



Features

French test-fly battery-powered plane

Charles Bremner, Paris

The Times

551 mots

4 janvier 2008

[The Australian](#)

1 - All-round Country

20

Anglais

Copyright 2008 News Ltd. All Rights Reserved

THE dream of inexpensive, eco-friendly aviation has come closer to reality after a French test pilot achieved the first flight in a conventional light aircraft powered by an electric motor.

The **Electra**, a wood-and-fabric single-seater, flew for 48 minutes for 50km around the southern Alps, winning a global race to apply battery power to a fixed-wing standard aircraft.

The APAME group, founded to develop green aviation, said the flight showed that non-polluting, quiet light aviation was within reach.

``This will be a real aeroplane that will have an airworthiness certificate," said APAME president Anne Lavrand.

``It is a machine built for anyone with a pilot's licence."

The quest to replace noisy, fossil-fuelled aircraft engines with quiet, clean power has been under way for nearly 30 years. The big hurdle is the punitive weight of batteries, which produce only a small fraction of the energy generated by petrol.

Paul MacCready, a celebrated Californian engineer, pioneered exotic solar-powered flying machines, one of which flew from Paris to Kent in 1981. Recent advances in battery technology have led to electric power for small unmanned observation drones and radio-controlled model aircraft as well as the extra drive for motor gliders. Last northern summer, the French group and a US inventor each flew electric-powered, delta-winged microlight aircraft for the first time.

The last challenge has been to scale up electric drive to equip passenger-carrying conventional aircraft of the kind flown by recreational pilots.

Ms Lavrand's group, financed by French aerospace companies and other donors, started its project quietly 18 months ago.

``When we began, no one believed we could do it," she said from APAME's base, near the southern Alpine town of Gap.

The group used a Souricette kit aircraft and adapted to it a 25-horsepower British-made motor of a type that powers golf carts. The key to their pioneering December 23 flight was the new generation of light lithium-polymer batteries, 48kg of which supply power in the **Electra**, which has a 9m wingspan.

A new category of modest-performing, light sport aircraft is ideally suited to the new battery power. Many recreational pilots will be prepared to forgo speed and range if they can escape the cost, noise and guilt of carbon-belching, gas-guzzling petrol engines, the firms say.

Sonex, a leading American manufacturer of kit aircraft, is about to fly a 50-horsepower electric motor that will carry two people at 220km/h for up to an hour before it has to be recharged.

Ms Lavrand said the fuel cost per hour of the **Electra** was E1 compared with about E60 (\$100) for an equivalent petrol-driven machine. The motor and batteries will cost between E10,000 and E15,000, about the same as existing small petrol engines.

``It's expensive, but you have to think of it like buying the fuel up front," Ms Lavrand said.

Electric power for larger aircraft, including airliners, is also on the horizon, with research by NASA and Boeing into the holy grail of the field: hydrogen-fed fuel cells. These will drive electric motors, like those on French high-speed trains.

AUS-20080104-1-020-083511

Document AUSTLN0020080103e4140002c

© 2008 Factiva, Inc. Tous droits réservés.



Overseas news

Battery-powered flight takes off

Charles Bremner, Paris

579 mots

3 janvier 2008

[The Times](#)

39

Anglais

(c) 2008 Times Newspapers Limited. All rights reserved

* Pioneering test brings green aviation closer

* Aircraft flew for 48 minutes on clean energy

The dream of inexpensive, eco-friendly aviation has come closer to reality after a French test pilot achieved the first flight in a conventional light aircraft powered by an electric motor.

The **Electra**, a wood-and-fabric single-seater, flew for 48 minutes for 50km (30 miles) around the southern Alps, winning a global race to apply battery power to a fixed-wing standard aircraft.

The APAME group, founded to develop green aviation, said that the flight showed that non-polluting, quiet light aviation was within reach.

"This will be a real aeroplane that will have an airworthiness certificate," Anne Lavrand, president of APAME, said. "It is a machine built for anyone with a pilot's licence."

The quest to replace noisy, fossil-fuelled aircraft engines with quiet, clean power has been under way for nearly 30 years. The big hurdle is the punitive weight of batteries, which produce only 2 per cent of the energy per pound of petrol.

Paul MacCready, a celebrated Californian engineer, pioneered exotic solar powered flying machines, one of which flew from Paris to Kent in 1981. Recent advances in battery technology have led to electric power for small unmanned observation drones and radio-controlled model aircraft as well as the extra drive for motor gliders. Last summer the French group and a US inventor each flew electric-powered, delta-winged microlight aircraft for the first time.

The last challenge has been to scale up electric drive to equip passenger-carrying conventional aircraft of the kind flown by recreational pilots. Ms Lavrand's group, financed by French aerospace companies and other donors, started its project quietly 18 months ago. "When we began, no one believed we could do it," she told The Times from APAME's base, near the southern Alpine town of Gap.

The group used a Souricette kit aircraft and adapted to it a 25-horsepower British-made motor of a type that powers golf carts. The key to their pioneering December 23 flight was the new generation of light lithium-polymer batteries, 48kg (105lb) of which supply power in the **Electra**, which has a nine-metre (30ft) wingspan.

A new category of modest-performing, light sport aircraft is ideally suited to the new battery power. Many recreational pilots will be prepared to forgo speed and range if they can escape the cost, noise and guilt of carbon-belching, gas-guzzling petrol engines, the firms say. Sonex, a leading American manufacturer of kit aircraft, is about to fly a 50-horsepower electric motor that will carry two people at 220km/h (135mph) for up to an hour before it has to be recharged.

Ms Lavrand said that the fuel cost per hour of the **Electra** was Euro 1 (70p) compared with about Euro 60 for an equivalent petrol-driven machine. The motor and batteries will cost between Euro 10,000 and Euro 15,000, about the same as existing small petrol engines.

"It's expensive, but you have to think of it like buying the fuel up front," Ms Lavrand said.

Electric power for larger aircraft, including airliners, is also on the horizon, with research by Nasa and Boeing into the holy grail of the field: hydrogen fed fuel cells. These will drive electric motors with power like those on French high-speed trains.

(c) Times Newspapers Ltd, 2008

Document T000000020080103e4130002r

© 2008 Factiva, Inc. Tous droits réservés.