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GO-ROUND

ALDINGA AERO CLUB MONTHLY NEWSLETTER

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View of Middleton on the south coast at 2500 feet from AAC member Ray Newman's Pipistrel. Flying coastal westerly towards Victor Harbor.



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Universal Hydrogen's 40-passenger hydrogen electric plane completes maiden flight

Mere weeks after achieving experimental airworthiness certification from the Federal Aviation Administration (FAA), [Universal Hydrogen](#) has successfully taken its 40-passenger regional hydrogen electric plane to the skies. The aircraft took off from Washington state this morning and ascended to an altitude of 3,500 mean sea level (MSL) before safely landing, as you can see in the video below.

Universal Hydrogen Co. is a Southern [California-based aviation company](#) founded in 2020 by engineers with the mission of bringing zero-emission hydrogen electric-powered aviation to fruition.

In early February, we covered new milestones achieved using its Dash-300 flying test bed. The aircraft has the capability to eventually transport over 40 passengers using hydrogen fuel cells and electric powertrains and is promised to eventually become the largest of its kind to ever take to the skies.

The runway to today's latest milestone began with the FAA experimental certification of the Dash-300, giving Universal Hydrogen permission to take off.

Universal Hydrogen is [celebrating today](#) following the first successful flight of the hydrogen electric plane this morning, which took off in Grant County, Washington, at 8:41 a.m. PST and flew for 15 minutes

For this initial flight, one of the airplane's engines was replaced with Universal Hydrogen's fuel cell-electric powertrain. The other standard engine remained to ensure the safety of the plane and its pilot, former US Air Force test pilot Alex Kroll. Kroll spoke to the confidence achieved during flight: During the second circuit over the airport, we were comfortable with the performance of the hydrogen powertrain, so we were able to throttle back the fossil fuel turbine engine to demonstrate cruise principally on hydrogen power. The airplane handled beautifully, and the noise and vibrations from the fuel cell powertrain are significantly lower than from the conventional turbine engine.

Hydrogen has the lowest energy per unit volume but highest per unit mass. Furthermore FCs are more efficient than turbine engines. Since you pay for everything you lift in aviation hydrogen does have a chance there. Current batteries have too low specific energies (kWhr per kg) If a future generation of battery doubles or triples the energy per unit mass they will take over.

Representatives from Connect Airlines were in attendance as the hydrogen electric plane took off. Connect has secured the first US order to convert 75 ATR 72-600 planes to Universal Hydrogen powertrains with the purchase rights for 25 more. Connect Airlines CEO John Thomas also spoke:

Today will go down in the history books as the true start to the decarbonization of the global airline industry and we at Connect Airlines are extremely proud of the role that we, as the first US operator, will play in leading the way with Universal Hydrogen. We have committed to being North America's first zero-emission airline and this historic flight, taking hydrogen, which can be made with nothing but sunshine and emitting only water, is a key milestone on our journey. With the first successful flight complete, Universal Hydrogen kicks off a two-year testing program that is expected to enable full certification for hydrogen electric passenger flights using the aforementioned ATR 72 planes by 2025.

The flight also marks the Dash-300 flying test bed as the largest hydrogen electric plane to take flight, paving the way for more hydrogen electric conversions of existing aircraft. Universal Hydrogen cofounder and CEO Paul Eremenko elaborated:

Our business model resolves the chicken-and-egg problem between hydrogen airplanes and hydrogen infrastructure by developing both in parallel and with a uniquely low-cost approach. The airplanes are converted to hydrogen using an aftermarket retrofit conversion kit, tackling the existing fleet rather than developing a brand new airplane. And hydrogen fueling uses modular capsules compatible with existing freight networks and airport cargo handling equipment, making every airport in the world hydrogen-ready.

Club Charity day

The club charity day is on again this year. To be held on Sunday 23rd April 1000—1500hrs

The club will be hosting Heart Kids, and their families. A free BBQ will be offered to all attending and members are encouraged to participate in a fun day for all. Evan John facilitates the day with the help of club members. Free flights are offered to all children and also family members if space is available. Please contact Evan (if you have not already) to offer help on the day.

March quiz :

Wind velocity has two elements :

They are DIRECTION (300degrees T) and SPEED (20 Kts)

By how many nautical miles should a pilot avoid a thunderstorm ?

Ten nautical miles, preferably upwind

April Quiz questions:

List three types of precipitation

What is meant by Stratiform