



## ‘Hydrogen power: it’s not hot air’

Members who attended the Darwin roadshow in July last year will have heard the announcement of the partnership of RAAA airline member, Skytrans with Australian emission-free hydrogen electric aircraft start-up, Stralis. Stralis will supply the regional airline with 15-seat Beech1900Ds retrofitted with their hydrogen electric propulsion systems.

*RAAA News* spoke to Stralis co-founder and CEO, Bob Criner, for an update on their progress. Criner is driven by a passion for sustainability, backed up by experience. Tennessee born, he came to Australia at the age of 10, and is a University of New South Wales qualified aerospace engineer. He has worked in traditional aerospace with companies such as Airbus and Gulfstream, and before co-founding Stralis, with companies working on emission-free aircraft projects, such as Heart Aerospace, Ampaire, magniX and Google X.

When asked why retrofit such technology into a conventional airframe such as the Beech1900, Stralis’ approach, Criner says, ‘is crawl, walk, run’. Working on a well-established airframe type such as the Beech1900 (there are around 500 of them around the world), means they ‘can focus on advancing the propulsion’. With a range of 800km, and 15 seats (four of the conventional 19 seats will be replaced by fuel storage), the hydrogen electric Beech1900 will be in a sweet spot for regional aviation. Stralis is working on a proprietary fuel cell stack, which will convert hydrogen to electricity, a fuel cell Criner says ‘will be 35 per cent lighter than competitors’ systems’.

Part of the ‘crawl, walk, run’ philosophy is to develop a Beechcraft Bonanza as a demonstrator, anticipated by the end of this year or early next year. ‘It’s a smaller, cheaper, less risky proof of concept,’ Criner says, because the ‘systems are scaled down in the Bonanza.

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### Dedicated aviation software

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### Introducing ... Natalie Gane

Welcome to the RAAA’s new admin/membership officer.

# From the Vice chair



**Mark Wardrop**  
RAAA Vice Chair  
Director Chartair

Co vice-chair Adrienne Fleming spoke in this column last edition of the year beginning with a vengeance, and that pace certainly continues.

The Avalon Airshow was a much-anticipated event after the 'stop-go-stop' interruptions of COVID. I'm sure those who were able to attend will agree it was worth the wait. It was extremely well attended, and there was a great energy to it all.

The board and I were very pleased to be able to meet many of you in person at our well-attended networking function on Friday during the show. There's nothing like that face-to-face interaction after so many Teams meetings. We were able to reconnect with current members, meet new members, and even had a number of international visitors who popped in to see what the RAAA is all about. Associate members such as Viva and BP also took the opportunity to host events for industry at the Airshow.

Common themes in the conversations I had with members centred on the challenges of the GA supply chain, in particular parts and engines; the cost of business and the impact of inflation; pilot progression and how airlines are recruiting; and the ongoing engineer crisis.

Although business still seems to be strong, the way interest rates are going my gut feeling is that things are going to get worse before they improve. While there is still some discretionary spending, it does feel as if it's going to get tougher.

The problem of attracting young people into the industry continues. I had personal experience of the challenges recently when I participated in a careers evening with private schools in Sydney. We know aviation is a great career path for young people with lots of opportunities across the sector: in airlines, airports, GA and Defence, air traffic management, but there was a disappointingly small attendance at the aviation presentation compared to the other sectors.

On another issue: CASA is still seeking information from operator members who may be impacted by the discussion about the 9–13 seat break, and the cost of transferring from TAWS B to TAWS A. If you will be affected, please get in touch with Steve, and he can pass on the information to CASA.

Finally, a call to save the date. The RAAA technical working group is holding a webinar on 27 April at 1100 AEST featuring presentations from several emerging technology organisations such as Stralis, Fly Ribbit and Evation, whose all-electric passenger aircraft 'Alice' made her maiden flight in September last year. (Read more about Stralis, Fly Ribbit and Evation in this issue of *RAAA News*.) It promises to be a most worthwhile and thought-provoking session, so look out for details and Eventbrite registration which will be sent to members shortly.

Stay safe

Mark

## 2023 RAAA events

### Webinar

#### April

RAAA technical working group  
– emerging technologies

27 April 1100 AEST

### Roadshows

#### June

Sunshine Coast  
22-23 June

#### September

Canberra  
13-14 September

[www.raaa.com.au](http://www.raaa.com.au)

## 2023 Aviation events

### MRO Australasia

17–18 May 2023  
Sofitel Brisbane Central  
[MRO Australasia](http://www.mroaustralasia.com)

## 2024 RAAA events

### RAAA biennial convention

19-21 March 2024  
RACV Royal Pines Resort  
Gold Coast

# From the CEO



**Steve Campbell**  
RAAA CEO

Well the year started with a bang – an incredibly successful Avalon Air Show for both AMDA and the RAAA. It was great to see the crowds coming back, and thanks to the generosity of AMDA, we had a stand for the four industry days. I had some trepidation that I would be talking to myself for those days, but happy to admit I was wrong! I caught up with so many members, some I hadn't had a chance to meet in person, and we also gained some new members. Welcome aboard!

At Avalon I also had the chance to be on two panels. The first was facilitated by Aviation Australia, talking about industry skills. Not only was Pip Spence, CASA CEO on the panel, but the whole CASA board was in attendance. It was a great opportunity therefore to focus on our LAME paper, get the message out about how critically engineer shortages are affecting regional aviation, and the practical steps which can be taken to alleviate some of the problems.

The second session, facilitated by Airbiz, where I was a panellist along with Sir Rod Eddington, looked at net zero and sustainable aviation fuels (SAF). A big issue for regional aviation will be having access to a suitable supply of fuel in the transition to SAF.

We also held a board networking function on the Friday morning of the air show. It was a rare opportunity to have almost all the board in one spot, and for current and future members to meet them. It reinforced the quality of people we have on the board, and how good it was to have face-to-face contact after all this time.

A big congratulations to AMDA on a brilliant show, and I'm really looking forward to the next one.

Last newsletter, I also mentioned plans for the 2024 convention. We are finalising a deal with AMDA for them to organise the event, so make sure you save the dates: 19-21 March 2024.

I'm also excited to announce that the RAAA is now a member of the [National Alliance for Regionalisation](#). The goal of the Alliance, which includes over 30 peak industry bodies, such as the Local Government



**Photo** | National Alliance for Regionalisation launch 21 March in Canberra. Image NAR website.

Association, the Master Builders Association, the Migration Institute, National Farmers Federation, the Minerals Council to name a few, aims to increase the number of people living in regional Australia from the current 9.5 million to 11 million. This increase would need a corresponding improvement in housing, health, transportation and education services to the regions, something the Alliance will focus on supporting.

We've also had the first meeting with the Department on the Aviation White Paper. We highlighted to them the fact that the industry has consultation fatigue and argued that there was no need to revisit ground we've already covered in previous industry submissions. We just want to see some action on the feedback from industry, along with some certainty on government policy, for example on net zero and sustainable fuels!

Despite some hiccoughs, there is movement on the LAME licensing changes front. CASA has just reported on the industry consultation, saying feedback 'supported the intent and encouraged us to expedite the delivery to provide a more flexible, modular licensing framework.' It's baby steps, but they are now working on a legislative 'proposal that would achieve the desired outcomes'.

In closing, Sheridan Austin and I will be presenting at the MRO Australasia Conference on 17 May on the LAME policy paper. If you're in Brisbane, would be great to see you there.

Cheers,  
Steve



Taking Australia to the World by bringing the World to Australia.

## Hydrogen power ... cont.

The Bonanza requires one 250kw fuel cell stack per engine, whereas the B1900 requires four. At a quarter scale, it's more cost effective, and still big enough to be relevant.'



Photo | The SA-1 Clean sheet aircraft. Image supplied, Stralis

Ultimately, Stralis is planning to produce a 'clean sheet' aircraft, building on the lessons learned from the B1900D-HE program and customer feedback. This aircraft will be optimised around hydrogen electric propulsion and improved operating costs. The SA-1 would have 38 seats, a range of 3000km and a maximum cruise speed of 313 kts.

Securing backing is key for start-ups such as Stralis. San Francisco-based start-up accelerator, Y Combinator has been supporting start-ups since 2005, and receives more than 10,000 applications for its biannual rounds. Criner and Stralis co-founder, Stuart Johnstone applied to Y Combinator for support last year and were delighted when their bid was one of the successful 2 per cent of applications. Y Combinator has an intensive three-month mentorship/training program, and Criner says their participation in the program 'has changed the course of the company, giving them access to global funding and support. 'We're gaining momentum. People are realising you can reduce both emissions and operating costs.'

'The world is going to decarbonise, and we want a seat at the table as an Australian aircraft manufacturing company.'

## Leapfrogging into the future

Jeremy Wang, co-founder of aviation/technology start-up, Ribbit, sees many parallels between regional aviation in Australia and his home country, Canada. Wang and co-founder, Carl Pigeon, established Ribbit in 2019. Canada and Australia are geographically vast, he says, with some challenging terrain, climate, and dispersed settlements, particularly of First Nations' peoples. Aviation is vital for such isolated rural communities. Ribbit want to improve access to aviation transportation, as well as assist regional airlines in meeting the challenges they face in serving those communities. 'One hundred and twenty thousand people live in isolated communities across northern Canada', he says. 'They rely on airlines: food, medicine, people, spare parts, everything is flown in.' And in Canada, as in Australia, 'pilots flying for regional airlines are on a revolving door – it's hard to have a stable workforce' when the metropolitan airlines attract regional pilots as they accrue experience and hours.

With these criteria in mind, they are working on taking existing aircraft and retrofitting them so

that they can be flown autonomously. 'We just build the technology which allows for autonomous flight – it can fit into any fixed-wing aircraft.' Their plan is to provide both aircraft and training to empower regional air operators and communities and help address the pilot shortage. They are looking at developing autonomy in two other aircraft: the unfortunately named Pipistrel Virus, and the Cessna 206, given the aircraft's availability, both the big aftermarket and spare parts, and suitability as a regional workhorse.

Trials have been underway since 2020, using a Quad City Challenge II, an ultralight, two-seater aircraft in the experimental category. They have a special flight operation certificate waiver from Transport Canada, similar to a Federal Aviation Administration waiver in the US. You can see video of the testing of autonomous taxiing, departure and take-off (with a safety pilot) on [Ribbit's YouTube channel](#).

Wang says their challenges arise in two areas – the technical and the regulatory. On the technical side, there is a lot of technology from the self-driving car field which is useful. 'The cost of cameras, lasers, inertial measurement units and other



## Leapfrogging ... cont.

sensors has come down' because of self-driving car developments. And then there's the transferable expertise. 'Out of our team, three people used to work on self-driving cars.'

However, there are some critical differences. 'Aircraft move faster, and although self-driving cars have technology to be able to navigate roads safely and avoid pedestrians, the cars can only "see" about 250 metres in front. In an aircraft flying at 250 to 300 kts, that goes by in a matter of seconds.'

On the regulatory side, the challenges arise in the different regulatory jurisdictions which must be navigated. 'CASA, the New Zealand CAA and Transport Canada have some of the most progressive regulations in the world when it comes to drones', Wang says. The FAA by comparison has significant difficulty in applying SORA (Specific Operations Risk Assessment) methodology to large drones – in contrast to Australia, New Zealand and Canada which seem to be more willing to be flexible.

'It has been interesting trying to bridge the two worlds of RPAS and traditional aviation – the RPAS world doesn't have the background of aviation safety and has much to learn from traditional aviation in that area, but traditional aviation moves so slowly.'

He is interested in learning more about the Australian regional aviation scene. 'We have a pretty good handle on the Canadian market,' Wang says, 'but we would be interested in speaking with regional operators in Australia.' You can contact him: Jeremy Wang  
[jeremy.wang@flyribbit.com](mailto:jeremy.wang@flyribbit.com)

## Alice takes flight

Named for the title character in Lewis Carroll's novel, *Alice in Wonderland*, Eviation's new clean sheet, all electric aircraft had its maiden flight in September last year. *Alice* will be available in three configurations: cargo, nine-seater passenger and six-seater executive.



The eight-minute test flight in Moses Lake, Washington went very successfully, Eddie Jaisaree, Eviation VP of commercial sales says. 'We're now processing all the data from the flight, looking at what we can do to improve and finetune the design.' This may include modifying its now fully composite airframe.

'As soon as this refinement is completed, later this year we will continue our ongoing engagement with the FAA to achieve Part 23 certification.' Eviation's goal is to have a fully certified product by the end of 2027, with the aim of producing up to 100 aircraft per year at their Arlington facility.

### Alice

**Max. range:** 250 nm, day VFR

**Max. operating speed:** 260 kts

**Payload:** 2500 lbs (commuter)

**Engine:** 2 x magniX 650

**Output:** 640 KW each

**Airframe:** fully composite

**Wingspan:** 19.2 m

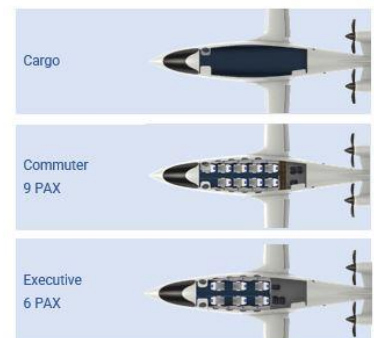
**Zero emissions**

**Recharging time:** 30mins  
(1-hr flight)

Jaisaree was at the Avalon Air Show, and reacquainted himself with Australian aviation, particularly the regional sector. In a previous role with Bombardier, he covered the Asia-Pacific territory, so he has a good understanding of Australian regional aviation's requirements.

'There was a lot of interest from regional operators,' he says, who recognise *Alice*'s potential for point-to-point regional operations. 'Given its fully composite airframe and electric engines, with fewer moving parts, the lifecycle cost and maintenance will be less.'

*Alice* is scalable; as lithium-ion battery performance improves, a larger 20–30-seat version will be possible. That's where Jaisaree sees hydrogen electric kicking in, which he says 'will be necessary for aircraft beyond 30 seats. Hydrogen is going through the research and development stage at the moment,' he says, so that is still a while away.



One of the many impacts of the COVID pandemic was the exponential growth in e-retail, and the demand for next-day delivery. 'Cargo is becoming a primary use for airplanes', Jaisaree says, and *Alice*'s cargo variant is poised to meet that demand.

Eviation's marketing strategy is to go global. 'We want to target all the early adopters, the first movers to go green around the world.' Currently, the balance of sales is 40 per cent in North America, 35 per cent in Europe, and 25 per cent in the Asia-Pacific region. Australian company, Northern Territory Air Services is one looking at flying *Alice*.

## SkyNet – real time data capture

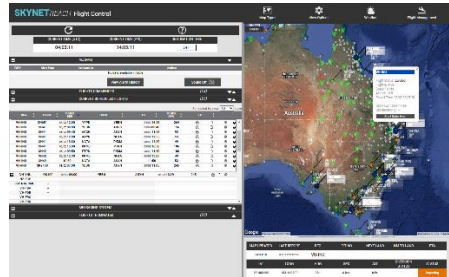
New RAAA members SkyNet Aviation offer a comprehensive web-based software umbrella ecosystem to support medium-sized fleet operators in managing their fleets efficiently. Paul Chevalier, a Canadian expatriate now based in Brisbane, has considerable airline operational experience, and brings that to bear in managing SkyNet's IT development. SkyNet is a web-based suite of programs which integrates airline operations into one readily trackable system.



At the heart of the SkyNet ecosystem is REACH Aero Day of Operations, which works by feeding networked live data to specialist applications and then cross-referencing their outputs against to-the-second aircraft tracking. REACH Aero comprises eight modules: flight monitoring; flight scheduling, crewing/rostering; flight dispatch; critical weather; fleet management business analytics; on-time performance and turn-around reporting; flight information display system; and engineering planning support.

The modules provide both real-time reporting, so you can know, for example, through the flight monitoring module where your aircraft are at all times, as well as having this data available for later analysis. With flight dispatch data, for example, you can optimise flight routes, saving fuel and related operational costs;

while the engineering planning support helps you to keep track of critical hours and cycle consumption.



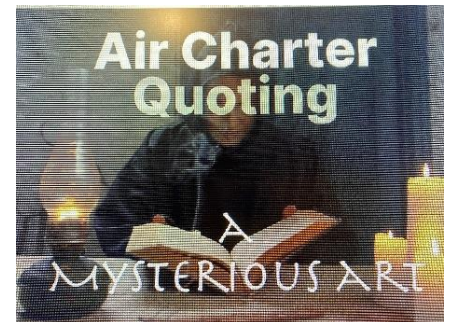
Chevalier says if operators are providing services using full paper flight data capture and billing, there can be frustrating delays in receiving payment. 'The aircraft logs a flight, the paperwork goes to the regional office, and possibly to corporate headquarters where it's processed, and then, for example, the client has 90-days to pay. So, in some cases, from the day you operate the flight until the billing cycle is complete, could be four to five months.'

SkyNet want to be the go-to platform in Australia for mid-tier operators and expand into the US and Europe. Chevalier says the platform has all the tracking and automation you need, and as a web-based application is very easy to navigate. 'Everything we do is in-house here in Brisbane,' he says. Using his operational experience in big airlines with big fleets, Chevalier 'translates the aviation needs to our software engineers and technology provider, and they develop it. If a customer needs a particular module we can build it, and if we think it's a good value-add to the suite, we would split the development cost.' As a small business, SkyNet is more agile, and can move quickly in response to customers' needs.

SkyNet's system is also fully compatible with other common software used in the industry such as Air Maestro and can also integrate with safety management systems software.

## Taking the pain out of quoting

One of the many challenges for charter operators is what Tom White, CEO of AeroQuote calls the 'mysterious art of quoting'. 'Often, it's the domain of one or two people in the organisation, everyone does it differently, and often, the vast majority of quotes don't come to fruition. Operators waste a good deal of time which could be much better spent elsewhere in the business.' Added to that, 'those specialists retire, or move on, and someone new has to learn the art.'



White has always had a love of aviation, beginning with gaining his student pilot licence at 16, and then flying smaller freight aircraft around Queensland and the Northern Territory. He pursued the opportunity to study micro-electronic engineering at Griffith University, and once qualified, took up an engineering role at Boeing Australia and in Seattle, working on several projects, including the Wedgetail Boeing 737 AEW&C project.

Returning to Australia, he founded a technology company, and later joined charter company Altitude Aviation, which he later sold to Air Link. It was owning and operating Altitude which was the inspiration for AeroQuote. 'We used to put so much effort in quoting on jobs, much of it went nowhere. As a charter operator, I saw there was a niche for building software to solve the problem.'

## Taking the pain out of quoting ... cont.

'AeroQuote makes quoting fast. A relatively unskilled person can use it, because there are lots of checks and balances in the software, such as checking schedule conflicts easily. But the real promise of AeroQuote is delivering a great looking, online quote to a customer in minutes, not days. 'By expanding who can generate quotes, you mitigate the key person issue.'

White says AeroQuote is 'a global first, incorporating just about every registered and private airport in the world. It pulls together proprietary information from about 16 databases: for example, airport data from about five different sources and world fuel prices. It's also highly configurable, so you can include custom ALAs etc.

'It's very comprehensive - there are live feeds of fuel price data, so that you get the real cost of the job. There's also runway information, so that you can check whether the aircraft can land at the suggested runway, and whether it's the correct length for the aircraft. The data is updated every night.'



The software has been growing organically over the past two years, White says, and is being used by real customers. 'It's completely customisable by charter operators, so the online and PDF quote that gets presented to the customer is all about the operator, not AeroQuote. Your quote is the first impression the customer gets of

your operation, and is a chance to convey your professionalism, your safety standards and your aircraft.'

'AeroQuote is still a start-up business, so I'm keen to talk to charter operators about their impressions, and any additional features they'd like to see. You can contact us via the [website](https://www.aeroquote.com), or [tom.white@aeroquote.com](mailto:tom.white@aeroquote.com).'

## Introducing ... our new membership officer



Natalie Gane has just joined the RAAA in the role of Admin/Membership Officer. Nat comes to us from out of the industry, bringing with her 20 years of experience in project management, policy and governance, executive administration, marketing, business research and human resources.

Her working career has seen her in varied roles in registered clubs, travel agencies and an engineering firm overseas. However, most extensively she has been involved in driving changes in regulation, stakeholder engagement (community and government) and tackling emerging trends faced in the funeral industry. While at Rookwood General Cemetery, the largest cemetery in the Southern Hemisphere, and the largest Victorian-era cemetery still operating in the world, she worked across the organisation n

governance, stakeholder engagement, and driving the most successful Rookwood *Hidden* sculpture exhibition in the exhibition's 10-year history.

Nat is a private pilot and a member of the Australian Women Pilots Association and Women in Aviation. She is currently working towards her gaining her commercial pilot's licence.

## Welcome to new members

We are happy to welcome the following companies and individuals as members of the RAAA and look forward to a long and productive association.

### Ordinary members

Eviation

**Eddie Jaisaree VP Commercial Sales**



*Eviation's mission is to 'To build beautiful electric airplanes using advanced technology and impeccable design, imagined and built by a committed and expert workforce'.*

<https://www.eviation.com/>



*(See the article page 4 {Autumn 2023} of RAAA News)*

## Stralis

**Bob Criner, CEO**



Stralis was founded in 2021 to decarbonise air travel, improve passenger experience and create a world-class aircraft manufacturer in Australia.



<https://stralis.aero>

(See the article on the front page {Autumn 2023} of RAAA News)

## Associate members

AeroQuote

**Tom White, CEO**



AeroQuote is air charter software built for large and small operations. It's the easy way to produce beautiful and accurate quotes for air charter operators and charter brokers. Price your quotations more accurately, see all your costs and generate high-quality quote documents in just minutes.



<https://www.aeroquote.com/>

(See the article on page 6 {Autumn 2023} of RAAA News)

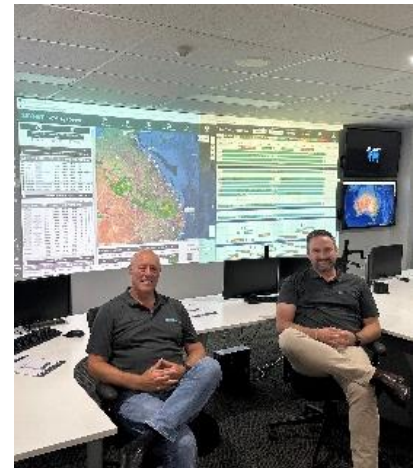
## SkyNet Aviation

**Paul Chevalier, General Manager**



In any aviation company, your controllers, corporate officers, team leaders, senior engineers, pilots and line managers must make the right judgment calls on operations, contracts and cash flow.

To do this, they need the clearest possible picture of every contingent factor – internal and external – of what's going on in the air and on the ground. SkyNet Aviation exists to develop solutions that give it to them.



Jon Davis (l), SkyNet Aviation CEO with Paul Chevalier in front of the operations control centre display showing SkyNet REACH. Image supplied

<https://skynetaero.com/>

(See the article on page 6 {Autumn 2023} of RAAA News)

### Want to feature in the next RAAA News?

We're always on the lookout for member stories. Next issue will be Winter 2023, due out in early June.

Email us with your story idea no later than 30 April: [administration@raaa.com.au](mailto:administration@raaa.com.au)

# Looking for work?

[raaa.com.au/jobs](https://raaa.com.au/jobs)

