

Le premier paramoteur électrique sur batterie LiPo

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Csaba Lemak and Patrick MacKenzie of Toronto have been spending the past year perfecting their dream machine – an electric paramotor. These two maverick visionaries believed that battery and motor technology could meet the challenge, despite expert opinions to the contrary. The challenges they faced were many; power density, heat dissipation, throttle control, weight reduction, reduction of charging times, speed controller issues. After considerable investment of time and money the pair had produced a working prototype, mounted on the lightweight, but sturdy Walkerjet frame. Testing and development continued throughout the winter months.

A few burnt out motors later, the fledgling was ready to leave the workshop. The learning curve has been steep, but Lemak and MacKenzie are certain they have overcome the main obstacles and are, even now, designing the successor to their first prototype. On Tuesday 6th June Csaba Lemak took the first electrically powered paramotor into the air, making a small but not insignificant notch in aviation history. On Sunday 11th June the machine was ready to meet the world and I was glad to be invited along to witness the world's only electric paramotor up close.



The whole unit weighs in at under 22 kg, but further weight reductions are likely as the next prototype is intended to be a direct drive. The current paramotor has a two blade prop, but this will also change in the next version. The modified 3 phase motor delivers approximately 16/17 horse power and full thrust is achievable in 1.2 seconds. The 'ignition system' has been designed with safety in mind and involves a sequence of button presses to ensure that the machine is never *live* when not in use.

The batteries are arranged in 4 groups of 28 and are air cooled. Currently charging time is around three hours, but theory suggests 30 mins should be possible. The number of useful charging cycles will be around 1600, which should last most pilots for some time! How long the machine will fly is still unknown, but it has sustained around 45 minutes of flight time on each day of its two day testing period. It has only made four flights so far. This is the first step - proof of concept, now the real fun begins!..

Le poids de l'appareil est en dessous de 22 kg, mais il pourra être réduit car le prochain prototype sera en propulsion sans réducteur. Le Paramoteur actuel a une hélice à deux pales, mais cela aussi sera changé dans la prochaine version. Le moteur modifié pour la phase 3 délivre à peu près 16/17 chevaux et la puissance max est obtenue en 1,2 secondes. Le système « d'allumage » a été conçu sur le principe de la sécurité et utilise une séquence de pressions de bouton pour que la machine ne soit jamais allumée quand elle n'est pas en service. Les batterie sont groupées en quatre packs de 28 éléments et refroidies par air. La durée de chargement est actuellement environ de trois heures, mais en théorie ce serait possible en 30 minutes. Le nombre de cycles de charge, autour de 1600, devrait contenter la plupart des pilotes ! La durée totale de l'autonomie de vol n'est pas encore connue, mais il a supporté des vols d'environ 45 minutes lors des deux premiers jours de test. Il a volé quatre fois déjà. C'est le premier pas – la validation du concept – c'est maintenant qu'on commence à s'amuser !...