

Back to the future



A new era for powered hang gliding: this Atos is powered by an electric motor from Toni Roth, which gives him 15 minutes to fly up to the thermals.

> Remember! This is an international publication, so all prices exclude local and national taxes, eg VAT and sales tax.

> For a full list of abbreviations and metric / imperial conversions, see page 6.

> Manufacturers, importers and advertisers are indexed at the back of this publication.

ABBREVIATIONS

Model	Model of aircraft
EW	Empty weight, kilograms (1kg = 2.20 lb)
Eng	Engine
HP	Horsepower (hp)
Cert	Certification
Red	Reduction ratio
PD	Propellor diameter, centimetres (1cm = 0.394 in)
TC	Tank capacity, litres (1 litre = 0.264gal(US), 0.220gal(imp))
Price	Assembled price

The hang glider had only just arrived in the early '70s but even then some pilots wanted to launch from flatland sites. The answer seemed simple: install a two-stroke engine. In reality, the result was a flying machine that was tricky to fly, had an awful rate of climb and often generated an infernal racket. Nevertheless, these primitive flying machines marked the arrival of ultralight aviation, firstly in the USA and later in Europe. At last you could fly with no airport, no grass airstrip, not even a slope. A field was enough. Not surprisingly, they attracted a completely new user-group.

Thirty years later, the powered hang glider has become an established part of the aeronautical scene. Modern designs are vastly easier to fly than the early models and offer better performance than a paramotor.

Admittedly, the market is small, but that's more a commentary on the convenience of the paramotor than on the appeal of the powered hang glider.

Whether they remain a minority interest or find new pilots will depend both on the legislators and the engineers. Sport flying associations in countries such as Germany and Austria have succeeded in obtaining liberal

airworthiness regulations for powered hang gliders below 120kg, similar to that for fixed-wing ultralights, while in the UK foot-launch aircraft are not regulated at all, other than by a requirement to obey air law. However, the German and Austrian associations are still trying to obtain general permission for their operation away from licenced airfields.

Advances in wing design and motors will drive future development. One of the most interesting projects is the electric power pack developed by Toni Roth. Its take-off power is notably better than that provided by a piston engine. Also, it has a precise power regulation system, enabling the pilot to maintain altitude automatically and concentrate on the search for thermals.

Perhaps this is the way forward. Electric motors are virtually silent and would promote the social acceptability of leisure aviation. So far, flight duration has been limited by battery capacity, but now a new route is opening, a route which holds promise not just for powered hang gliders but also for fixed-wing ultralights. The German and Swiss sport flying associations are trying to persuade their regulators that electric-powered machines should be placed on the same footing as their unpowered brethren. Their main argument is that battery capacity is so limited that it can only deliver brief, environmentally friendly take-off power; there is insufficient capacity for continued cross-country flight.

If Swiss legislators accept this argument, we may see powered hang gliders flying above the Swiss Alps for the first time since they were banned in 1984. One could not claim that electric-powered hang gliders were truly 'ecological', since the charge would come from a nuclear power station and a socket in the wall. However, galvanic solar panels are increasingly efficient, and the hangar roof is large...

Willi Tacke

AERVOOLUTION

'Keep it simple' is the philosophy behind this powered hang gliding harness. Made by the same company as the Orbiter paramotors, it is a simple yet effective design which confines itself to the essentials. Originally developed by top hang glider pilot Randy Haney, it is now made by Günter Vetterl, formerly the German distributor.

Model	EW	Eng	HP	Cert.	Red	PD	TC	Price
Raven	21	Radne	15	251	1,354	130	5	4 400€



Raven

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AIRTIME PRODUCTS

The latest version of the Explorer, the LD, is an evolution of the previous model, but now incorporates an aerodynamic harness and a retractable carbon propeller. Particular attention has been paid to the location of the centre of gravity, to keep the control bar as far forward as possible.

Model	EW	Eng	HP	Cert.	Red	PD	TC	Price
Explorer LD	21	Radne	15	-	-	1:1.5	125	-



Explorer LD

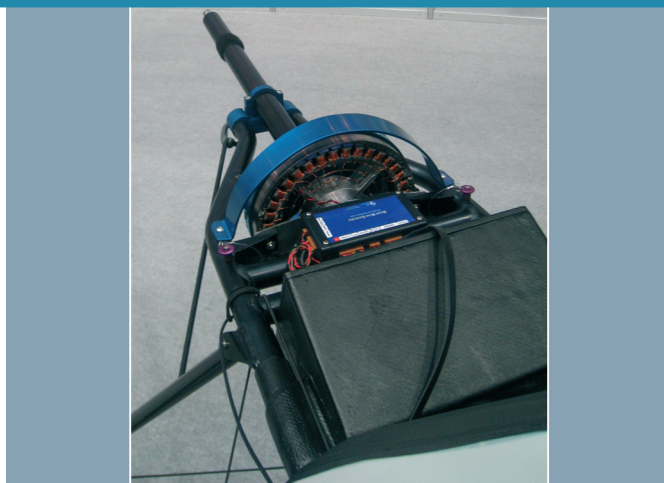
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FLUGSPORT TONI ROTH

Inventive engineer Toni Roth has come up with undoubtedly the most innovative aircraft in this section. His electrically assisted hang gliding harness gives the pilot 15min of power, enough to climb at 2.2m/s. That may not sound like a long time, but it's ideal for gaining height and seeking out those thermals. And even the most radical environmentalist will struggle to find a reason to complain about it!

Model	EW	Eng	HP	Cert.	Red	PD	TC	Price
E-Lift rigid wing	28	PPSM Direct 10	-	-	direct	140	0	-



E-Lift rigid wing

FLUGSPORT TONI ROTH

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