



...and it does fly!

The Archaeopteryx Story - from Primeval Bird to a Glider Plane that can be Launched on Foot

The flying capabilities of the Archaeopteryx – or primeval bird as it is also called – are disputed in modern palaeontology. Meantime, numerous fossils of bird-like dinosaurs have been discovered. Whether Archaeopteryx's flying attempts were only gliding flights or whether it could actually take off from the ground remains unclear. What is certain, however, is that the glider "Archaeopteryx", built by two aeroplane designers, can be launched on foot from any slope or mountain, weighs only 50 kg and has excellent flight characteristics.

It all started with model airplanes

Like so much in the history of aviation, it all started with model aircraft. The two apprentice toolmakers, Ernst Ruppert and my brother Bruno, were totally obsessed by aeromodelling. They built and flew free-flight models, competing against each other. Together, they took the train to the Swiss free-flight championships or practised in the fields around their home towns. After completing their apprenticeships, they both remained faithful to flying: Ernst took up gliding while Bruno learnt to fly motorised planes. They both eventually became flying instructors. Years later, none other than Ernst's son, Roger Ruppert, has, via aeromodelling, become an aeroplane designer.

The dream of glider that can be launched on foot

While Bruno remained faithful to aeromodelling, developed numerous

aerobatics models and was very successful in his field, Ernst turned entirely to gliding and spent a large part of his youth on the Schänis glider airfield where gliders were towed to altitude by motorised planes or using a winch. It wasn't long before delta wing gliders made their appearance, taking off with a minimum of effort from slopes and mountains around the airfields. This must have prompted Ernst to build a glider that could be launched with a similar lack of effort. The result was the Canard.

„Duck“ concept and solar flight



As early as 1972, Ernst and aeroplane engineer Hans Farner jointly developed and built the duck motor glider Colibri. In 1976, this concept provided the impulse for the ultra light-weight glider Canard 2 FL that could be launched on foot. The design, which was entirely in Kevlar-carbon-glass composite, made it possible to achieve a weight of just under 60 kg with a span of 13.5 m. Apparently the flight characteristics were excellent. A pre-production run of 10 gliders was produced. Günter Rochelt (together with Schöberl and Richter) used this aeroplane as the basis for the first German solar-powered aeroplane Solair I. Although a large part of Rochelt's success (1980) was based on the innovative efforts of Hans Farner and Ernst Ruppert – he used the negative



moulds of the Canard FL 2 – an aviation journalist claims that he failed to even mention the two pioneers.

Development of Archaeopteryx as an university project

The first Archaeopteryx prototype was developed at the Zürich University for Applied Sciences ZHAW in Winterthur and was completed in 2003. Ernst's son, Roger Ruppert, was involved. This demonstrated the technical feasibility of an aircraft launchable on foot – a mix between a hang glider and a glider. The unladen weight was 54 kg and the span was 13.6 m. A high-lift wing profile and a low sink rate (0.5 m/sec) enable tight circling in small upwind regions. Production was again taken on by Ernst Ruppert (www.ruppert-composite.ch).



↑ Ernst's original Canard FL-2

← Solair I of Gunter Rochelt ↓



Launchable on foot the Aerchaopteryx glider ↓

The circle is closed by the model glider Archaeopteryx

The experienced builder and pilot of numerous large glider models, Markus Rohr, was determined, after successfully building an ASK 18 to a scale of 1:2.5, a Woodstock to a scale of 1:2 and an SB 14 M 1:3, to build a model of the Archaeopteryx to a scale of 1: 2.25. It was not intended to meet the most stringent scale criteria for a glider model but would have to be clearly recognisable as an Archaeopteryx in the air. It took only 8 months to build. The first flight took place in mid-July 2010 at the Interlaken airfield. The model was towed to an altitude of 300 m by an electrically operated towing machine. Markus enjoyed the slow circling and benign flight characteristics during a 30 minute flight and then touched down with extended landing flaps that enabled a steep and yet slow approach. Our Archaeopteryx story ends where it all began – with aeromodelling.



Archaeopteryx model glider of Markus Rohr ↓

