glider flew



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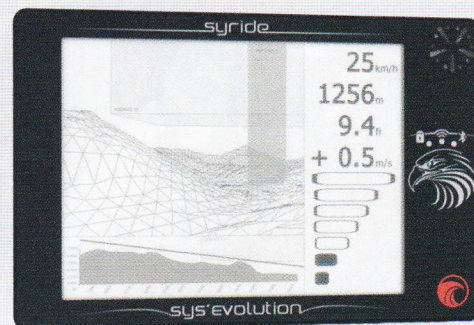
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