

NEW ZEALAND

MAY 2020

# AVIATION NEWS



## Aviation medicine

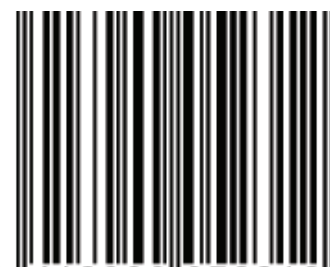
Bert Pither

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In a scene repeated throughout the world, Air New Zealand DHC-8-Q300s are parked at Nelson Airport. The aviation and travel industries are among the hardest hit by the coronavirus, the full effects of which will be unknown for some time yet.

# Airlines disrupted by microorganism

The big blow to New Zealand’s domestic operations came on 2 April when Air New Zealand announced the largest cutbacks to its operations, setting the tone for the coming month.

Night freight operations are continuing domestically, while trans-Tasman freight operations have continued with dedicated aircraft and the need for belly freight in Air NZ’s limited trans-Tasman operations.

So far \$1.7m has been fast-tracked from the government’s \$600m aviation support package to be distributed to airlines servicing New Zealand’s offshore island communities, including the Chatham Islands, Great Barrier Island and Motiti Island near Tauranga.

Services to Great Barrier Island have continued with daily flights, the Auckland Council guaranteeing one flight a day to ensure essential services, products and workers get to the largest Hauraki Gulf island. Great Barrier is highly dependent on small aircraft flights and less frequent ferries to access essential products and services. The island has a population of about 950 and its median household income levels are well below Auckland’s.

Air Chathams has welcomed the funding, saying it will enable it to run around three services a week for two to three months to the Chathams.

But regional New Zealand sees no aircraft services, with Air NZ adjusting its domestic network with the entire country having been at Alert Level 4 for four weeks. The airline is operating a limited domestic schedule to enable essential travel only and to keep air freight moving. Overall, domestic capacity reduced by 95 percent from pre-Covid-19 levels.

Prior to the pandemic, Air NZ operated more than 400 domestic flights daily, and while domestic travel is still an option, it is extremely limited. The airline has estab-

lished a process to operate ad hoc domestic charter flights at the request of the government. These flights can be undertaken to all domestic airports within New Zealand and within a matter of hours.

Regional airports around New Zealand have had no scheduled commercial flights, and Jetstar also suspended all domestic operations in New Zealand until the country moves to a lower coronavirus alert level.

International flights are down to a

handful, with Air NZ operating a limited international network until 31 May to enable essential travel and to keep air freight moving through key cargo corridors to North America and Asia. Overall, international capacity has reduced by 95 percent from pre-Covid-19 levels.

Samoa and Tonga are currently not permitting international flights, but if these restrictions end, Air NZ is likely to operate one return service per week from Auckland.

# DHC suspends production

De Havilland Canada last month suspended its Dash 8-400 and Series 400 Twin Otter production, announcing it had made its decision in response to reduced airline activity around the world. The aircraft builder is, however, continuing to support existing operators of these aircraft.

CEO David Curtis said regrettably the decision to suspend operations would have a knock-on effect for the company’s staff as well as for Viking Air which operates under the same parent organisation. de Havilland was expected to cut jobs for around 65

percent of its staff. In a similar vein, Viking Air said 40 percent of its workforce would be affected.

Mr Curtis said de Havilland would focus its efforts on supporting customers’ existing in-service fleets and delivering the other services the two companies provide to the global aviation industry.

“We will remain in close contact with customers and continue to monitor the evolving situation and will make further adjustments to our operations as and when required.”

## An important New Zealand Aviation News announcement

Despite the Covid-19 virus and these troubling times in lockdown, NZ Aviation News is publishing this May 2020 edition—but we will not be printing it.

Our publication is classed as non-essential, and with the uncertainty of when Level 4 lockdown will be decreased to the stage where we are able to print and distribute it through our retailers again as normal, we decided not to take the risk of preparing our publication for print.

Instead, this is a purely digital May issue for online distribution.

This digital issue link will be emailed to all current subscribers for whom we have email addresses. Any readers wanting to share your May issue link with family and friends are encouraged to do so.

All current printed copy subscriptions will be extended a month to make up for the missed printed May 2020 issue.

Through this lockdown the aviation industry is very quiet, so May contains human interest and historical articles as well as reports on those events that managed to squeak in before the lockdown.

A special thanks to all our contributors and advertisers who are supporting us for this digital issue while we are all in lockdown. Your support in keeping our publication alive through this situation is greatly appreciated by NZ Aviation News and our readers.

We are hoping that by the time the June issue is ready at the end of May, most of the country is back up and running and we will be able to print and distribute this edition as normal.

John King  
Editor

## The Front Page:

Richard Craddock flies Harvard NZ1066, painted in US Navy colours although its sole military operator was the RNZAF, against a backdrop of Mt Aspiring. Its present home, with Classic Flyers in Tauranga, is in complete contrast. Front page story on page 22. Photograph © John King

## NEW ZEALAND AVIATION NEWS

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43rd year of publication

Aviation News is published by: New Zealand Aviation News Ltd. PO Box 10314, Dominion Rd, Auckland 1446, New Zealand Ph: 09 307 7849

ACCOUNTS ENQUIRIES TO: New Zealand Aviation News Ltd. PO Box 10314, Dominion Rd, Auckland 1446, New Zealand Ph: 09 307 7849 accounts@aviationnews.co.nz

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Deadline for editorial and advertising material for June 2020 issue is Monday 18 May. Publishing date is Friday 29 May.

Aviation News is published 11 times a year, printed by Inkwise, Rolleston, and distributed by Ovato NZ. Registered by POHQ for transmission by post as a magazine.

ISSN 1172-0822 (Print)  
ISSN 2324-3511 (Online)

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calendar

John King

MAY

**3 May**  
**Shuttleworth Season Flier (VE Day)** Old Warden, Bedfordshire. www.shuttleworth.org/events

**15–17 May**  
**TailDraggers 2020** Bridge Pa and Waipukurau. Jailbar bombing, STOL, conviviality. Contact Ross Macdonald Ph: 021 262 9550 (YP) or Stephanie Eilers Ph: 021 769 963 (HS)

**23–24 May**  
**Duxford Air Festival 2020** Duxford, Cambridgeshire. www.vfw.org.uk/visits/iwm-duxford/airshows

**27 May**  
**NAC Anniversary Commemoration Luncheon** Classic Flyers Museum, Tauranga. 1200 hrs. Another enjoyable afternoon catching up with old friends and colleagues. Seat available in DC-3 Skyliner ZK-AWP AKL-TNG-AKL for event. Bookings by 11 May essential. Contact Graham Lister Ph: 021 195 8356 E: grumpa356@gmail.com

**29 May–1 June**  
**NZAWA 60th Anniversary Rally** Christchurch. Annual Association of Women in Aviation competitions, social events and a PM. Contact Pamela Adams E: c.niagara@nzawa.org.nz or Pam Collings Ph: 03 312 5589, E: pamcollings@scorch.co.nz www.nzawa.org.nz

JULY

**11 July**  
**Royal Navy International Air Day** RNAS Yeovilton, Somerset. Celebrating 75th Anniversary of VE and VJ Days. An air display focused on saluting the past and showcasing the present. www.fleetairarmoa.org

**11–12 July**  
**Flying Legends Airshow** Duxford, Cambridgeshire. www.iwm.org.uk/visits/iwm-duxford/airshows

**20–24 July**  
**Farnborough International Airshow 2020** Farnborough, Hampshire. www.farnborough.com

**20–26 July**  
**EAA AirVenture Oshkosh 2020** Wittman Field, Oshkosh, Wisconsin. Billed as the World’s Greatest Aviation Celebration. www.eaa.org/en/airventure

AUGUST

**5–6 August**  
**CAPA Australia Pacific 2020 Aviation Summit** Adelaide. A critical platform for aviation executives to share their insights on airline policy, the competitive market outlook and the issues and challenges facing the region. E: events@centreforaviation.com

SEPTEMBER

**25 September**  
**A Gathering of Moths** Old Warden, Bedfordshire. Celebrating the centenary of the incorporation of the de Havilland Aircraft Company. www.dhmothclub.co.uk

OCTOBER

**14–16 October**  
**RotorTech 2020** Brisbane. Exposition and conference for Australia, New Zealand and the Indo-Asia-Pacific region. www.rotortech.com.au

**16–18 October**  
**Tiger Moth Club Spring Fly-in** Taumarunui. Annual salute to the allegedly warmer season’s flying. Contact Graeme Wood Ph: 027 293 2318 E: ruffchops@gmail.com

**30 October**  
**RAeS NZ Division Annual Symposium** James Cook Grand Chancellor Hotel, Wellington (or via Zoom) and annual awards dinner. Theme: Sustainability. www.raes.org.nz/symposia

2021 FEBRUARY

**23–28 February**  
**Australian International Airshow and Aerospace & Defence Exposition** Avalon Airport, Geelong, Victoria. Celebrating the RAAF’s centenary. www.airshow.com.au/airshow 2021

Visit the Aviation News website for a full listing of aviation events nationwide





Jordan Tan

## Luftwaffe A319 conversions

The German Air Force (Luftwaffe) has converted two of its Airbus A319s into transports for intensive care patients who have contracted Covid-19. Both aircraft have had interiors removed and have been equipped with the facilities to move two high-dependency patients at a time.

The specific aircraft converted by the Luftwaffe are Airbus A319CJs (Corporate Jets) specifically designed for low capacity, medium-haul flights and usually seating up to 44 passengers. These were selected for conversion as they were already fitted with four additional fuel tanks giving them a 7600km range, an extra 700km.

As this issue of *Aviation News* is being finalised, across the Tasman a

similar undertaking is being proposed. Rockhampton-based Cross Asia Pacific, a company specialising in emergency medical support services, has approached the federal government for funding to convert a 30-seat jet, of a type not yet announced, to transport Covid-19 patients.

It is proposed to equip the aircraft with beds and medical equipment for two Covid-19 patients on life support, seating for six other less critical patients and five medical staff. The aircraft would be used to transfer patients from rural areas to larger city hospitals for treatment.

The Australian government has indicated it is in favour of the project and says funding is available for such a scheme.

## Drone registration coming to Australia

The Australian CASA recently announced that drone registration and accreditation will soon become compulsory unless operating in a CASA verified model airfield and the drone weighs less than 250 grams.

The serial number, make, model, weight and type of any drone weighing in excess of the 250 gram limit will need to be registered with CASA. As well, the operator will need to be at least 16 years of age and possess an

aviation reference number (ARN). As yet the cost of registration, which must be renewed every 12 months, has not been announced.

Drone owners/operators will also have to prove they have knowledge of the standard operating conditions for drones and receive CASA accreditation. This will involve viewing a video followed by a quiz and, if the applicant is successful, will be issued with a certificate.



via AIAL

The coronavirus pandemic has seen some airliners unfamiliar to New Zealand skies as international carriers turn their attention to the repatriation of their nationals as most countries enter some form of lockdown. Lufthansa has used A380s (above) while a LATAM B787 (left) loads at Auckland.

## Heavyweight repatriation flights

Lufthansa Group Airlines has been running a schedule of 12 repatriation flights from Auckland and Christchurch Airports to Germany, Switzerland and Austria.

On 10 April a Lufthansa A380, flight number DH357, completed a flyby over the Waitemata Harbour and greater Auckland.

Scott Tasker, Auckland Airport's GM Aeronautical Commercial, said the flyby was a wonderful tribute to the many Kiwis who had helped stranded German travellers trying to get home.

"These repatriation flights are able to happen thanks to the goodwill and efforts of a range of organisations getting involved and playing their part. Our team at Auckland Airport has been working hard alongside border agencies and ground handlers for a couple of weeks now to help bring these planes in and get those people home.

"It's an emotional time and we're proud of our frontline staff who have done so much to help these travellers."

On 20 April 184 New Zealanders arrived in Auckland from Manila aboard Philippine Airlines flight NZPR 218. By that date the airport had helped about 10,000 travellers, mostly outbound, with repatriation flights since the outbreak of Covid-19.

In April 2019 Auckland International Airport saw about 58,000 passengers a day. That number is now down to around 3500, the vast majority travellers leaving

New Zealand and returning home overseas. The few passengers arriving at Auckland must now undertake a minimum of 14 days of managed isolation or quarantine in an approved facility on arrival.

Another repatriation service, LATAM flight LA1163, was a B787 with around 60 passengers on board. The flight originated in Lima, Peru and connected via Santiago, Chile.

Scott Tasker said with commercial services between New Zealand and South America now suspended due to the outbreak of Covid-19, the government-chartered repatriation flight provided the only chance for Kiwis to return home.

"We still have a limited number of commercial services to Asia, the Middle East, Australia and the United States, but this was it for South America. So it's great to be able to welcome these New Zealanders back home in these extraordinary times, and we're proud to be playing our part.

"A lot of work goes on behind the scenes between a multitude of different organisations to enable these repatriation flights, and together we have worked hard to develop a smooth process for managing services. Each new service brings different challenges, often at very short notice, especially for airlines such as Swiss International Airlines and Lufthansa which are new to New Zealand."

## Some recovery started

The Covid-19 pandemic and international lockdowns have proved disastrous on many fronts, particularly aviation and travel, but there is a ray of sunshine amidst all the gloom.

As indication of resilience in the New Zealand aviation industry, flights of export produce are once again leaving our shores for China, and Invercargill Airport, which is all set up but has no scheduled flights, is preparing to resume freight flights.

The airport board is working at establishing a regular freighter out of Invercargill Airport to help exporters. The airport's management has teamed up with Great South, Southland exporters and other businesses to work out a plan to resume planeloads of freight out of the city.

Invercargill Airport general manager Nigel Finnerty says discussions started not long after the lockdown and will continue until it is known what immediate demand there is regarding freight. He wants to hear from anyone with freight needing to be sent overseas, within New Zealand or wanting it brought to Invercargill.

This approach appears to be paying off, and Mr Finnerty says there has been considerable interest from exporters across the board, including those who need perishable goods, such as seafood and meat, moved quickly.

"If we could get a regular freighter flying out of Invercargill that meets up with some of the international services to Australia, China and other parts of Asia," he says, "I'm sure that would be really good for Southland exporters."

"Once we understand what the demand is, we'll look at seeing how we can make that connection to those flights."

He says the support from Great South is a big help as it has a good understanding of what is being exported or sent north from Southland businesses. He is adamant that

Invercargill Airport wants to contribute to Southland's recovery from the lockdown.

"We're a strategic asset, an important part of Southland, and if we can help Southland get back on its feet and move through the kick-start recovery phase, we'll be there doing that and supporting the people."

In the meantime, the lucrative southern lobster industry has resumed its exports to China with the aid of Air Chathams. This enterprising second-level company is flying rock lobsters (more familiar to New Zealanders as crayfish) to Auckland for onward flights to China.

The New Zealand lobster industry was among the first and hardest hit by Covid-19, with the export of live lobsters from New Zealand stopping in late January when China closed its restaurants and freight to the country was restricted.

However, Te Anau-based Fiordland Lobster Company, which exports about 40 percent of New Zealand lobster exports to China, restarted servicing its Chinese market in mid-April and with the aid of Air Chathams, customers in Shanghai are once again receiving their rock lobsters.

New Zealand's live lobster (crayfish) industry is worth around \$320m annually and directly and indirectly employs 2500 people.

While several North Island companies had exported small numbers of lobster to China in February and March, the industry is now getting started properly again, ahead of Labour Day holiday celebrations in China when lobster is traditionally popular. Restaurants in China have reopened, but with less seating, and aircraft are flying from Auckland to Shanghai.

Southland Chamber of Commerce president Neil McAra, says the resumption of live lobster exports gives hope to other industries that China is looking to import more product.



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Air New Zealand's first A320, ZK-OJA, is about to be handed over by Airbus at a ceremony in Toulouse in September 2003. It is still in service but with Avion Express.

## Are airline fleets shrinking?

US aircraft part-out specialist TDA has claimed the “youngest ever” Airbus A320 acquired for disassembly. The 2007 vintage airliner, previously operated by Alaska Airlines, will be dismantled at the Pinal Park facility in Arizona.

It is only slightly younger than a 12-year-old A320 that TDA acquired for teardown in 2016, although such records are likely to be broken with increasing frequency over the coming year as some airlines fail and others shrink their fleets to meet what is widely expected to be reduced post-Covid-19 demand.

The oldest serving Air New Zealand A320-200 is ZK-OJB, delivered on 26 September

2003, and the airline's first A320, ZK-OJA, was handed over in Toulouse on 15 September 2003. Placed into storage in February 2019, it was then delivered to Avion Express on 4 April 2019 and is still in service.

These new times could mean a glut of used serviceable material for the aftermarket, which should in turn lower spare and replacement parts expenses for airlines, a small comfort at best.

Narrow-body airliners such as that recently acquired by TDA were the core of the value proposition for mid-life aircraft investors in the run-up to the crisis, so many eyes will be focused on their valuations through and after the pandemic.

## SAA among the first to go

One of the first big airline shutdowns will see state-owned South African Airways laying off its entire workforce and facing liquidation after the government refused to provide the 86-year-old carrier with additional financial aid, according to media reports.

Administrators believe that a successful turnaround is unlikely, and the airline has offered severance deals to all 4700 employees from the end of April, according to a proposal seen by *Bloomberg*.

The Department of Public Enterprises said in a statement, “There are discussions with the unions [regarding] the current South African Airways business model, success of the business rescue process and the best possible outcome for the airline's employees.”

SAA has been a loss-making business for years and last turned a profit in 2011 but has been kept afloat by the government.

In December the airline was taken over by administrators in a rescue bid to turn the airline around.

In April it was revealed that the government told administrators they could not expect further funding beyond what had already been promised and that the airline had to find cash elsewhere.

While SAA has been operating some cargo and charter flights in recent weeks, the Covid-19 pandemic has forced it to cut all passenger flights and ticket sales have evaporated.

Administrators are tasked with selling SAA's assets, including aircraft and two valuable slots at London Heathrow Airport. The current SAA fleet comprises 39 aircraft, including Airbus A319s, A320s, A330-200/300s, A340-300/400s, A350-900s and Boeing 737-300Fs.

## Northern base expansion

The Northern Territory's RAAF Base Tindal is set to receive a \$A1.1bn (\$1.16bn) upgrade. The majority of the money, \$A737m, will be spent extending the runway and creating a new fuel storage facility to allow for larger aircraft to call it home. Once complete, it is expected to house some of the RAAF's 72 new F-35 Joint Strike Fighters as well as USAF long-range bombers.

In announcing the project, Prime Minister Scott Morrison said, “It will be integral to our alliance with the United States and will increase the reach of air force capabilities in the Indo-Pacific. As part of these upgrades, RAAF Base Tindal will be able to deliver enhanced air-to-air refuelling and air support capabilities, ensuring we can support critical ADF operations—everything from air combat missions through to responding to natural disasters, both at home and throughout our region.”

## Regional jet makes progress

Flying a sixth Japanese SpaceJet prototype on 18 March, Mitsubishi Aircraft took a significant step toward certification of the regional jet, although it is not saying when exactly it hopes to reach that milestone.

The flight came 1½ months after the company announced a sixth programme delay, and for the first time it didn't name a target date for completing development.

An additional \$A437m will provide critical base infrastructure upgrades, such as engineering services and including power, water and sewerage, as well as 108 new live-in units for ADF personnel.

Defence Minister Linda Reynolds said, “The 2016 Defence White Paper identified northern Australia as strategically important, both for national defence and as a forward base for regional engagement.”

RAAF Base Tindal, originally known as Carson's Airfield, is 15km outside Katherine and 320km southeast of Darwin, and was first constructed in 1942. It is considered one of the RAAF's key sites, and its personnel make up almost 25 per cent of Katherine's population of 10,000.

It received its first significant upgrade in 1984 when it was declared an operational air force base, with its official opening in October 1988.

Mitsubishi Aircraft expects to narrow down its outlook once the new prototype has joined the programme's flight-testing operation in the US at Moses Lake, Washington.

When the twin Pratt & Whitney PW1200-powered SpaceJet programme was launched in 2008, first delivery was scheduled for late 2013. All Nippon Airways is the launch operator.



## Virgin packs its bags

During most of April, Virgin Australia's fate was discussed at length, with the airline seeking a \$A1.4bn (\$1.48bn) bailout from the federal government. In Australia the airline has stood down most of its 10,000 staff and related workers, and has all but ceased trading.

Its subsidiary Tiger Air has been totally disbanded, and Virgin operations in New Zealand have totally ceased outright.

Virgin's request to the government for the sum has created some acrimony between it and arch-rival Qantas, which has accused Virgin of being badly managed. Although not in dire straits itself, Qantas has expressed an expectation that if Virgin receives the \$1.4bn loan, Qantas should then commensurately receive \$4.2bn to avoid a perception of unfair favouritism to an airline that is, after all, foreign-owned.

On 17 April the federal government announced it was providing \$A165m (\$174m) to Qantas and Virgin to run skeleton services on 60 routes between

capital cities and some regional centres for the next eight weeks. This has resulted in Virgin recalling 200 personnel to implement the funded services.

International connections will also be restarted to London, Los Angeles and Auckland. The government has also pointed out that it has already provided \$A198m relief for regional airlines, and previously provided \$A715m relief in fees and taxes to the airlines.

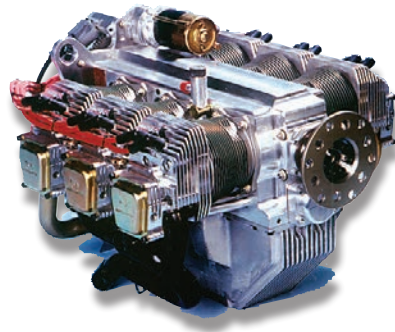
But on 21 April Virgin went into voluntary administration after it ceased trading on the stock exchange six days earlier.

The Australian government has declined to throw the airline a lifeline. Virgin was already in dire financial straits prior to the Covid-19 pandemic, recording a \$A653m (\$690m) loss in 2018.

It will continue to operate for the next eight weeks with a skeleton staff. Analysts predict equity groups might step in and pare the airline down to a model similar to its Virgin Blue days when it emerged as a LCC.

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Boeing returned first to military aircraft production, including the KC46 Pegasus tanker, seen here refuelling an A-10 while still under test. Work on civil airliners started later last month.

## Boeing resumes work

After standing down its entire workforce in late March, Boeing has resumed work at Puget Sound and Moses Lake in Washington State due to allocated funding for military projects being released in early April. The USAF authorised the release of \$US924m (\$1537m) which had been frozen due to defects mainly to do with 33 KC-46 tankers it had ordered.

Boeing recalled 2500 personnel on 11 April to not only remedy the KC-46 Pegasus issues but also to resume work on P-8 maritime surveillance aircraft and to manage the ongoing maintenance of parked B737 Max airliners. Related support teams and laboratory personnel will also be part of the mix.

The KC-46 has featured in the news due to refuelling problems, defective components and, regrettably, a repeat of tools and objects being left within the airframes of signed-off aircraft. Refuelling issues have been twofold—excessive fuel leakage during transfer and the remote vision camera having a blind spot, making inflight fuelling hazardous both for the tanker and the client aircraft.

Technical upgrades will address the camera, related processors and the visual displays that assist refuellers within the tanker. A revised design of the fuelling system is expected to remedy the leaks experienced, while cargo restraint locks coming unlatched during flights are also scheduled to be resolved.

Washington has been hard hit by Covid-19, with infections surpassing 10,000 in that state at the time of writing. Boeing has stipulated that workers will don protective apparel and face masks while on site as a

precautionary measure.

Meanwhile it was announced during this item's preparation on 17 April that Boeing now intends to also resume work on its commercial aircraft at Puget Sound, with 27,000 employees set to return to work on 20 April.

The workforce was stood down on 25 March after coronavirus entered the Boeing works and infected a number of employees, with one unfortunately dying as a result of the illness on 22 March.

Puget Sound opened 20–22 April and resumed work on B737, B747 and B777 programmes. Work on the B787 was due to begin on 23 April, reported the *Seattle Times*, with work also scheduled to resume on the B737 Max at the Renton facility, with Boeing optimistic that the controversial airliner will be back in the air by June/July.

Boeing is satisfied that its software fix for the infamous MCAS will meet FAA requirements; and the aircraft's wiring remedy (to prevent short circuiting and possible control surface deflections) will also lead to certification. The manufacturer intends starting a modest production run of the Max just prior to the anticipated recertification date.

These bold predictions are not yet etched in stone.

A number of precautionary measures, now familiar to us all, will be implemented at Boeing. As well as the usual personal actions, temperature scanners and other sensing equipment have been installed and a detection, identification and isolation strategy has been introduced.

It's predicted that start-ups are now also likely with independent companies that are



Peter Clark  
While Fiji Airways' domestic operations have stopped, its A350 is busy undertaking repatriation flights and carrying cargo to and from Australia, including vital medical equipment.

## Island services retract

A big blow for the islands of Fiji was the 30 March cessation of Fiji Link's, Fiji Airways' subsidiary, domestic operations to all outer islands in line with government directives. The only Fiji Link flights last month were between Nadi and Suva, operating at a reduced frequency.

The airline stands ready to assist if charter flights are required for carrying essential supplies to Vanua Levu and outer islands.

For its part, parent Fiji Airways suspended all international flights until the end of May but was able to operate several international repatriation flights. On 5 April

it operated a cargo-only A350-900WXB Nadi–Sydney service, marking its first dedicated freight operation, carrying 41t of fresh produce. On the return sector the airline assisted the Fijian Ministry of Health by bringing back 11.1t of medical equipment donated by UNICEF, in the form of temperature screening tents, carried free of charge.

Fiji Airways says the freight flight had a full shipment of fresh produce and will greatly assist growers, producers and exporters to continue their business, support the economy and support the livelihood of Fijians dependent on these sectors.

## Bombardier sued by Australian

Australian businessman Tim Roberts, head of Perth-based AVWest Aviation, has begun legal action against Bombardier after he alleged the Canadian aircraft builder reneged on a deal which would have seen his company become one of its major sales agents for executive jets.

Documents filed with the court as part of the dispute show Mr Roberts' company

a part of the Boeing supply chain, and the knock-on effects of such business activity could help kick-start the US economy.

Boeing has so far been resistant to accepting a grant from the government due to the benefactor's insistence that it take an equity stake in the recipient's business, as with the country's airlines.

Instead, it is reported, Boeing is amenable to the idea of taking out a defined loan and thereby retaining its autonomy, and analysts say this course is considered more likely.

Only the Washington plants are open thus far, with the South Carolina facility remaining closed with no resumption date yet predicted.

became a prolific distributor of Bombardier business jets, generating millions of dollars for both the aircraft manufacturer and AVWest Aviation.

It is claimed Mr Roberts helped Bombardier when it fell into financial difficulties during the global financial crisis, with the Australian company greatly expanding Bombardier's penetration into Asia and Australia following an agreement reached in 2009.

Mr Roberts and AVWest Aviation claim that Bombardier subsequently abandoned the terms of its oral agreement following a management shake-up in 2015.

The lawsuit comes at a particularly difficult time for Bombardier which has been gripped by debt in recent years and the resignation of president and CEO Alain Bellemere, who was hired to turn its fortunes around. Recently Bombardier sold its stake in the A220 airliner to Airbus and the Quebec government and disposed of its rail business to French interests.

Mr Roberts and AVWest Aviation are seeking \$US429m (\$701m) from the Canadian aircraft builder.



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# Shady deal put to rest

A controversial project, involving Sir Richard Branson's Virgin Australia and two somewhat secretive Chinese conglomerates linked to the Chinese Communist Party, to establish a flying school for Chinese students at the Australian Defence Force Tamworth NSW base has finally been abandoned after a local facilitator in the deal was run out of town.

Questions into the establishment of a proposed \$A30m (\$31.5m) flight school at the Australian Defence Force Flying Training School at Tamworth, northern NSW, first surfaced in 2018 when Tamworth's mayor gave a differing account of Chinese involvement in the project to that offered by his council's general manager.

It was also revealed around that time despite the NSW government having heavily invested taxpayer money in the project, the State Premier's office denied knowledge of the venture.

Further murkiness surrounding the proposed Tamworth flying school emerged almost six months after the deal had officially been announced. A media report surfaced revealing Virgin Australia appeared to have secretly partnered with the two Chinese companies but had not told the government or the public.

Despite holding a number of formal meetings and Virgin claiming to have been "completely transparent" about the Tamworth proposal, the NSW government, local federal member for the region and the Tamworth Regional Council all stated they had no inkling of foreign involvement.

Around that time national security experts, including Technical Professor John Fitzgerald at Swinburne University, described Virgin Australia's secretive deal as "extremely concerning".

They warned that the airline's claim that it was not in business with at least one of the questionable Chinese companies signalled

it had either deliberately made false claims or that it was unaware who its business partners were.

Virgin strenuously rejected allegations of a cover-up, at the same time running what appeared to be an aggressive campaign to prevent journalists further investigating the matter.

However, searches of company databases revealed claims made by the media regarding Virgin's Chinese partners in the venture to be accurate.

Professor Fitzgerald said that it had him "baffled" that no-one had called Virgin to account for its corporate association with the Chinese investors who were also involved with Beijing's Belt and Road global infrastructure roll-out.

That, he said, was seen by many experts as being used to advance its military interests by stealth.

"This is a baffling lack of security," said the professor.

More recently it was reported that a businessman working with the consortium was facing a lengthy jail term in Australia if convicted on multiple charges, including threatening and attempting to influence witnesses and with intimidation and threatening harm.

The businessman, who is reputed also to have interests in gaming casinos in Macau, is due to face court soon and was instructed by the court to leave Tamworth and reside in Sydney until his case is heard.

The site Virgin Australia and its partners were seeking to gain control of is a specialised military training facility that for the past three decades has been the heart of the ADF's flight training operation to train RAAF recruits in conjunction with British defence company BAE Systems.

Virgin's proposal for the mammoth flying school would have seen up to 500 Chinese students on the air base at any one time.



A USN P-8 Poseidon is framed at Ohakea by an RNZAF P-3 Orion, the type to be replaced from 2022.

## Next generation started

The US Navy has awarded Boeing a \$US1.5bn (\$2.5bn) production contract for the next 18 P-8A Poseidon aircraft. The contract comprises eight examples for the US Navy, six for the Republic of Korea Navy and four for the RNZAF.

New Zealand and South Korea are acquiring their Poseidons through the Foreign Military Sales process and will receive the same P-8A variant designed and produced for the USN. The RNZAF is expected to begin receiving aircraft in 2022 and the Republic of Korea Navy the following year.

The P-8 is a long-range multi-mission

maritime patrol aircraft. A military derivative of the B737 NG, the P-8 is said to combine superior performance and reliability with an advanced mission system to ensure maximum interoperability in the battle space.

The P-8 is militarised with maritime weapons, a modern open mission system architecture and commercial-like support for affordability. The airframe is modified to include a bomb bay and pylons for weapons—two weapons stations on each wing—and can carry 129 sonobuoys. It is also fitted with an inflight refuelling system.



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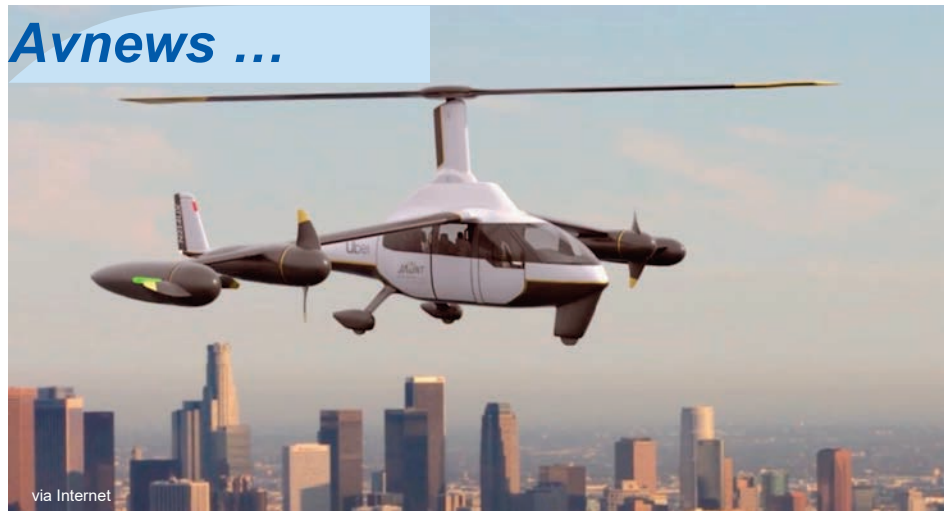


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Not quite a gyrocopter, the ROSA uses a powered main rotor for vertical lift but not forward flight.

## New design revives old concept

Yet another e-VTOL developer has signalled it is about to fill the skies with a battery-powered vehicle, this one harking back to a concept first trialled in the 1950s.

Jaunt Air Mobility, a 2018 start-up, recently released details of its reduced operating speed aircraft, or ROSA, which derives its vertical lift from a powered rotor but is propelled forward by two electric motors mounted on abbreviated wings. The wing-mounted powerplants prevent the aircraft from spinning while hovering, and as the aircraft moves forward, gaining speed, the rotor unloads as the wing produces lift.

The ROSA is a development of the Carter-Copter after Jaunt Air acquired all rights to the Carter Aviation Slow Rotor Compound. Carter's four-seat personal air vehicle demonstrator has so far completed over 100 hours of flight testing which includes 1000 takeoffs and landings.

Another key benefit of the ROSA, says its designer, is low regular maintenance requirements. The top rotor uses none of the bearings or pitch links common in

helicopters, instead using elastomers for pitch control. This simple, clean, bearingless design should permit extended periods between inspections.

In addition the e-craft features what Jaunt describes as its LevelFly technology whereby the entire top pylon holding the main rotor tilts, allowing the cabin to easily be balanced no matter how many passengers are on board or where they sit. This, it says, will also help keep the cabin comfortable during transitions between VTOL and winged flight.

ROSA's developer says the craft is able to make a safe landing using autorotation in the manner of a helicopter if all power is lost, with the rotor maintaining sufficient lift to bring the aircraft down gently and controllably.

Certification-wise, Jaunt Air says, ROSA fits an existing category as a gyrodyne which will enable it to be certified under FAA Part 29 rotorcraft requirements, despite the fact that there hasn't been a gyrodyne certified in the US for several decades.

## IATA figures all bad

During the second week of April IATA came out with figures from new analyses showing that some 25m jobs are at risk of disappearing with plummeting demand for air travel amid the Covid-19 crisis.

Globally, the livelihood of some 65.5m people are dependent on the aviation industry, including 2.7m airline jobs as well as those in sectors such as travel and tourism. In a scenario of severe travel restrictions lasting for three months, IATA research calculates that 25m jobs in aviation and related sectors are endangered across the world—11.2m in Asia-Pacific, 5.6m in Europe, 2.9m in Latin America, 2.0m in North America, 2.0m in Africa and 0.9m jobs in the Middle East.

In the same scenario, airlines are expected to see full-year passenger revenues fall by \$US252bn (\$416bn), or 44 percent, in 2020 compared to 2019. The second quarter is the most critical with demand falling 70 percent at its worst point, and airlines burning through \$US61bn in cash.

Airlines are calling on governments to provide immediate financial aid to help them to remain viable businesses, able to lead the recovery when the pandemic is contained.

IATA said there were no words to ade-

With certification expected by 2023, followed by production and commercialisation of the service around 2025, there is ample scope for the kinds of battery developments that will be needed to make this concept in air taxis a viable business with acceptable range and charging capabilities.

ROSA's gyrodyne concept is not a new one and can be traced back to Britain's pre-war Cierva Autogyro Company, and in the mid-1950s Britain's Fairey Aviation dabbled with its Rotodyne.

quately describe the devastating impact of Covid-19 on the airline industry, and the economic pain will be shared by 25m people who work in jobs dependent upon airlines. "Airlines must be viable businesses so that they can lead the recovery when the pandemic is contained. A lifeline to the airlines now is critical."

In re-booting the industry, IATA said, alongside vital financial relief the industry will also need careful planning and coordination to ensure that airlines are ready when the pandemic is contained.

"We have never shuttered the industry on this scale before. Consequently, we have no experience in starting it up. It will be complicated. At the practical level, we will need contingencies for licences and certifications that have expired. We will have to adapt operations and processes to avoid reinfections via imported cases.

"And we must find a predictable and efficient approach to managing travel restrictions which need to be lifted before we can get back to work. These are just some of the major tasks that are ahead of us. And to be successful, industry and government must be aligned and working together," said the IATA report.

"We are not expecting to restart the same industry that we closed a few weeks ago. Airlines will still connect the world. And we will do that through a variety of business models.

"But the industry processes will need to adapt. We must get on with this work quickly. We don't want to repeat the mistakes made after 9/11 when many new processes were imposed in an uncoordinated way. We ended up with a mess of measures that we are still sorting out today.

"The 25m people whose jobs are at risk by this crisis will depend on an efficient restart of the industry."



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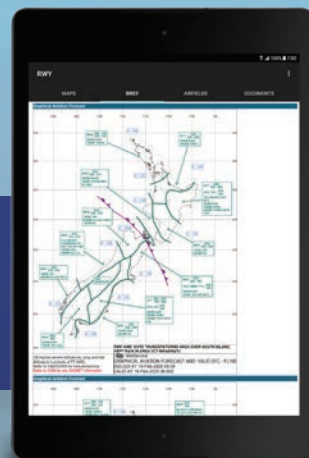
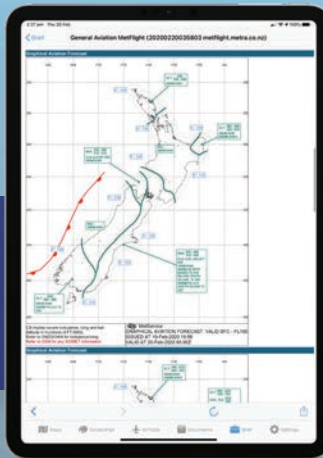
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# Tourism revamp needed

A “re-imagining” of the way New Zealand approaches tourism and a review of the International Visitor Levy were among the recovery strategies announced by the Minister of Tourism, Kelvin Davis, on 8 April.

“A post Covid-19 tourism industry will play an important role in New Zealand’s economic recovery, but it will be different to the one that we are accustomed to,” he said.

“We have an opportunity to rethink the entire way we approach tourism ... and deliver a sector which is financially self-sustaining in the longer term.”

Tourism NZ, industry and business are working together to develop a plan for how tourism will operate in a post-Covid-19 world. Mr Davis expected to receive advice

on this work by the end of April.

“Given international travel is likely to be heavily restricted for some time, and features of our tourism industry such as cruise ships are currently banned, this will need to be a phased approach, looking at how we can focus on and promote domestic tourism in the short term and how we can target an international offering.”

As part of planning for a restart, the International Visitor Conservation and Tourism Levy (IVL) will be reviewed. “This plan was prepared at a different time, for a different future. We are now looking at what aspects of the plan remain fit for purpose, and how it can be best used to help rebuild the tourism industry as part of a restart package,” said Mr Davis.

# Resistance will last some time

Nervous travellers are likely to be the biggest hurdle for travel agents to get over post Covid-19, while “reassurance factors” range from ultra-cheap deals to vaccines and a reduction of media coverage, early results from TRAVELinc Memo’s Covid-19 trade survey show.

The survey’s response from agents has shown their diversity in terms of optimists, pessimists and everything in between. A couple of agents have reported that virtually all of their clients have cancelled, while others have said that around 60 percent or even more have rescheduled.

“People will be reluctant to travel until all trace of the virus has died down in the media and there has been a vaccine developed—that will be quite a long time,” says one respondent.

“As travel agents, once our government support has dried up we will have to seriously consider second incomes to get through this.”

Another agent believes the key to kick

starting travel might be more basic. “With the typical Kiwi attitude of she’ll be right, I would say cheap-as-chip airfares will get bums on seats again.”

Several say clients will have their attention on comprehensive travel insurance they can trust. “They will also be looking at stability in the economy so they don’t have to worry about further flight cancellations, border restrictions or getting stuck.”

# Events disappearing

More than 5000 events have been cancelled, with 3393 postponed indefinitely and another potential 5000 to follow in the next six months, according to a survey by the New Zealand Events Association (NZE).

The research indicates 422 full-time equivalent jobs are already lost or projected to be lost from the sector in the coming months and 75 percent of the 344 respondents say the government support package is not enough.



Introduced in 2001, the two-seat Rafale-B is the French Air Force’s front-line multi-role fighter.

# Some retirement present!

Reports have been circulating about a French pensioner who was ejected from the cockpit of a Dassault Rafale-B fighter jet during the course of an aerobatics flight out of Saint-Dizier, in the country’s north-east.

An official incident report released by France’s civil aviation authority (BAE-E) blamed inadequate medical safeguards and safety protocols for the dramatic incident. The 64-year-old defence manufacturing employee was gifted the flight by colleagues as a retirement present.

It is understood that he was pressured into taking the flight and that stress caused during the flight caused him to pull on the ejector seat handle. “The data indicates that he was in a state of tachycardia, with data indicating a heart rate which varied between 136 and 142 beats per minute.”

The unnamed civilian was subjected to a load factor of around +4G before being hit with -0.6G. In the course of these aerobatics, he unintentionally activated the ejector handle, and although he was expelled from the aircraft, his parachute deployed without

fault and he suffered only minor injuries.

“The passenger had been in a state of high stress over the course of the morning,” reads the report, which included data collected from the man’s smartwatch. “This stress continued once he boarded the aircraft.”

The Rafale-B’s ejection system is designed to eject both pilot and back seat crew (pilot second). However, due to a glitch in this setting, the pilot was not ejected and was able to safely land the aircraft back at Saint-Dizier. The BEA-E has begun further investigations into this particular malfunction.

Other factors identified as of concern in this incident included: the passenger was examined by medical staff on the morning of the flight, not allowing a cooling-off period; the medical recommendations (including that he not be subjected to negative load factors) were not communicated to the pilot; the passenger carried out most of his safety pre-checks and installation into the cockpit by himself, and before takeoff, safety gear including helmet, oxygen mask, visor, and anti-g suit were not fitted properly.



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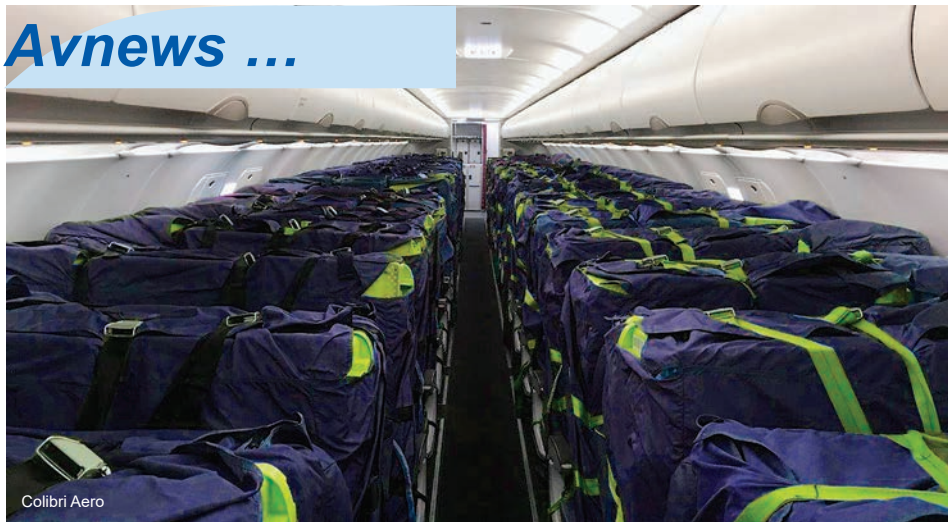
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## Bags carry cargo on seats

European aeronautical parts supplier Colibri Aero and design firm J&C Aero have developed a new method of transporting cargo in narrow-body passenger aircraft using seat bags. The cargo seat bag is designed to maximise available cargo space in a passenger-configured A320 family aircraft, at the same time keeping the goods safe and secure.

With hundreds of passenger airliners grounded worldwide as travel demand has plummeted, and with few other methods of utilising these aircraft to generate much-needed revenue, airlines are increasingly turning to operating cargo-only flights as a means to generate income.

Designed to be used for both humanitarian supply transport and commercial cargo, the bags fit neatly on to the seats, giving airlines a rapidly deployed solution to converting idle passenger aircraft into freighters.

## MAL saviour to the rescue?

Malaysian company Golden Skies Ventures (GSV) is hoping to purchase beleaguered Malaysia Airlines and reinstate it as a premium long-haul airline, relying on what it expects will be pent-up travel demand after the present pandemic and associated travel restrictions are over.

With finance from a European bank, executives from privately owned GSV announced the company had made an offer to fully take over the holding company of the ailing state carrier. "We have secured in excess of \$US2.5bn [\$4.08bn] from the bank; however it will take about three to four months to get long-term financing," said the company's chief executive.

Over the past 12 months a number of airlines including Air France-KLM, Japan

The kit gives airlines a 76 x 76 x 147cm cargo capacity, allowing for up to 75kg of cargo to be carried on top of each seat. Another 9kg can be carried underneath the seat, giving the airlines up to 252kg of cargo capacity per three-seat block. The kit can be installed in just a few minutes, allowing airlines to make the most efficient and safe use of the space without costly modifications to the cabin.

J&C Aero began development of the modification last year, involving numerous tests and consultation with both the European aviation authorities and airlines. Three months ago, amid mounting concerns over the looming Covid-19 pandemic, the company decided to put additional resources into the project to fast-track the certification process.

Thanks to rapid EASA certification, airlines have been able to start making use of the kits almost immediately.

Airlines and Malaysia's low-cost domestic carriers AirAsia Group have expressed interest in rescuing the carrier. All the bids have failed to advance because of a worldwide decline in air travel, compounded more recently by the developing pandemic crisis.

GSV says it intends to reinstate MAL as a premium long-haul carrier by expanding its route network and maximising utilisation of its 81-strong fleet. It also plans to keep other business units such as the carrier's budget airline Firefly and its cargo, maintenance and overhaul divisions operating, as well as pledging not to cut the airline's 13,000 front-line employees nor asset-strip the business.

The buy-out proposal permits the Malaysian government to keep its "golden share" giving it majority voting rights.

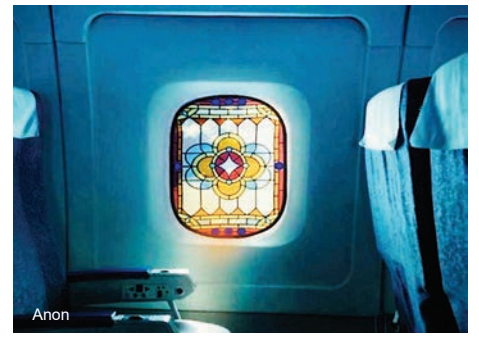
## Primp your ride

An entrepreneur has come up with a way to brighten your airline seat during your next flight with stick-on stained glass window inserts, available in a range of sizes and designed to adhere to airliner windows.

You might be used to seeing a stained glass window in a church, or perhaps even in an old castle, but have you ever seen one at 36,000ft?

In case you haven't yet but have a sudden desire to make your next flight more colourful, now there is an online shop selling the stained glass film to stick over the window next time you're travelling.

The promotion sales blurb says you can enjoy a dazzling stained glass window while reading a book, taking a nap or praying and,



it goes on to claim, can be used as a protective film against germs.

The film, designed to stick on the window without leaving residue, is available to suit a range of airliners including Airbus A330, A350, B777 and B787 Dreamliner. They are priced at between \$US25 and \$US50 each.

## Virtual tower progress

The collapse of the number of scheduled and controlled flights in New Zealand resulting from the Covid-19 lockdown has accelerated the introduction by Airways NZ of remote digital air traffic control to this nation's aviation industry.

From early next year Invercargill Airport will become home to New Zealand's first remotely operated digital air traffic control tower. It will allow controllers to work remotely and still see the air traffic as if they were still in the tower. This move had been planned for some time but the emergency has triggered an earlier introduction of the service.

Airways NZ says the technology will provide better aviation safety, improved weather resilience and the ability to change New Zealand's regions.

"A digital tower at Invercargill Airport is the first step in our journey to modernise the way we provide air traffic services at airports," says Airways general manager of Air Traffic Services, Tim Boyle.

Frequentis, the company that has won the tender for the digital service contract, is assisting Airways to deploy the tower technology via its smartVISION solution. Fully operational digital air traffic control towers already exist in the UK, Germany and Sweden, and Frequentis is also helping the United States Department of Defense with the same rollouts.

Nigel Finnerty, general manager of Invercargill Airport, says the control tower currently on site will be phased out over time and its future is uncertain. "Once it's not being used there will be decisions about where it's going to."

He says he welcomes the new technology and points to its success overseas. He also says Invercargill is the first to get the technology in New Zealand because it has a good

mix of aircraft using the airport.

According to Mr Finnerty, the flat terrain around the airport is ideal and the number of flights will allow the system to be tested but not overloaded. He assures the aviation and associated industries that the new technology will be operating in a transitional trial phase next year.

Air traffic controllers will continue to work inside the tower, some controllers visually sighting aircraft at the airport with other staff in a new control room at the airport looking at screens. Mr Finnerty states that no person would become redundant because of the introduction of the new technology and that gradually all the work will be taken over from the control room.

The operation command will subsequently be transferred to a centralised hub to deliver services to various regional locations. Digital tower technology allows controllers to manage air traffic, even in low light or during adverse weather conditions.

Airways is planning to replace its existing network of ageing towers with digital air traffic services in the future, aiming to install a digital tower at Auckland International Airport following Invercargill.

## Alcohol ban enforced

NZONE Skydive Queenstown general manager Clark Scott has announced the immediate dismissal of a staff member after an alcohol-related incident, saying the company has a "zero-tolerance alcohol policy of which all staff are aware" and the dismissal followed "an incident involving alcohol" on 19 March.

It is not known whether this incident involved a skydive operation with a company customer, as Mr Scott is not prepared to make any further information available as the matter is now under investigation by the CAA.

The company routinely carries out random breath testing of its entire staff, and equipment is freely available to staff members should they wish it self-test at any time they are on duty with the company.

However, Mr Scott says his company reported the incident and the action taken to the CAA immediately, in accordance with its established and "stringent health and safety procedures", of which all staff are aware.

Jonathan Mayne, the CAA's manager special flight operation and recreational aviation, says he is currently satisfied with the skydiving company's explanation, but the authority will be "looking into what action can be taken".

Currently, CAA Alcohol Consumption and Medical Aviation Safety guidance indicates there is "no measurable level of blood-alcohol that is safe for aviation" as this condition could affect performance.

NZONE Skydive Queenstown has been operating since 1990. The company was New Zealand's first tandem skydiving operation and is the only tandem skydiving company to have won New Zealand's Supreme Tourism Award.

Formed by two parachute enthusiasts, the company now employs some 65 staff and has taken over 300,000 passengers tandem skydiving.

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# Aeromedical service in a changed world



The Cessna Citation Sovereign is capable of transporting aeromedical patients throughout the South Pacific.

New Zealand Air Ambulance Service (NZAAS) and Skyline Aviation Ltd (SAL) are providers of aeromedical services in Australasia. SAL is well established in the industry and has been providing fixed and rotary wing services to New Zealand health boards for over 30 years.

NZAAS and SAL hold the Starship national air ambulance contract for New Zealand, along with air ambulance contracts with regional district health boards, ACC, Ministry of Health and assistance companies. NZAAS employs dedicated intensive care flight teams and specialist mission coordinators providing a 24/7 service to the country.

Since 2015 it has owned and operated a Nextant jet, based in Auckland, to provide life-saving medevac transports throughout Australasia and the Pacific Islands. In 2018 SAL introduced the Citation Sovereign jet which serves the Pacific Islands and charter market to complement its jet fleet based in Napier. The international jets are two of nine airframes across three New Zealand bases in a fleet of air ambulances and charter aircraft operated by SAL.

During the current Covid-19 pandemic, NZAAS and SAL have discerned a shift in the type of transports that they are completing, noting there has been some decrease in the day-to-day inter-hospital transports that are completed by the domestic fleet, with more patients being managed in their own domiciled hospital and some non-urgent elective surgeries cancelled. This shift reflects fewer overall presentations into emergency departments.

Undoubtedly this decrease in emergency presentations can be attributed to a roll-on effect of lockdown with fewer motor vehicles driving on the roads and no routine or extreme sports, therefore reducing the incidence of traumatic injuries. There have also been fewer incidences of infectious diseases, including the usual gastro bugs and chest infections, likely the result of increased awareness of the importance of hand hygiene combined with social distancing.

NZAAS and SAL have teams rostered 24/7 to support the aeromedical service, the Paediatric Intensive Care team and the national ECMO transport service.

The Nextant and Citation Sovereign jets have continued to serve the Pacific Islands, enabling patients to receive lifesaving interventions and care that are not available in the local hospitals. Each patient transfer is completed on a case-by-case basis as border exemptions and landing approvals into the island airports are now subject to increased and strict scrutiny. There is also a tightened system for gaining entry into and hospital bed acceptance with New Zealand DHBs.

With many of the islands being Covid-19 free, the NZAAS medical team must remain at the airport on arrival at a foreign port, meaning patient assessments and pre-flight interventions are performed on the tarmac rather than in the hospital environment. These steps, along with the company's strict PPE and infection control policy, ensure they keep the countries where they land, their patients and their staff safe.

As well as serving New Zealand and the South Pacific, the NZAAS intensive care medical teams also travel extensively,

providing a global commercial medical escort service. Their capability extends from managing a simple "handhold" patient to full ICU ventilated patients.

International commercial flight paths and border controls are constantly changing at very short notice as Covid-19 ravages parts of the world and others are determined to keep it far away from their shores. The in-house mission coordination team at NZAAS has well-established relationships with most major airlines and has a resilience and determination that bodes well for enabling the service to continue to be able to repatriate and retrieve patients who would otherwise be required to stay for an undetermined length of time in a country that is not their home and where they might have no support systems.

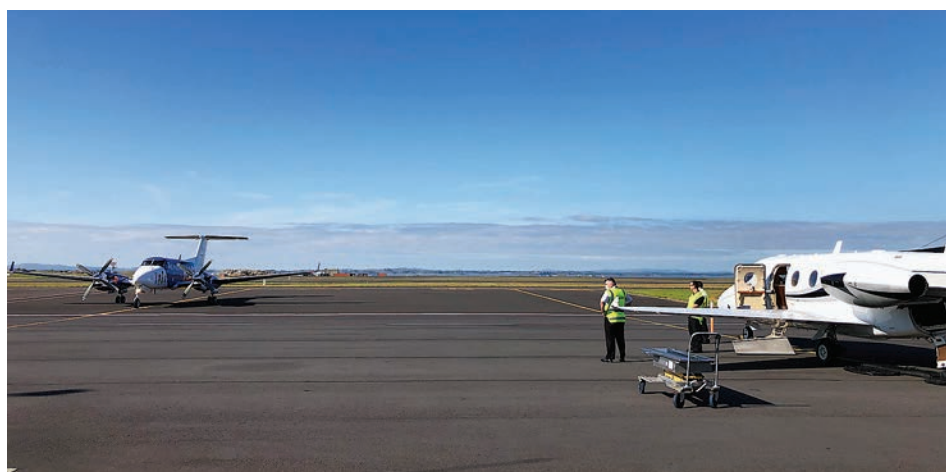
This has also aided in freeing up hospital beds in the New Zealand system in preparation for what may be a time of high need in hospital ICUs and wards across the country.

NZAAS and SAL have implemented their Pandemic plan and worked closely with the Ministry of Health and the NHCC to ensure that they have approved, up-to-date infection control policies, international operation protocols under Alert 4 and aircraft disinfecting procedures.

During the lockdown period they have successfully transported patients to Europe, Australia and America where previous attempts from other companies have failed. This requires many hours of planning and re-planning as rules change and flight opportunities decrease, but it also brings an immense sense of pride and satisfaction to all who are involved with the transfer when it goes ahead, not to mention a huge sense of relief and gratitude for the patients and their families.



The NZAAS and Skyline Aviation team are keeping safe in the skies.



Annabel Toogood, NZAAS CEO, says, "As the world fights Covid-19 our team works to make the near impossible possible, escorting patients back to their home countries and families, managing logistics with border restrictions, airlines shutting down and hours of relentless work coping with an ever evolving situation."

"It's important to reflect on the difference our passionate team have made on many patients' lives during this pandemic. For some of them their time on Earth is limited and it was their last opportunity to be reunited with their loved ones."

The start of a new decade with Covid-19 is set to change the face of domestic and international travel and trade, and also perhaps the way of future patient treatment and interventions.

NZAAS and SAL together would like to extend thanks to not only their own teams

who are collectively navigating their way through unprecedented and changing times but also to other essential workers who continue to support the nation in lockdown.

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# The challenges of restarting aviation

by Dr David Powell  
Medical Advisor, IATA



Dallas-Fort Worth is eerily empty on 8 April.

On New Year's Day I heard about a cluster of pneumonia in Wuhan, and four months later over half the world's airliner fleet is grounded and airlines are going broke. To begin with the airline industry was concerned with providing good information about where the risks lay, and how to fly safely. We met with experts, reviewed all of our procedures on board to ensure they were still appropriate, and let the public know that flying was safe to continue.

The potential was already being signalled for a \$US113bn (\$187.5bn) hit to revenue. Then, as South Korea cases boomed and then Iran, Italy and Spain lost control of the virus, the day came when severe restrictions started to be applied to travel, and the picture changed rapidly. Soon borders started to close, and things accelerated until airlines cut 80 percent, then 90 percent or more, of capacity. Many have stopped altogether.

Not surprisingly, the industry focus is on how to facilitate a restart of airline aviation. This presents major hurdles in the government arena as well as the customer journey, on how to find a way to do it safely in a COVID-19 world. Yet up to the end of March, a group of airlines representing around half of global traffic was aware of

just three episodes of suspected inflight transmission (all from passenger to crew), and a further five episodes of apparent transmission from pilot to pilot, which could have been inflight or before/after (including layover); there were no instances of suspected passenger-to-passenger transmission.

However, the virus travels between countries only by hitching a ride with human travellers. So what might help give governments and travellers confidence? Here are a few of the ideas being discussed.

- Temperature screening: this misses many early cases, those with no fever or no symptoms at all, and some who have taken paracetamol, while some of the equipment is poorly used or poorly validated. However, it will detect some and reassure many, and it will work better when supplemented with symptom screening.

- Masks/PPE: not a magical solution and needs to be associated with careful hand hygiene and avoiding touching the face. But having passengers wear some sort of face covering (now mandatory in Canada and other places) may help reduce droplet spread where physical distancing cannot be achieved.

Crew members will probably be wearing surgical masks and gloves in their

workplace for a time to come, and this will provide some protection for them and their passengers.

- Physical distancing: it is possible to modify airport check-in, immigration, security, departure lounge and boarding processes in such a way as to ensure such physical distancing—but difficult to achieve on board unless the aircraft loadings are so light as to be uneconomical. Face-to-face contact between crew and passengers is reduced by pre-placing food, water, and trash containers on seats before boarding.

Carry-on baggage may be restricted. The physical distancing also needs to be extended to the crew, during the journey to and from the airport and on layover.

- Cleaning: even though most transmission is direct respiratory droplet spread (exhaled and then inhaled), transfer via surfaces and hands is also important. In addition to the primary preventive tool of hand hygiene, cleaning and disinfection of frequently/recently touched surfaces is advised. Improved routine cleaning provides reassurance to passengers, whether or not it reduces risk of transmission.

Many airlines have increased routine cleaning, and for rapid turnaround flights passengers may be given alcohol wipes etc to use on the surfaces in their seat area.

- Infection testing: some countries now require (throat swab PCR) testing either before departure or after arrival. Such testing

misses some people with the infection and there is currently a delay waiting for the result—opening up a window for missing new cases and meaning that isolation and contact tracing still need to be included in the processes.

Rapid on-site PCR tests are not likely to be widely available before a few months. Rapid antigen tests are currently available and some airlines have experimented with them, but they have significant false negative and false positive rates.

- Antibody testing and “immunity passports”: it is likely that those who have recovered from infection retain immunity for a period, which leads to the idea that if infection is widespread in the community, those recovered could travel without risk. Documenting immunity requires an antibody test and currently these are approved only for research, having quite high false negative and positive rates.

We also don't yet know how big the immune population will be, how long immunity will be retained, or how complete it will be. There's a huge risk that some people might be tempted to get infected deliberately to facilitate travel.

A vaccine won't be widely available until at least next year. The current scenario is more than \$US314bn (\$520bn) lost by the airline industry alone. Jobs are being lost and some workable solutions are needed, even if not ideal.

## We don't mean to drone

Crew members of the Auckland Rescue Helicopter Trust (ARHT) are wanting to remind members of the public that while skies over New Zealand might be free of commercial activity during the Covid-19 lockdown, essential services such as theirs are still operational all hours of the day and night.

This comes on the back of concerns that both private and licensed operators of drones may not be operating within level 4 lockdown regulations. These guidelines stipulate drones are to be flown within the boundaries of a private property and to heights of no more than 400ft.

Michelle Boag, acting CEO of ARHT, says that crews of the Auckland Westpac rescue helicopters are heartened to see that people in the Auckland and Coromandel communities are taking Covid-19 seriously.

“Our immediate concern, however, is that while we are taking every precaution available to us to protect our crews, pa-

tients and families from Covid-19, we are at the mercy of drone operators wanting to capture images of Greater Auckland, Coromandel and the Gulf communities during lockdown,” she says.

“We can't afford to put lives at risk with drones operating outside the strict limits attached to the level 4 lockdown.”

Deputy Flight Operations manager James Tayler recalls an incident on Sunday 21 October 2018 when the Auckland Westpac rescue helicopter he was flying had a near-miss with a drone after taking off to fly to a Northland car crash scene where several patients were waiting for treatment.

He says the helicopter had climbed to 1300ft and was flying at a speed of about 130kt when the crew saw a drone pass down its right-hand side about 3–4m away.

“We certainly don't want a repeat of that,” James says. “At a time like this, an accident in the air is the last thing our community needs.”

## An outstanding effort

Sometimes in life there are outstanding occurrences which are strong enough to remain in one's mind long after the event itself. This was certainly the case in the rescue of four people (including the skipper who later succumbed) in huge seas north of Cape Brett in October 2019. It is a story of incredible courage by mainly unsung heroes.

Because of family sensitivities I won't name those rescued nor the yacht involved; suffice to say the yacht was large, well-equipped and the crew were very experienced sailors. The trip to Fiji was a sail of sun, sand and adventure.

En route back to New Zealand, the four on board encountered increasingly rough seas, so much so that with other damage, the tender, lashed to the deck, was washed overboard, never to be recovered. The yacht, in 6m sharp whitecaps, was taking on water. Mayday calls brought rescue services into operation.

Firstly, one of the latest rescue craft was dispatched from Opua. These boats are designed to take on big seas, but after several attempts it had to turn back. By this time the yacht was overtaken by water and the four people had to abandon it. Personal locator

beacons and lifejackets in the 6m whitecaps were all they had.

With the retreat of the rescue craft, SAR called on the air force. An Orion was prepared and dispatched. In the magical world of technology, it was able to home in on the often submerged beacons. Beyond that, it was up to the pilot to identify the target by a slow-speed circling operation. He had to work out the most favourable position to drop the life raft in the 40–50kt wind and huge sea running.

Dispatch was actioned, but in the wild conditions, it missed the target—by only a few feet, but those in the water had to swim for their lives to catch the rope attached to the raft. And haul themselves into it.

Now in a very weakened state, it took some time and exhausting energy for two men to reach and get aboard the heaving raft. It was impossible to assist the others to board, but they held on to the two remaining in the water.

Due to unfortunate coincidences the Whangarei rescue helicopter was unavailable, so an Auckland one was dispatched, but even at 130kt it would take time to cover the trip from Ardmore to North of Cape Brett.

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# Saving lives at the face of Covid-19

by Rosa Anderson-Jones

**R**ACQ LifeFlight is a world leader in aeromedical retrieval services. With over 40 years of experience and bases across the wider Queensland region, its aeromedical service offers the community a lifeline in emergencies.

In the face of the global pandemic, the LifeFlight crew are more vital than ever, bringing lifesaving medical treatment to seriously ill and injured patients around Australia, especially those in more remote locations.

When the threat of Covid-19 first became known worldwide, the team began paying close attention to the unfolding situation to ensure the pilots, crewmen, critical-care doctors and flight nurses would be rescue ready when the time came to start helping victims in Australia.

“We’ve always had highly developed infectious disease procedures in place, so we were able to quickly start adapting and adding to these for coronavirus,” says Brian Guthrie, RACQ LifeFlight Coordination Centre director. “These ensure the utmost safety for our crews, patients and the broader public.”

With the ever-evolving nature of this pandemic, the RACQ LifeFlight procedures have been constantly reviewed and updated as necessary.

“Our senior medical staff are sharing information with other organisations and

learning from the experiences of retrieval services in Australia and internationally.”

With thorough research and collaboration with other organisations, the company has swiftly adopted a series of changes right across the organisation, based on the latest clinical knowledge, to ensure the best outcomes for patients and to keep its crews and support staff as safe as possible. Doctors and nurses are required to wear full PPE when necessary, including masks, a face shield or goggles for eye protection, gloves and long-sleeved, fluid-resistant, disposable suits.

In addition, their aeromedical crews on the frontline are protected by the updated SOPs. “These include requirements for doctors and nurses to wear masks, eye protection, gloves and suits, as well as to undertake appropriate decontamination measures, after they are in contact with suspected or confirmed coronavirus patients,” says Mr Guthrie.

Barrier curtains have also been installed in the rescue helicopters to separate the cockpit from the cabin, further protecting the aviation crew members. Retrieval crews’ health is carefully monitored after a suspected or confirmed coronavirus airlift, with the standard self-isolation measures put in place if necessary.

“The safety and wellbeing of the crews at bases and the operations team in head office has been a top priority, with measures



taken early on to isolate them as much as possible from other staff, to minimise risk of Covid-19 transmission,” says Mr Guthrie.

LifeFlight’s support teams, usually located at offices and bases, have also adapted to many changes. Some started work from home regimes well before the government recommended the move, and now all staff who don’t need to be in the offices are working from home. Those who have to work in an office are following strict social distancing rules and ensuring surfaces are regularly disinfected.

A dedicated Covid-19 assistance desk has been set up in the operations centre to provide specialised coronavirus support to the business and staff.

LifeFlight’s operations centre, known as C3, is always at the heart and soul of everything LifeFlight does and is continuing its crucial work, around the clock, as this pandemic unfolds.

“It’s as important as ever that C3 can monitor where our aircraft are at all times—and TracPlus is an important tool in doing this efficiently and accurately,” says Mr Guthrie. “It makes it easy for the operations staff to stay on top of where the aeromedical

crews are at a glance, while they also manage the many new challenges brought about by Covid-19.”

Some senior staff, with specialised and updated Covid-19 information, are now regularly in the centre to provide support. Meanwhile, various operations usually carried out in C3 have been moved to another isolated workplace.

The current pandemic is set to create additional work for the staff, but the service continues to support Queensland in other areas of the health sector too.

“The RACQ LifeFlight rescue helicopters are still busy with their usual, non-coronavirus missions, including car crashes and inter-facility transfers, as tasked by Queensland Health,” says Brian Guthrie.

“People continue, unfortunately, to have accidents, to become ill or need to be transported to hospitals where they can receive a higher level of care, and we need to remain ready to do that for the community.”

So far their crews have been seeing the usual fluctuations in mission types, but it’s too early to tell if the government’s isolation rules are impacting the trend.

## on, but...

by Lincoln Davies



The Auckland Westpac rescue helicopter service continues to operate 24/7 during the coronavirus lockdown. Donations are needed to keep the service operational. Visit [rescuehelicopter.org.nz](http://rescuehelicopter.org.nz).



by Bob Syron

The Orion was able to maintain its station. Arriving on site, the rescue helicopter was able to reduce some wave height, the rotor downwash subduing the whitecap surf to some extent.

Over the target the rescue paramedic is winched down to the life raft. In this huge sea and wind it takes time and the accuracy of a well-trained team of people. Overhead the target the pilot has very limited vision below and is largely guided by the winchman who stands directly behind him.

The paramedic being lowered on the winch cable has to board the raft being tossed in a huge sea and wind. With team help he manages to achieve this. His next task is to manhandle each one into the harness. This requires strength and balance in pitching circumstances.

It takes time to achieve, while the helicopter has to maintain its station above. The winching requires the utmost concentration.

Being strapped to a cable and lowered in a 50kt wind, lining up on a life raft being tossed about in a huge sea, to rendezvous with people you have never met, may not appeal to many people. In simple terms it requires some often unsung gutsy individuals

als to respond in this way to a call for help.

The return of the winch cable and paramedic to the pitching raft in high winds is not easy. It requires concentration, classy piloting and patience. This operation is repeated until the four rescued people, plus winch paramedic, are back on board.

With some eight people in the machine, you would really appreciate the security of the 1000hp engines as they lift you out of the maelstrom of water and weather. After that experience of being tossed about in those conditions for over three hours, the relief of being rescued by a team of unsung heroes and the security of landing safely at the Whangarei Base Hospital would be indescribable.

### Footnote

The Orions have played their part in such dramatic rescues. These large and powerful propeller-driven aircraft can be slowed to provide more accurate deployment in such circumstances as recorded here. Their replacement is a jet-propelled machine which will cover distance more quickly but is not nearly as efficient at lower speed or in rescue situations such as these.

It is a shame that New Zealand, with South Pacific responsibilities, is unable to replace the Orion with a similar machine.

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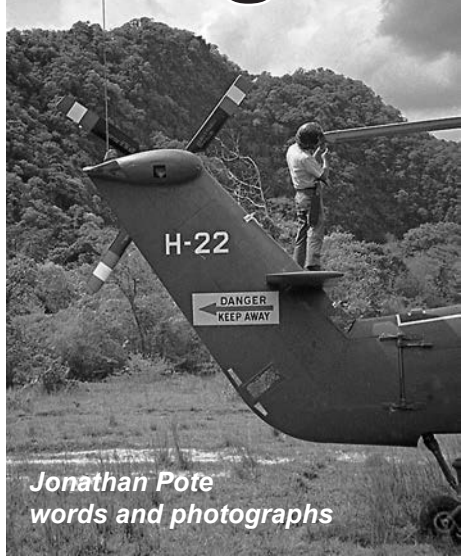
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# A flight in UH-34 H-22



Jonathan Pote  
words and photographs



The Chocktail rotor blades are checked for damage after a slight landing mishap.

With the operational area of Laos being so rugged and flights usually transporting small numbers of troops or freight, helicopters were well suited to Air America's needs. First to appear were four Sikorsky H-19A (company designation S-55) Chickasaws, serials 1, 3, 8 and 9. However, the loss of H-3 (ex 55-091) at Na Nhom on 20 May 1960 due to engine failure, fortunately without injuries, underlined the unsuitability of the type, which was withdrawn. H-3 was never recovered due to communist troops controlling the area.

All further acquisitions were Sikorsky UH-34D (S-58) Choctaws, the initial two dozen being identified H-A to H-Z, numbers being used for the suffix thereafter. The UH-34D also had a single engine (a Wright R-1820) barely powerful enough in the hot climate, but it was a long time before some were converted to turbine power and supplanted with UH-1 Bell 205s (which bore Lao civil registrations).

By 1966 H-F was the only survivor from the early batch, but it was destroyed a year later (along with H-31 and nine T-28s) during the Pathet Lao rocket attack on Luang Prabang airfield on 2 February 1967.

The Choctaws of Air America were used to a hard life, having been transferred from the US Marine Corps in South Vietnam. However, life in Laos was not to prove a quiet retirement for these aircraft. BuAer 149394, an HSS-1 before USAF/USN designations were harmonised and it was re-designated an UH-34D, became H-15 in Laos.

On 28th May 1969 it became the first Sikorsky S-58 to reach 10,000 airframe hours, a feat acknowledged by its manufacturer with a ceremonial plaque. Less than four years later, Sikorsky had to provide another plaque as H-15 reached 15,000hr on 1 November 1972, having averaged four hours a day continuously despite time for maintenance (and probably a few battle damage repairs).

The versatile UH-34s had as many uses as their users had ideas, but in the main they were used to ferry small groups of Hmong soldiers from mountain top to mountain top, thus "force multiplying", delivering small amounts of food or ammunition to Hmong villages or evacuating refugees.

CIA case officers used them as personal

transports. On one occasion, Walt (not his true name, but a CIA case officer at Thakhek whom I knew well) asked me to warn my hospital colleagues as he was off towards the Ho Chi Minh trail network to pick up a seriously injured casualty. I immediately asked if I could go as well, implying that I could perhaps be of use, but he was adamant. "If we go down and the crash doesn't kill us, the enemy will. You just wait here."

Sadly I watched H-22 head east. An hour later they were back and I reversed the Land Rover under the turning blades as soon as they landed, transferring the seriously wounded Royal Lao Army soldier into the back before taking him to our operating theatre.

Later that evening I was called over to the USAID compound and asked what I knew of Walt's intentions as H-22 had disappeared en route to Savannakhet. I could tell them nothing of use, but Walt's earlier warning rang loudly in my head. It was three days before he turned up, uninjured but saying nothing to me of what had happened.

H-22 had also had a memorable day the previous year. On 20 June 1965, along with H-23, it launched from "The Alamo" (Na Khang, LS-36, in northeast Laos, where USAF HH-3E "Jolly Green Giants" were usually based) to attempt the rescue of the crew of a downed USN F4H Phantom at Son La, some 60 miles inside North Vietnam itself. This was possibly the furthest Air America ever penetrated into North Vietnam.

The Vietnamese People's Air Force did not intervene, although downing the helicopters or the C-123 Provider acting as on-scene commander would have been a great political coup. Heavy ground fire damaged both helicopters (fatally wounding Col Thong, a senior Hmong officer) and the sortie was terminated. Next day, two more Air America Choctaws successfully rescued Lt Briggs but sadly not his pilot.

On another occasion, several of our medical team out on one of the many cave explorations that we enjoyed passed right through a limestone karst peak via a river cave. Emerging into the light in the deserted valley beyond, they found two UH-34Ds parked by the river. The Americans present were hospitable but firm: no photographs allowed but a cup of coffee first and then board a Choctaw to be flown back over the karst whence they came. "And please do not go there again." No doubt some military installation was nearby.

One unusual use of the UH-34s was the

recovery of damaged light aircraft from inaccessible locations. Gela Eiler (Air America's chief flight mechanic at Udorn) devised a frame to straddle the helicopter fuselage for this purpose. Carrying the downed aircraft's wings stowed on the port side of the helicopter, its fuselage on the starboard and with the engine, undercarriage and other components stowed inside the cabin, this frame could be fitted to the helicopter in under two hours, and a previously dismantled Courier or Porter then loaded at its crash site in under half an hour.

Carrying such an aircraft as an under-slung load enabled a quicker lift but was difficult to control in flight, being used only for quick snatches and ferrying a short distance to a safer location. Over two dozen light aircraft were recovered by this method, some receiving definitive repair at Udorn, some being returned to their manufacturer and a few being simply used for spares recovery.

On 27 April 1966 I at last got a chance to fly in a Choctaw. I was having lunch with Val Petersen of USAID at Chez Louis, run indeed by Louis, a veteran of the French army. I knew Val well as he worked on refugee work to which we British also had an input, and I knew also that he had a covert role.

Today he was to fly to Ban Na Khen "to check out the local security situation". Na Khen was a small village on the Nam (River) Hin Boun, perhaps 50km northeast of Thakhek, well into the karst peaks of the Annamite Mountains dividing Laos from Vietnam and further than I had so far managed to travel. If not in the area of the Ho Chi Minh trail, it was certainly very close to it.

Out on Thakhek West (K2 or LS-40) strip were three Choctaws. H-36 and H-38 took off immediately and headed east. We pumped two drums worth of avgas into the remaining helicopter (H-22 of Son La fame and Walt's later disappearance), filtering it through chamois leather on which a lot of dirt remained. I strapped in just to the rear of the door, the crewman using the seat forward where a gunner would have sat manning the 0.50 calibre during the aircraft's Vietnam days. Val sat upstairs, in the left-hand (copilot's) seat.

The Wright R-1820 fired up noisily and after the customary running takeoff we headed northeast at 3000ft. Flying in and out of small clouds, it was bitterly cold at times. Ground fire was obviously not expected since the crew wore no body armour, which was usually worn correctly at low altitudes but sat on at higher levels when bullets could come only from below.



"The Colonel" (shirtless) with Val Petersen and two incognito passengers.

At first the land was familiar, but eventually we passed Ban Tanah, the furthest I had been on the ground, and approached the limestone karst crags which rose vertically at the edge of the Mekong flood plain. Just before we reached the cliffs was the village of Ban Na Koke where we were to check the latest local information. Running in low and fast, the pilot pulled the elderly Choctaw up into a right hand pedal turn, dropping back towards a clearing for a running landing.

The village was now out of sight, but soon people appeared from the scrub, including two men in neat western civilian clothes. They were Asian but not Lap; maybe Thai or Taiwanese. I could not understand the conversation, and no-one thought it necessary to include or introduce me.

There was also one armed soldier who asked if we would give him a lift back to Thakhek. I personally checked that the breech of his M-1 Garand rifle (which dwarfed him) was empty. The local troops were notoriously lax in safety procedures and once a Lao soldier had put holes in our Land Rover pulling the trigger to "prove" that his rifle breech was empty. It was, afterwards ...

With Val satisfied that it was safe to continue, we took off with the three additional passengers and headed into the gorge of the Nam Hin Boun. This was a cleft several thousand feet deep and very narrow. Once in the shaded chasm, the Choctaw seemed like an insect in a crack. Large cave mouths abounded at all levels (once, in the Embassy Pioneer XL665 we had flown into a huge cave mouth, flying beneath hundreds of feet of solid rock before turning out into the open air again) and soon the chasm opened into a steeply sided bowl, the river running along the eastern side.

On the flat bottom were a few huts and dried out paddy fields. This was Ban Na Khen and would have been a fascinating place to walk to in peaceful times. Now it was largely abandoned, just a few soldiers remaining at an outpost. We spiralled down in an unbanked turn so that after a few orbits it seemed as if we were descending vertically while the bowl rotated around us, before straightening out to run in and land between a small outcrop on our left and an isolated tree on our right.

From my vantage point in the doorway



H-34 Choctaw, only slightly damaged, in a remote paddy field. Right: Air America crewman.







The limestone Annamite Mountains bordering Laos with Vietnam are riddled with caves.



I watched with disbelief as the helicopter turned steadily to the right and hit the tree. It severed the trunk about 15ft below the top, where it was 6in or so thick, the advancing blades smashing the branches and foliage to matchwood as they fell through the disc. Debris and dust, pulverised tree ant nests and their angry occupants were hurled into the cabin.

I barely felt the impact with the tree, but the landing run across the rock-hard remains of the paddy edges was very rough. No doubt the pilot was a little unnerved but soon recovered from his disorientation.

As soon as I was allowed, I unstrapped and ran from beneath the rotor to the edge of the clearing, naively thinking that no-one near the helicopter would hear incoming fire until hits were registered—perhaps I could act as an early warning?

I also sensed an opportunity for a Viet Cong viewpoint photograph. As I lay taking my photograph, several untidily clad soldiers entered the clearing: With great relief I saw them greeted as friends by our newly acquired passenger.

One of them looked different—very strongly built and obviously in charge. I went out to greet them. The large man's handshake was almost painful, the bear hug that followed even more so. This was "The Colonel", the man Val needed to meet. Some supplies were offloaded for The Colonel while the pilot moved the now stationary rotor a quarter turn at a time so the crewman who had climbed onto the rear fuselage could examine each blade carefully. The blades must have been tough, as only one was slightly bent, two dented and one undamaged.

We were in a radio blind spot and knew that it would be some hours before another helicopter would come looking for us. However, being in disputed territory, this was no place to stay long. The crew were satisfied with the rotor blades' integrity, so farewells were soon said and we left.

The flight home was tense at first—there was certainly a noticeable added vibration, but after a while I relaxed again, and an hour later we were back on the ground at Thakhek after a sedate approach. The pilot then headed for Udorn for an engineering inspection—and no doubt a blade change.

It was only later that I found out who The Colonel was. I was correct in thinking he was not from Laos. A soldier in the Imperial Japanese Army, in 1945 he had not surrendered but had gone into the jungle and lived off the land for years. Sometime in the late 1950s he and the Americans had come into contact, and he had agreed to stay where he was, a lone watcher on the developing Ho Chi Minh trail.

The true purpose of our flight was to take him new batteries for his radio, plus a few other supplies, and collect some notebooks. I have no idea of his eventual fate or whether he contacted his family back in Japan. It seemed very appropriate that Thakhek West (Lima Site 40A), from which we flew to see him, had been a Japanese Imperial Army Air Force airfield during WWII.

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# An aircraft reborn

John Pheasant words and photographs



May 2017—borrowed glider trailer and a major restoration project of a rare aeroplane ahead.

It all started with an email from friend Bill Finlen in Australia, not long after he and I had completed a jaunt around New Zealand in my Tiger Moth ZK-BFF. There was a link to an auction of aviation stuff in Victoria, and flicking through the catalogue I found Lot 143, a Jackaroo project with logbook, ex-G-AOIO, a picture showing a bare fuselage on its wheels and a skeleton tail, but with all the relevant Roo bits.

I had seen one, C-FPHZ in Gwelfh, Canada, in 1989. Another lot was an overhauled Gipsy Major, also with logbook. The expected prices seemed quite low, so I sent Bill a wish list as he was to attend the auction for some lots he wanted.

Auction Day, Sunday, had me sitting by my computer all afternoon, awaiting news.

When it came, I had the Roo, the engine and various engine stuff, and next day an unsold lot was offered at the reserve, which I snapped up, with lots of small wood parts for wing ribs, and three sets of old stock carbon steel flying wires.

Bill also did quite well, buying a lot of stuff like cabane struts and engine mounts. Then the realisation set in. All had to be cleared from the hangar in Maryborough, Victoria, by Friday, and Bill was booked to fly to the UK on holiday with his wife, with no time to collect the stuff.

I flew to Brisbane on Wednesday, met up with Bill and his mate Ben Allen, an ex truckie with a Toyota Troopie and spare time. We borrowed a glider trailer from the local club and at 10am Thursday Ben and I



Back in New Zealand, Alan and grandchildren get acquainted with Granddad's new project.

were off to Victoria, 1600km away, arriving 20hr later at 0600 on Friday.

By midday Saturday we were loaded with a heap of boxes and bins, with the Roo fuselage strapped on top, and by lunchtime Monday we were back in Boonah and unloaded at Bill's place.

I invested in a heap of plywood and screws, and in three days built three large crates and broke the Jackaroo down into shorter bits, stowing all my loot into what Ben had bet could not be done. With Bill also urging me by email from England to help myself to anything I thought I might need, I collected a lot of "new" wartime internal fittings and wires, and a heap of his bits that he was in surplus of that I could sell for him in New Zealand.

Now I had 7m<sup>3</sup> and about 900kg of freight to arrange passage for to New Zealand, not forgetting to ensure that "Moveable Heritage Australia" did not require an export permit for this Jackaroo which conceivably could have been part of Australia's rich cultural past.

All conditions satisfied and the crates in the hands of an agent, I flew back to New Zealand to arrange the import, with the Ministry of Primary Industries (MPI) keen to keep Australia's various biting bugs and snakes out of the country.

There was a minor hitch when the NZ agents misread the clearance permit, which was only for the container to be unloaded for inspection of contents. Instead they collected my crates and trucked them from Port of Discharge, Auckland, to Tauranga, where MPI got in a flap when I asked for a clearance inspection at the transport depot.

Seems this depot was not approved for opening the crates, and for a while it looked as though the lot would be sent back to Auckland. However, sanity prevailed and we shifted them to an approved site on the airport. After a very cursory inspection of the interiors, MPI released them to me and I got them home.

## What's a Jackaroo?

I have since been finding out lots about G-AOIO and Jackaroos generally. As the first of its kind in New Zealand, I have had to deal with the CAA regarding how it would



It's easier to make a complete new floor than repair the diseased old one.



Control box in, it's easy to see the frames connecting to the original width.



## Fastest aircraft?

I've read through your March edition of *Aviation News* on line and it's great to be able to do this during this time of isolation at home for all of us. Let's hope this thing goes away before the summer, so we can get back to some good flying.

This is just to say that on page 15, in the article "Oreti Beach celebrates

more speed" by Peter Owens about the Yak-3 *Full Noise*, he says that this is the fastest piston engined aircraft in New Zealand!

Well, I have to say Sir, this is not correct.

The fastest aircraft would be the Goodyear Corsair (ZK-COR) at 446mph, followed by the P-51D Mustang at 437mph, the Yak-3 *Steadfast* (powered by P&W R-2000) at 407mph and then the Spitfire at 370mph. Thunder Mustang ZK-TMG was about 375mph and said to be the fastest aircraft around the country until recently sold to Australia, but it did hold a few records here prior to departing New Zealand.

Thanks for your excellent work on the magazine and good flying.

**Warwick F. Jones**

Vice Chairman, RAeS Hamilton Branch

[*Full Noise* was properly timed during its runs above the beach, whereas all the other fast warbirds' speeds are based on manufacturers' figures and haven't been officially tested on these specific examples. ZK-TMG set point-to-point records and not outright speed over a measured course. *Editor*]

## Stan Smith

Thank you for such a well-researched article on the famous Garry Stanfield (page 17, April *Aviation News*). He is an amazing fellow. I knew him as an LAME looking after a J5F a group of us owned.

Also, as a navigator I crewed with him on DC-8s. I have always regarded the F/E as the most important man on the crew. They had direct line to the "brain" of the aircraft, knowing its problems before it did. Their expertise was exceeded only by their sense of humour.

Also, most of those guys could have dismantled an 8 and put it back together again with only a few bits left over. It was a very sad day for aviation when the F/Es left the flight deck.

**Jack Hall**  
Flight navigator  
via email

## Wyvern oops

The FAA Museum at Yeovilton was a far more interesting museum at the time of my first visit years ago than the present one which is set up more for paying customers rather than enthusiasts. Some of those interesting exhibits must now be in the hangar that featured in "FAA Museum reserve collection" (page 30, March *NZ Aviation News*)—a real goldmine for the likes of us.

The article reminded me of that first visit. I was on a London layover and took the train down for the day. The train station is not in town, so it was a walk through the countryside into Yeovil and then a local bus to the museum. This was shortly after the Falklands War and the helicopter with all the bullet holes was part of the display, along with a captured Pucara.

Also on display was the Westland Wyvern with the Rolls-Royce Eagle engine. The 24 exhaust stubs took me by surprise as the only Wyverns that I knew had the turboprop powerplant. Back in Auckland I mentioned this aircraft to one of the engineering ground instructors who had been in the Fleet Air Arm.

He laughed and told the story about the first Wyvern he saw, which had the R-R Eagle engine. For an engine run they tied the aircraft down well and fired it up. At full power the engine departed the airframe.

"Spectacular," he said.

**Robin Hickman**  
Orewa

## B737 trainer query

My wife and I have recently returned (early) to the UK from a holiday in your lovely country. However, I have a query which I'm hoping you may be able to answer. Do you know the identity of the Boeing 737 cabin trainer in the NZ School of Tourism, Auckland Airport campus?

A search of the web has failed to provide me with an answer, so I thought your local knowledge or that of your readers would be the solution.

With many thanks in anticipation of your response.  
**Howard Janda**  
via email

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In its homeland the most enthusiastic waver of the Jackaroo flag is Tricia Neville, seen here over the Bedfordshire countryside in her own example.

treat both it and me. But the project came with a good deal of information researched by previous owner John Fisher, whose estate it was part of. I had copies of some drawings for the conversion, which helped, plus copies of the flight and maintenance manuals and pilot's notes.

This aeroplane started life in 1939 as a standard DH82A Tiger Moth, serial no 82151, survived the war years as an RAF trainer and was civilianised as G-AOIO. In 1957 it was purchased by the Wiltshire School of Flying at Thruxton, which had devised a modification to make a cheap four-seat cabin tourer out of the readily available two-seat open-cockpit Tiger Moths.

G-AOIO was number 10 of a final production of 19 before they were overtaken by the introduction of modern Cessnas and Pipers, and the project died a natural death. Some were converted back to Tigers, a couple crashed, and this aircraft eventually languished until shipped off to the Colonies in 1978, where it never flew, changed hands, was partly cannibalised and wound up in a private museum collection.

Its only connection to Australia was the name bestowed on the type when an Aussie working for WSF mentioned, during lunch-room discussions on naming the new model, that the stockmen on cattle stations were jacks-of-all-trades and called Jackaroos. The name stuck.

I began by spending three months building a warm room to do most of the work in, as a lot would be done through the winters, fairly chilly in an unlined hangar even in the Bay of Plenty. That got me through the first winter before really starting.

When the crates arrived in New Zealand, my second son Alan drove from Gisborne,

four hours away, so his two young sons could help Granddad unpack them. As work progressed, all seven grandchildren took a keen interest, and I have been able to have them do meaningful (and some menial) tasks such as glass bead blasting small fittings, fitting hundreds of washers on nails on sticks for ease of painting—eventually even removing and installing wings.

The fuselage woodwork was in really poor shape. The floor also was a real mishmash of bits. A large sheet of plywood overlapped the original Tiger floor, with a hole obviously for the ag version with a patch bolted on it, though no mention in the log of involvement in ag work. Weird! The wooden control box was also in bad shape.

The first summer was really warm and dry, perfect for sandblasting the steel frames in a cubicle in the open, formed with plastic sheets in my trailer. All steel was blasted with worn garnet media which has been through a commercial blaster five times and then discarded, so it is not as harsh as the new stuff. Washed and dried, it worked well.

Then all tube work was borescoped with a medical unit, given to me by a retired ear-nose-and-throat surgeon, which could be inserted into 2BA holes in longerons and rotated all round. Everything was then etch primed, painted with two-pack poly paint and allowed to cure before being sprayed internally with anti-corrosion liquid and drained. For this I used garden mini irrigation tubing and a small fabricated nozzle connected to a pressure pot.

I was told by the CAA that as the Jackaroo was no longer supported by a Type Responsibility Organisation it would have to go on to a special category C of A, but that would be to my advantage as it would be treated



Alan Pheasant helps with the cabin woodwork. Alas, he died before seeing the Jackaroo completed.

more or less like a homebuilt and I could do much as I pleased and all would be assessed at survey.

I took them at their word and decided to make a one-piece floor, to DH drawing but Jackaroo width, as the original was basically the Tiger floor with a few cross frames covered with fabric.

Then I made a new control box, rear fuselage decking and lots of other bits to replace parts too badly deteriorated or missing. Having overhauled all the in-box controls, I painted the whole cockpit structure and fittings silver. It looked rather large and bland all silver, so I decided to highlight all the controls in orange, my chosen colour for the finished job. One could now see the concept of the widened fuselage of the Jackaroo, with the front and rear WSF 10 and WSF 11 frames that reduce the fuselage to Tiger Moth standard to reattach the engine mounts and rear fuselage.

Next on the list was the cabin structure and doors, a truly uninspiring set of wood, all laminated plywood frames once held together with Aerolite 300 and steel nails and screws, all of which were rusty and falling out. I was able to salvage the rear cabin and front door frame, plus door beams with the window slider slots, but the main rear frame and matching door frames had to go.

I made a form and laminated a 10 layer spruce frame with door jambs built in, and then made the door rear frames on the same form so they matched perfectly. Some of this project was helped along by my son, Alan, who did a lot of woodwork for me on irregular trips from Gisborne.

The new cabin roof looked inviting, so I installed two small solar panels, with a controller inside, to be connected to the radio/battery console. It works a treat.

The forward cabin coaming originally was a set of half-inch plywood frames covered with aluminium sheets screwed on, some of which were missing or useless even as patterns. I decided to make the whole coaming in new ply frames covered with 1.5mm ply, glued and screwed, and reinforced for standing on aft of the top cowl while refuelling.

I also enclosed the frame above the firewall which became a locker, à la Gipsy Moth, for oil, tools, pickets and other stuff. This then led on to having a second step above the original Tiger step which helps an older chap like me to ascend to the cowl top. Continuing the Gipsy theme, I ran the tachometer cable, oil pressure capillary and ignition wiring out through this deck and under a metal fairing to the engine bay, to avoid having penetrations through the firewall. I also built a layshaft to replace the bent throttle rod and extended it out to the left for hand starting, as per DH83 Fox Moth.

With the forward fuselage widened by 12½in to fit the extra two seats, there is a frame at the front bolted on and narrowed to the original width to attach the engine bearers, and a similar frame at rear to attach the standard rear fuselage. These make the aircraft 18in longer. The DH82A undercarriage is altered only by a W strut in lieu of the central V strut, giving a 12½in wider track and making it more stable in a crosswind. To be concluded

## Restored to wartime markings



Tiger Moth ZK-DAM at Bridge Pa in March 1975.

Today the term “warbird” is a common one. Dozens of former military aircraft, many not so long ago destined for the scrap heap and many others rescued from it, have been lovingly restored to their former glory.

Warbird restoration is now a worldwide business and proudly New Zealand has a significant share of the finest military aircraft restorers, a business which was unheard of 46 years ago when I first became involved in aircraft ownership.

It all began back in the early 1970s over a few drinks in the historical Hawke's Bay & East Coast Aero Club's clubhouse, officially opened by Charles Kingsford Smith in January 1933. I had for some time expressed to fellow club members a desire to buy an aeroplane—either outright or perhaps in a partnership or syndicate—and with a chat with club member Alan Land the catalyst for a partnership was formed.

Alan had a friend Ron Hope in Rotorua. I seem to recall he was instructing at the aero club and was involved with the local Air Training Corps. Sometime earlier Rotorua ATC

had acquired Tiger Moth NZ1485 from the Government Stores Board. It had for many years been an instructional airframe and was one of the very last DH82As disposed of by the RNZAF.

Arch Finch had restored the aircraft to airworthiness, but the ATC squadron soon found its maintenance was beyond its finances and so it was offered for sale.

After some negotiations between Alan and Ron, a deal was struck whereby we purchased the aircraft, registered ZK-DAM, and on 19 November 1974 flew it home to Bridge Pa which in those days was the centre for Tiger Moth activity.

This, however, was not before some skulduggery by the Rotorua ATC. For reasons I'm unable to recall it had to

convince the hierarchy the biplane was no more than a collection of components. For our part, Alan and I acquired a collection of Moth bits and pieces from Temple Martin which we delivered to Rotorua, enabling the squadron to produce photographic evidence that indeed DAM was just a pile of parts.

We had not been enjoying the delights of biplaning for long when it was decided to give the old girl a more colourful appearance as its overall silver with red interplane struts was, we reckoned, somewhat nondescript. A couple of decades earlier many civilianised ex RNZAF Tigers still sported training yellow colours, so it was decided to reapply its former air force colour scheme and at the same time go the whole hog and add its military serial number along with roundels.

The CAA was not as keen on our idea as we were, but after much procrastination warmed to the request but would not relent on civilian registration letter size. Thirty centimetres tall was the requirement, and that was what

### Murray Kirkus words and photograph

they were to remain.

Early in 1975 the aircraft entered Temple Martin's Aire-pair workshop at Bridge Pa and a week or so later emerged in RNZAF wartime colours—the first ex-NZ military aircraft, I'm informed, to reappear wearing military markings in private ownership.

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# Regional connectivity for New Zealanders



by David Lyon

John King

*Regional airlines have always found it hard to compete against the national carrier. They either face predatory pricing tactics or else succumb to regulatory forces with mysterious allegations of irregularities and shortcomings in their paperwork. CityJet, with its four Embraer Bandeirantes flying passengers on Cook Strait routes by day and freight at night, lasted only six months from May 1999.*

An interesting article by Kan Tsui (page 24, April *Aviation News*) discusses the economic and social benefits of regional air services across New Zealand. It suggests that this is an issue that should be considered and addressed by central and local governments. The means by which this could occur are not articulated.

This article addresses the issues facing regional connectivity in New Zealand and suggests a number of means by which they could be addressed.

The need to address the recommendations arises from the fact that New Zealand does not currently have a National Aviation Strategy (NAS) that could include regional connectivity as one component. In the absence of any such strategy the various players in the aviation market are free to pursue their own objectives in an uncoordinated manner. This includes airlines, airports, tourism operators, business operators and local government.

While Australia is similar to New Zealand in not having an overall aviation strategy, the state of Western Australia recognises the importance of air transport and has previously published and operated such a strategy. It is in the process of updating it to issue a renewed Aviation Strategic Plan later this year.

In attempting to address the challenges regarding regional connectivity, it is important to understand how our aviation system has developed and what are both the current constraints and opportunities.

From the mid-1980s onward, New Zealand pursued a commercialised aviation model that has centred on the various components of the aviation system, each being commercially viable. This business model has led to the establishment and failure of multiple small airlines.

It also led to the near collapse of the national carrier in 2001 after it had earlier purchased Ansett Australia. Having bailed out the largest aviation entity in 2001, the government has in 2020 again had to bail out both Air New Zealand and the Airways Corporation as a result of the impact of the Covid-19 pandemic. Smaller airlines operating within New Zealand might also need financial assistance or they will cease operations, with immediate consequences for regional communities.

Again turning to Australia as an example, that country subsidises air links to very small communities for social and economic reasons. The size of the communities is generally limited to those with up to 200 residents which would not economically support air links.

No such subsidies have operated in New Zealand, although for many years Air New Zealand was required to provide essential air services to some communities, until 1984 when a more commercial orientation became the guiding principle. As noted above, in the absence of an NAS it is difficult for the benefits and costs of any subsidies to be properly evaluated.

The main components associated with regional connectivity are seen as being the airports, the airlines and the demand for such services across New Zealand. Each of these components is addressed in turn.

## Airports

The first question that needs to be addressed is: what is regional connectivity and which airports should be considered regional? For the purposes of this discussion regional airports are those without scheduled international air links, which removes Auckland, Wellington, Christchurch, Dunedin and Queenstown.

Of the remaining airports, the majority are companies owned and operated by either a single local government entity, for example Palmerston North, or owned and operated by multiple local government entities such as Hamilton. These are all former joint venture airports that were operated with part central government ownership until the airport system was commercialised from 1985 onwards and central government stepped back from jointly owning and operating most regional airports.

These airports are required by law to be managed or operated on a commercial basis and are free to pursue their own business objectives without central government control—but also without central government financial assistance.

Five smaller regional airports remain within the joint venture airport scheme that dominated the airport landscape from 1954 until commercialisation from 1985. These five airports—Whangarei, Whakatane, Taupo, Whanganui and Westport—are jointly owned by central and local government. Revenue generated is kept within the airport accounts to offset operating costs, and any shortfall or capital expenditure is provided jointly by the two parties.

It is interesting to note that the Provincial Growth Fund (PGF) has recently committed \$5.9m to develop the terminal, carpark and apron at Taupo Airport to accommodate projected growth.

Such injections of central government funds are unlikely at non-joint venture airports as they are commercial entities required to raise their own capital. These airports have often extended runways and made other airport improvements from their own means. A number have also invested in and operated international services for significant periods, such as Hamilton, Rotorua and Palmerston North.

It is these larger regional airports that are likely to suffer a significant decrease in short-term revenues as a result of the Covid-19 pandemic and may need to call upon their local government owners for financial support rather than being asked to pay dividends.

New Zealand has a well-developed and capable regional airport infrastructure that is generally in excess of the current demands placed upon it. It does not currently represent a constraint to the provision of regional

air services. The five joint venture airports all have runways that vary in length from 1097m at Whangarei to 1372m at Whanganui, while the larger commercialised regional airports have runway sizes ranging from Nelson's 1347m to Hamilton's 2059m.

The regional airports across New Zealand would all welcome increased air transport links for social and economic reasons and are ready to work with the airline sector to achieve this. As fixed infrastructure entities they do not enjoy the flexibility to move their asset base as airlines are able to do, and therefore they are reliant upon airline decisions to service their communities rather than having any means to require them to do so.

## Airlines

Up until 1984 the provision of domestic air services across New Zealand was tightly controlled by the Air Services Licensing Authority which approved routes, fares and even the aircraft that airlines could purchase. NZ National Airways Corporation and later Air New Zealand, with which it merged in 1978, were also required to serve some regional communities as an essential air service, despite the economics of doing so.

From 1984 onwards that requirement was relaxed with the commercial value of air services to airlines becoming the dominant consideration. Central government oversight and control were subsequently limited to licensing and safety. This meant any New Zealand-based airline could now fly to any location and charge such fares as the market would allow.

As part of major economic reforms from 1984 onwards, Air NZ was privatised in 1987. The airline was thereafter expected to chart its own future both domestically and internationally. This also led to the airline acquiring three existing domestic airlines that were providing competition—and ultimately to their demise, as discussed further below.

The Single Aviation Market (SAM) with Australia was agreed and in place from 1996, which meant that any airline of each country could fly domestically within the other. Both Air NZ and any other New Zealand airline now also faced the potential for competition domestically from Australian-owned airlines. The SAM was replaced by the Australia and New Zealand Open Skies Agreement (OSA) that was signed on 20 November 2012 and remains in force.

The ability for New Zealand owned airlines to operate domestically within Australia led to the ill-fated investment by Air NZ in Ansett Australia. This airline collapsed in 2001 and resulted in the New Zealand government having to bail out Air NZ financially and becoming the principal shareholder. Since then the New Zealand government has had a strong focus upon achieving a financial return from its investment.

In addition to successive start-ups and failures of multiple regional airlines in New Zealand, the OSA facilitated the entry

of Jetstar on domestic flights from 10 June 2009 linking Auckland, Christchurch, Dunedin, Wellington and Queenstown. This was followed some six years later in December 2015 by regional services linking the five cities of Auckland, Napier, New Plymouth, Palmerston North and Nelson, using a fleet of Q300 aircraft.

Jetstar focused on regional airports already served by Air New Zealand and did not attempt to compete on smaller regional routes still being serviced by Eagle Air with its eighteen 19-seat Beech 1900Ds. Jetstar provided some competition with Air NZ but had a markedly smaller fleet than the 23 Q300s then operated by Air Nelson.

A major blow for regional connectivity took place in November 2014 when Air NZ's CEO announced the decision of the airline to cease Eagle Air operations. The rationale provided was that the airline was losing \$1.0m per month and that the 19-seater aircraft had the highest cost per passenger because of overall costs across fewer seats and it did not stack up against the economics of jet aircraft.

The closure of Eagle Air and the loss of smaller aircraft from the fleet had serious implications for smaller regional airports that cannot economically sustain services by 50-seat turboprop airliners such as the Q300. Loss of operations to many regional airports previously served by this fleet subsequently occurred, and the airline ceased operations 26 August 2016.

A further blow to regional connectivity occurred when the New Zealand Commerce Commission and its Australian government equivalent approved a code sharing arrangement between Air NZ and Qantas and their subsidiary airlines, which took effect from 28 October 2018. Under this arrangement, all Air NZ domestic services were now also Qantas services with the revenue split between the parties.

It is hardly surprising that Jetstar shortly thereafter announced its withdrawal from regional services. Why continue to provide services when you can continue to sell tickets to all New Zealand regional destinations via your partner Air NZ and receive a financial return for doing so?

Such services ended at the end of November 2019. This competition with Air NZ had lasted slightly less than four years.

The withdrawal of Jetstar from regional operations has left Air NZ in a dominant position across regional New Zealand, with no competition on the major regional routes and small third-level operators linking some regional airports but avoiding any direct competition with the larger airline.

The Air NZ focus on fleet rationalisation and larger aircraft is also evident in its recent decisions to close down former subsidiary airlines and not operate aircraft with fewer than 50 passenger seats. As mentioned previously, Eagle Air was completely shut down in August 2016—but so too were the CAA Part 119 Air Operating Certificates of Air Nelson on 19 November 2019 and Mount Cook Airlines on 10 December 2019 as entities separate from their Air NZ parent.

Both these airlines had begun operations as private businesses before ultimately being purchased by Air NZ. While Air NZ still owns and operates the aircraft of the former subsidiary companies, it remains to be seen as to whether or not regional connectivity will grow or shrink.

One negative consequence for Air NZ of closing Eagle Air is that it no longer has the capacity to compete on regional air links where aircraft of fewer than 50 passenger seats are economically viable. This provides a distinctive market opportunity for smaller airlines in smaller population centres some distance from larger regional airports.

Outside the main centres the challenge for smaller communities is to attract and retain regional air services from smaller airlines which will always be mindful of the market power of Air NZ.

## What is the market for regional air services?

As two market examples, Whakatane has a population of some 37,100 and an airport currently linked by Air Chathams to Auckland. Whakatane is also only 84km by road



from Tauranga Airport and 77km by road from Rotorua Airport. Both these airports have well-developed links to Auckland, Wellington and Christchurch.

By way of contrast, Westport has a population of some 4600 and is 218km by road from Nelson Airport, 330km by road from Christchurch Airport and 140km by road from Hokitika Airport.

In attempting to develop an NAS, including air services to regional communities, it would be important to define a range of parameters such as population base, the distance to alternative airports, the economic importance of air links to each community and the social needs of each community. The Provincial Development Unit supporting the PGF has made a start on defining this in a Position Paper – Airports, released on 2 May 2019.

A question that needs to be asked is why Air NZ, with more than 50 percent public ownership, has chosen to abandon the smaller airports across New Zealand and whether only economic considerations were taken into account?

The airline’s website states its Purpose as being to “Supercharge New Zealand’s success socially, economically and environmentally” and its Promise as being to “Connect New Zealanders with each other and the world”.

Given these statements, does it not feel any social obligation to continue to service the smaller regional communities across New Zealand that it and its NZNAC component previously did for so many years? Has the airline itself sought any central government help to continue such services as is potentially available through the PGF?

In the absence of the national carrier servicing smaller regional areas, the question remains as to whether there is a viable market for other airlines to survive and grow in these markets, such as the Air Chathams services to Whakatane or Sounds Air services to Westport.

# A radical new approach: Crash barriers in the sky

by John Pheasant

We all know the CAA is struggling with a financial crisis, Airways NZ is underfunded and raising prices for traffic control services and proposing to extend these into previously uncontrolled areas, while operators want to improve their bottom line by streamlining their flight profiles to save fuel, etc, etc. All for the benefit of the safety of the air travelling public, we are told.

Now take a look at the road transport system. All funded by tax on fuel, right? OK, maybe also car licensing, GST and a few minor fees and fines.

Automatic traffic lights streamline flows in congested areas and motorways have expensive median barriers to keep conflicting traffic in proper lanes—all in the name of safety for the motoring public, funded by the motoring public and those who choose to drive. Enlightened councils are separating cycles from cars by dedicating lanes to them, still funded by the motorists and now ratepayers (taxes) contributed to by cyclists, the users.

WHAT IF all fuel tax on aviation fuel and motor fuel used in aircraft were put entirely into the aviation system? A system already exists to collect the hours flown by every aircraft in New Zealand. CAA Form 6056 is a mandatory quarterly reporting process enabling the CAA to gather statistics to assess the effectiveness of safety measures across the spectrum.

Each aircraft could have a declared fuel consumption rate applied and the tax applicable to the fuel burn for the hours flown set against a client account from which all CAA fees and charges are deducted, as well as all Airways fees for services provided to that aircraft, and any credits returned to the client or some put into a fund to provide all aviation safety-related equipment and services.

This system would be a win-win. All operators would have an incentive to file the

It is interesting to note that the PGF seriously considered but ultimately declined supporting two regional airlines to a value of \$15m each in 2019. These investments would have taken place outside any coherent NAS and, as pointed out by the parliamentary opposition spokesman, Shane Goldsmith, this was a questionable investment since the New Zealand government currently owns 52 percent of Air NZ, with which such funded airlines could ultimately grow and compete with.

Would any such funding have come with tags requiring them not to operate on routes serviced by Air NZ? This might take New Zealand back to a pre-1984 position whereby airlines had to apply to the Air Services Licensing Board to gain approval to fly any particular route.

## Nationally

At a national level, does the government have any obligation to support regional connectivity, or should the market continue to determine which services are economically viable and sustainable?

Does the government have a conflict of interest in being the majority shareholder in Air NZ and allowing it the freedom to make commercial decisions if those same decisions mean the lack of regional connectivity to significant communities across New Zealand?

Does the government also have a conflict of interest in allowing the Commerce Commission to approve a domestic code sharing agreement between Air NZ and Qantas that has seen both a reduction in competition across many regional routes in New Zealand, increased fares according to the New Zealand Airports Association, and lifted the bar in terms of any new airlines seeking to compete with these two large airlines?

Is the PGF a tool that could be used to enhance regional connectivity? At present the aviation projects supported by it seem to



What if all aviation fuel tax went into aviation?

mandatory stats report to get their account into credit, an incentive to do more flying. By the same logic, CAA and Airways would have their funding on tap, operators who for whatever reason are not flying would not be charged for “participating” with an aircraft sitting idle, and the tax rate levied could easily be adjusted up or down to cover inflation and other variables.

Now the Fund. Suppose transponders became mandatory for ALL air operations. This in the interests of the air travelling public, remember.

The airlines and large operators already have TCAS because they say it is no longer practicable to look out the window, and high-speed aircraft also have this problem.

But they need all small aircraft to be bleeping to make TCAS fully effective. But the small, slow aeroplanes should not have to pay for expensive equipment they do not need. So mandatory fitment of such equipment should be met by the Fund and could be scaled by subsidising the costs based on, say, the stated cruise speed of each type—full funding up to, say, 100kt, and scaled back by a percentage for each 20kt above.

So those who need or choose to fly with the big boys pay their way, and those mostly in the recreational category, who normally stay down in the weeds, are playing their part for safety of the air travelling public without being penalised for it.

Sounds radical? Not really. Back in the ‘50s of last century, fuel tax was refunded by monthly return based on fuel dockets for fuel dispensed into aircraft.



No longer under any obligation to service smaller centres, Air New Zealand has ceased to operate anything smaller than DHC-8-Q300s and has abandoned many regional routes.

be occurring on an ad hoc basis rather than as part of any coherent national strategy to enhance regional connectivity.

It is interesting to note that on Radio NZ 10 July 2019 Shane Jones, the minister responsible for this fund, suggested mayors should apply for PGF grants to bypass the Ministry of Transport which was opposing such grants. This suggests the lack of a coherent NAS to identify which projects would provide the greatest social and economic benefits from regional connectivity.

## Summary and conclusions

The April 2020 article by Kan Tsui refers to economic benefits of regional connectivity to smaller communities as well as the social benefits such as reduced unemployment. What is not yet clear are the mechanisms by which such benefits could be achieved and the means of doing so.

As reported earlier, New Zealand does not currently have a national aviation strat-

egy that identifies an ideal future state and the pathway to achieving it. Rather, it is left to multiple individual players to determine the levels of service provided and the funding of those services.

Given that the government is the majority shareholder in the largest airline serving New Zealand domestically, the owner of the Airways Corporation, a shareholder in multiple airports across New Zealand and the joint venture partner in five smaller regional airports, there are clear benefits in an organisation such as the Ministry of Transport crafting a national aviation strategy that can integrate the interests of multiple stakeholders.

At the very least, such a plan could provide a framework to achieve the positive outcomes Kan Tsui has identified in his research. This plan could also incorporate the perspectives of key organisations such as Aviation New Zealand and the New Zealand Airports Association.

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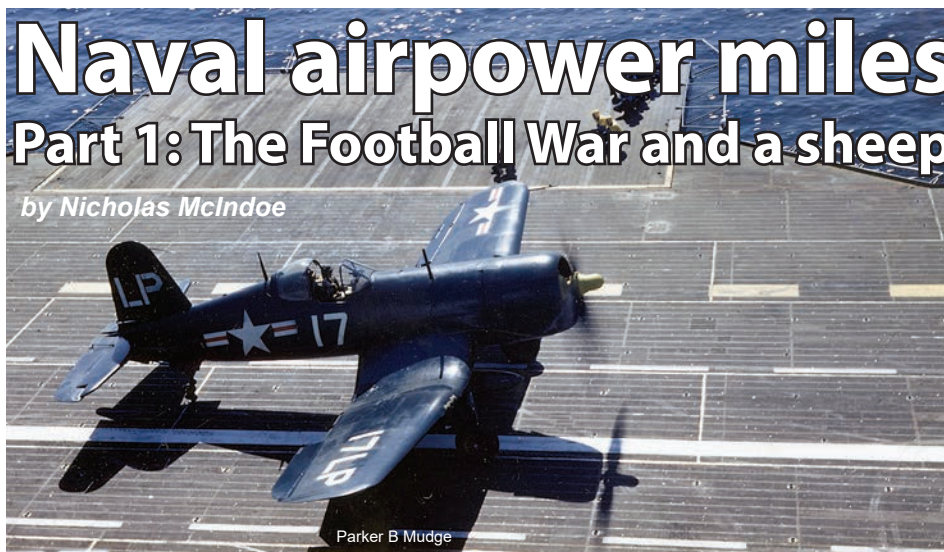
**TECNAM**



# Naval airpower milestones

## Part 1: The Football War and a sheep in wolf's clothing

by Nicholas McIndoe



Parker B Mudge

The Corsair, as the penultimate US Navy carrier-borne piston-engine fighter, stayed in service and took an active part even into the jet age, as with this USS Midway operation in the late 1940s.

This year sees significant milestones for three naval aviation greats—Corsair, Seafire FR 47 and Sea Fury. *Aviation News* explores the Corsair (and a masquerading Harvard) this month, while a future issue will examine the two British aircraft.

### Chance Vought F4U Corsair

It's been 80 years since the prototype Corsair (XF4U-1) first flew on 29 May 1940, and entered the history books as the first American fighter to exceed 400mph in level flight.

The Corsair was first conceived in 1938 with a USN request for a single-seat, carrier-based fighter. The Vought design team proposed the smallest possible airframe diameter around the most powerful engine available at that time, the Pratt & Whitney XR-2800 Double Wasp of 2380hp. The new aircraft was typical American—big—a by-product of the simplicity and reliability of the 18-cylinder radial engine.

To absorb all that power, a large propeller was fitted, and to keep the main undercarriage legs to a practical length but still give adequate clearance, the Corsair's wings were given the distinctive inverted gull wing shape. A secondary effect of having the wings emerging from the circular fuselage at the perpendicular, rather than a tangent, was the inherent lack of interference drag and hence no need for airflow-wasting fillets at the junction.

Ironically, the Corsair spent much of its career as a land-based fighter. An initial order for 584 aircraft was placed in 1941, although the production aircraft was not actually ready until June 1942. Carrier trials began in September that year and the Corsair officially entered service on 28 December.

However, the dangers of landing a high-performance fighter with limited forward vision on a pitching carrier deck soon became apparent and the navy persevered with the Grumman F6F Hellcat. The Corsair underwent several modifications, including a higher seat, before being accepted for carrier service.

In the meantime, Corsairs entered service as a land-based fighter with US Marine Air Group VMF-124 over Bougainville in February 1943, and soon made short work of the once-invincible Japanese Zero. Coupled with appropriate pilot training, the fast, powerful Corsair could out-turn and out-dive any adversary in the Pacific Theatre where it was a critical ingredient in the Allies' eventual push to victory.

The Japanese weren't safe on the ground either, and soon came to dread the 'Whistling Death'—their nickname for the ground-attack version of the Corsair, fitted with eight rockets and up to 1800kg in bombs. The whistling sound came from the rush of air through the cooling vents in a high-speed dive.

Eventually, over 12,500 Corsairs were built by Chance Vought, Goodyear and Brewster and operated by several air arms, including the British Fleet Air Arm which, unlike their USN counterparts, operated the Corsair with clipped wings as a carrier-borne fighter from the start.

The RNZAF operated 424 land-based Corsairs in the Solomons from 1944, by far the most numerous type in that service's history.

By war's end, Corsair pilots had accounted for 2140 enemy aircraft, at a kill ratio of 11:1. The leading US Marine Corps ace was Major Gregory 'Pappy' Boyington with 28 aerial victories.

The Corsair service story doesn't end there. They flew on into the jet-age during the Korean War, the first Indochina War, the Suez Crisis, the Algerian War and over Tunisia in 1961. The last operational Corsairs were used in the July 1969 "Football War" between El Salvador and Honduras.

At the time of going to press, the only Corsair flying in Australia or New Zealand is one of these. Registered as VH-III, Graham Hosking's F4U-5N is based at Tyabb, Victoria, and is one of 19 examples operated by the Fuerza Aérea Hondureña (FAH), the Honduran Air Force, from the mid-1950s to 1979.

This example rolled off the Chance Vought production line in Dallas, Texas, sometime in 1951. Like the other 18 Corsairs, it found its way to Honduras from the USA under private ownership and was imported via American aid programmes.

The last known dogfight between propeller-driven aircraft occurred when FAH pilot Capt Edgardo Acosta downed three Salvadoran aircraft—two Corsairs and one Mustang. He was flying F4U-5N Bu124715/FAH609, which last flew in 1981 and today sits in the Air Museum of Honduras, com-



John King

The F4F Wildcat, Grumman's first monoplane carrier fighter, was in service at the United States' entry into WWII and, although outclassed by the F6F Hellcat and especially the Corsair, stayed in production by General Motors as the FM-2 due to its suitability for smaller escort carriers. This FM-2 appeared at the 1994 Warbirds Over Wanaka airshow.



via Peter Clements

Peter Clements taxis Graham Hosking's F4U-5N Corsair VH-III at RAAF Point Cook following a 5hr ferry flight from Darwin. The two drop tanks under the fuselage can hold 150USgal of fuel each.

plete with three kill markings below the cockpit.

Graham Hosking's Corsair is Bn123168/FAH603 and flies today in authentic FAH markings. It has a New Zealand connection too. In 1979 American company Hollywood Wings acquired the seven remaining airworthy FAH Corsairs, as well as the 10 non-flyable airframes and all spares. These made their way back to the USA by air or rail (FAH603).

In 1987 the Walt Disney Company acquired 603 and gifted it to the Air Force Museum of New Zealand as payment for its assistance in the making of *The Rescuers*, filmed around Queenstown and featuring RNZAF aircraft. The museum hoped to convert the Corsair into a version representing the 424 RNZAF examples but soon realised this would not be so easy, and exchanged the aircraft for Graham Hosking's P-40F Kittyhawk, which has since been restored as a static P-40E in RNZAF colours.

After arriving in Australia in 1996, 603 made its way to Nobby Bartsch's Aerotec workshop in Darwin, where it was restored over an 18-year period, flying again in May 2014.

Peter Clements is a current B787 captain for Jetstar, as well as an RAAF Roulettes pilot, current RAAF Reserve pilot for the Point Cook Museum and one of Australia's most experienced warbird aviators. He describes flying the "Bent-Winged Bastard from Connecticut" to *Aviation News*:

"Having already flown the P-51 Mustang and P-40 Kittyhawk, on approaching the Corsair you realise how physically big the aircraft is compared to them. It is large. Its wartime operating weight is approximately 13,000lb compared to the Mustang's 10,000lb.

"The height is exaggerated because of the gull wing. The R-2800 Pratt & Whitney engine, combined with one of the largest propellers ever fitted to a single-engine fighter, meant the designers had to provide more clearance for the propeller, to stop ground strikes when the tail was raised on takeoff. The gull wing was designed to do just that which meant it became a very tall aircraft.

"It really shows when you get into it, as it's a long climb up to the cockpit, which is quite roomy compared to other WWII types.

"The Corsair was designed to be carrier-based and has systems that give the aircraft a maximum chance of getting back to the boat if there were failures or battle damage and enhance pilot survival. It has two accumulator bottles holding 1800psi to power emergency systems. One bottle provides energy to blow the canopy off, the other to blow the undercarriage down if the standard system doesn't work.

"It also has an electrical emergency hydraulic pump which can be used to extend the flaps in case the engine-driven hydraulic pump fails.

"Engine handling is more difficult than other types due to the rule, 'Your boost must be 2in MAP [manifold air pressure] higher than your rpm.' For example, if you have 2000rpm set then you can reduce the power back to 22in. If you need a lower power, you reduce the rpm using the propeller pitch control. This may not mean much, but when you're busy, like when you're joining the circuit at high speed or in formation, your left hand is busy moving the pitch and throttle levers.

"Taxying the aircraft is typical of the era. You can't see out the front, so you weave the aircraft constantly. Most taildraggers have

## Farmers Air brings back a

by Keith Morris



Andrew Hogarth

Loader driver and trainee ag pilot Shaun McCarthy refuels the Beaver.

In an unexpected reversal of the historical trend towards turbine-engine topdressing aircraft, Farmers Air of Gisborne has brought a de Havilland Canada DHC-2 Beaver back on line as a topdresser.

The Beaver has a long history in the aerial topdressing industry in New Zealand, and much of that history is centred on Gisborne. Lawson Field formed Fieldair Ltd at Gisborne in 1951, and over the years Fieldair operated a total of 19 Beavers, the first of which, ZK-AZB, was operated from 1952 until retirement in 1983.

(But you can't keep a good Beaver down, and it is now with Hallett Griffin as part of his topdressing aircraft collection).

The last Fieldair Beaver was retired around 1988, and since then the sound of

the 450hp Pratt & Whitney Wasp Junior radial engine has not been heard topdressing in the Poverty Bay area.

That all changed last year when Farmers Air imported the Beaver from Kennedy Air and registered it ZK-BVA (the second use of the registration, the first ZK-BVA being a Fletcher that crashed near Te Kuiti in 1972).

This "new" Beaver started life with the US Army in 1952 and so is a pretty old machine, but Beavers are a bit like grandfather's axe! It was civilianised onto the US civil register in 1989 and then in 1992 made its way as VH-BVA to Australia where it had a succession of owners and was operated on floats for some time.

By October 2016 it had flown 12,900hr, a low time for a 64-year-old aircraft. It





Above: NZ1066 seems to have suffered more than its fair share of groundloops, including this 2002 incident at Wanaka when being used as a camera ship. Ray Mulqueen (left) discusses the situation with the pilot, one of the most experienced T-6 pilots in the USA.

Right: NZ1066 (ZK-ENE) has found at new home at Tauranga. Classic Flyers CEO Andrew Gormlie is at the controls as White Island spurts another gaseous cloud.



Nicholas McIndoe

steerable tailwheels where the tailwheel moves with the rudder pedals on the ground. However, the Corsair, being carrier-based, doesn't. The tailwheel is either locked or unlocked and can swivel with differential braking. Landing on a carrier, the Corsair caught a cable which pulled it up, so the brakes aren't the strongest system on the aircraft and need to be managed so you don't overheat them.

"As with the Mustang and Kittyhawk, once you get the Corsair lined up on the runway it comes into its own. Its peace-time weight is only 10,000lb (compared to 13,000lb in service) so it has plenty of power. The engine is designed to use 115–145 octane fuel. This was discontinued about 20 years ago, so the 100–130 available means a reduced maximum power (52in MAP). Even so, the aircraft still performs extremely well.

"It flies off the ground at 100kt and climbs at 150kt. Once the gear is up and 150kt achieved, the power is reduced to 40in/2400rpm. Unless you're going straight into a display at 1000ft I reduce to cruise power 30in/2000rpm and auto lean and cruise climb. Even at cruise power it's climbing at approximately 1500ft/min.

"The Corsair is a beautiful aircraft to fly—great control harmonisation and controllability combined with plenty of power.

"It cruises at 200kt using 85USgal an hour. The aircraft holds 234USgal. The longest flight I've had in it was ferrying the aircraft from Darwin to Melbourne. I did a 5hr sortie with two drop tanks (150USgal each) fitted.

"My display starts with a canopy up flypast at 200ft doing 300–330kt. Power is set at 40in/2400rpm and I dive down from 2000ft to get that. Max continuous is 46in/2400rpm. The aircraft rolls very well and, being a fighter, loops and manoeuvres well. Being an aircraft I want to see still flying in a

hundred years, my display uses quite low-G (3–3.5) and never negative-G.

"On final approach there is good visibility ahead. However, with that long nose, once you flare you lose forward visibility quickly and need to rely on peripheral vision to gauge height and if you are straight. At this stage the tailwheel is locked and stays locked until you slow to taxi speed. Landing speed is 90kt and the Corsair handles moderate crosswinds well.

"I'm often asked which of the three WWII fighters I've flown is the best and I honestly don't know, as we operate them so conservatively. They are all beautiful and individual. When I first flew the Mustang 20 years ago, I often thought of the 20-year-olds just off a wartime pilot's course doing their first few flights (no dual P-51s then).

"Having flown the Corsair for a while now, I also find it hard to imagine what it was like for a young Marine graduate to land it on a pitching, rolling deck. Again, no dual Corsairs. Unbelievable.

"I do know, though, that the Corsair has a predictable stall and recovery. Spinning is another story. The Flight Manual states 'No intentional spinning allowed.' I'd say the original test pilot must have had an exciting moment!"

## Harvard NZ1066

NZ1066, an honorary naval aircraft only, is the author's favourite Harvard. Painted in a spurious US Navy scheme, it was the first New Zealand Warbirds Association's Harvard—an honour usually but inaccurately credited to NZ1092 (ZK-WAR).

Although not normally associated with naval aviation, such was the Harvard's versatility that 40 initially entered USN service in 1936 as the NJ-1 (N=trainer; J=North American; 1=the navy's first trainer built by North American). During WWII it became the SNJ (S=scout or advanced trainer).

The RNZAF operated 202 Harvards between 1941 and 1977, and NZ1066 was brought on charge in December 1943. It served with 1 TAF Squadron between 27 September 1955 and 6 December 1956 be-

fore being stored at Wigram in 1962 until it took part in the final Harvard flypast over Christchurch on 24 June 1977.

The type has always been the backbone of the New Zealand Warbirds movement and on 20 June 1978 Derek Williams became this country's first civilian Harvard owner when NZ1091 (ZK-ENC) arrived at Tauranga. He still owns and flies it.

Next, NZ1066 (now ZK-ENE), left Tauranga to become the first Ardmore-based, civilian-owned Harvard, when it was purchased by Paul Leuch—ironically not a Warbirds member.

Ernie Thompson had already been taken for circuits in NZ1066 by Trevor Bland and soon became the Harvard's next owner, purchasing it from Paul for \$13,000.

"I became the first Warbirds member to have a Harvard at Ardmore," he says. "On 23 December 1978 I did 50m in Harvard '75 with Bryan Lockie who had taught me aerobatics in the Chipmunk. I did my type rating in '66 with Trevor Bland on 27 December—total time on type, 3hr 10min."

Five months later Ernie flew '66 to Mercer to rendezvous with Trevor and Stan Smith in Harvard '92, and escorted them to Ardmore.

He had some interesting times in '66, not least of which was leading the first Warbirds Harvard Formation Aerobatics Team, precursor to the Roaring Forties, with the likes of Trevor Bland, John Denton and Ross Ewing off his wingtips.

"The first display was Easter 1979 at Te Kowhai, just me and Phil Hewett [in NZ1075]. The late Max Clear was none too pleased with these 'noisy beasts' invading his tranquil microlight haven!"

By November 1979 the display had become a series of formation loops, low passes, line-astern rolls, chandelles and a low-level buzz and break to finish the routine.

Ernie says, "Trevor gave me a solo routine on a card and said, 'I'm off to LA—I'll check you out when I get back.' We flew the routine a couple of times out of Ardmore and when I asked how I did Trevor replied, 'I'd tell you if you were no good.'"

# Beaver

underwent a major rebuild and was ferried across the Tasman Sea via Lord Howe Island in January 2019.

Registered to Farmers Air as ZK-BVA on 28 January 2019, it was at that stage configured as a passenger aircraft. It was flown at the 2019 Healthy Bastards Bush Pilot Championships at Omapere—very appropriate as you couldn't get more of a bush plane than a Beaver!

But Farmers Air had purchased ZK-BVA to fulfil the role of training new agricultural pilots using dual controls fitted, and so it went to West Aero at Mercer for the fitting of a hopper—which had come from the Jim Frogley Beaver ZK-BBX, the last topdressing Beaver in New Zealand when it suffered damage in October 2017 and was withdrawn from service.

After the hopper was installed the Beaver went to Hamilton Aero Maintenance for painting in the classic Beaver scheme that it now wears. And finally it was delivered to Gisborne and carried out its first topdressing job at Tangihanga Station on 11 April 2020, flown by Farmers Air owner and chief pilot, Andrew Hogarth.

Andrew reports that ZK-BVA performed beautifully and that he had a smile on his face all day. He says this aeroplane will make a great addition to his fleet by providing a pathway for teaching the agricultural pilot skillset before moving onto his Falco turbines.

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# The tragic flying life of Ivan Louis Kight

## Part 3: New Zealand aerial activities

by Errol W Martyn

Within a few months Ivan was on his way back to New Zealand, the *Hastings Standard* of 9 February 1917 stating that he was expected to leave England shortly “on sick leave”. On 9 April he attended a combined function at Taradale to farewell six local soldiers about to embark for overseas and a reception for himself and Corporal P.J.V. Glass, both of whom had been invalided home.

Ivan now began practising law with Sainsbury, Logan and Williams at Napier. In 1918 he took over a solicitor’s practice in Hastings before soon afterwards acquiring the Dannevirke practice of the late Ralph H. Robertshawe. Ivan ran it under the name Robertshawe, Kight and Dunn in partnership with Ernest H.T. Dunn—Kight at Dannevirke and Dunn at Hastings—until August 1919, when Dunn was forced to give up the practice owing to the effects of wounds received at Gallipoli in May 1915. Ivan then carried on on his own account.

Although he was no longer in the military, there was in December 1917 a curious request made by Ivan for an interview with the Minister of Defence, Sir James Allen, regarding his plans to travel by rail over the Christmas holiday period. Returning military officers could apply for a free, short-term travel warrant on New Zealand Railways, one requirement being that the journey had to be undertaken while in uniform.

Rather strangely, Ivan claimed he did not have his “Imperial uniform with [him] in New Zealand”. His interview with Sir James cleared the way, however, Ivan being treated as a special case. Following some high-level correspondence between the various authorities, he was permitted to “travel in mufti during the currency of his ticket”.

Quite why he did not have his uniform with him in New Zealand is not explained. Although his sojourn in the RFC had come to a disappointing end, the relatively young 22-year-old’s self-confidence appears to have remained high; his contact with Allen would not be the only time he sought assistance from those in high office.

Ivan also busied himself with local community matters. He had intended standing for the Dannevirke Borough Council but his nomination arrived too late. By 1920 he was president of the local RSA and four years later he was appointed as a councillor to the town’s Chamber of Commerce.



By 1920 Ivan was president of the Dannevirke RSA. In this portrait his RSA badge can be seen on his jacket’s right lapel.

### Taking to the air again

Despite his experience with the RFC, he retained an intense interest in aviation. During the second week of February 1923 he attended the first refresher flying course for wartime pilots to be held at Sockburn (later Wigram). As noted below, during the course he was obliged to carry out a forced

landing at New Brighton. In advance of this course, on 7 November 1922 he applied for enrolment on the Air Force Reserve List (although there was as yet no actual air force as such).

On the application form Ivan entered his wartime rank as “2Lt acting Capt”, although he was certainly only a second lieutenant during his brief and unhappy sojourn with 60 Squadron, and if he had undertaken acting captain duties while instructing, his role as such was not officially recognised in the pages of the *London Gazette*. Where he was asked for his “demobilisation date from RAF [sic]” he entered “March 1917”, making no mention of a resignation.

Flying was not the only fast means of transport that fascinated Ivan. Another was fast cars, one of which on Sunday 15 April 1923 almost led to his being killed or seriously injured.

*The Poverty Bay Herald* published an account of the spectacular accident next day: “A rather sensational motor mishap occurred early on Sunday morning. A car, containing Ivan L. Kight (a young airman who was in the recent forced landing at New Brighton), and L. Cowan, was proceeding south from Dannevirke, and crashed into the side of a bridge in Rawhiti street.

“The high-powered Packard stripped the whole side of the protecting rails, and traversed the structure with two wheels on it and two wheels over the edge of the bridge, 30 feet long, over a creek 30 feet below, and but for the outside wheels bumping the projecting stay planks the car must have toppled over. It went a couple of chains beyond the bridge before it was pulled up, and then caught fire. Neither of the occupants was hurt. The car was extensively damaged.”

It is not stated who was driving but very likely it was Ivan—letter writer “Observer II” of New Plymouth, who apparently knew of him, wrote in the 25 February 1976 issue of the *Taranaki Daily News* that Kight “was a fearless gentleman whose astounding feats in motor cars are well worth relating”, although unfortunately he didn’t go on to relate any in the letter!

Ivan was also a keen horseman, a member of the Dannevirke Hunt, and apparently enjoyed deep sea fishing too. On 8 January 1926, after a 2hr contest, he caught an 11ft 6in swordfish off Mayor Island, the first of the season.

On 14 June 1923 Ivan, on being appointed to a commission as a lieutenant, became one of the 72 founder members of the New Zealand Air Force (Territorial) which was formed on that date along with the New Zealand Permanent Air Force (NZPAF). In May 1926 he was promoted to captain, the rank being re-designated flight lieutenant in December 1929 when the two air forces replaced their army ranks with those of the RAF.

In December 1920 Ivan had become engaged to Miss Eileen Clifford, but the relationship did not last for on 20 February 1924 he married Miss Eleanora (Norah) Armstrong. Norah was the second daughter of Mary and Frank Armstrong of Akitio, 85km southeast of Dannevirke.

In February 1928 Norah’s sister Esther also married a man with flying connections—Edwyn A.F. Wilding, brother of the famous tennis player, the late Anthony Wilding. In August 1917 Edwyn became the first pilot to graduate at the Canterbury (NZ) Aviation’s flying school at Sockburn.

At the time of his wedding, Wilding was a lieutenant in the NZAF, and Ivan’s grandson Edwyn (Ed) Kight is named after him. Two of Norah’s brothers, Hamish and Brian, would also take up flying in 1929—perhaps influenced in this direction through their family connection with Kight or Wilding?

Ivan does not appear to have attended any of the 1924 refresher flying courses at Wigram, perhaps because of his wedding, but he was there again in early February



Ryan B-1 monoplane Aotearoa runs up its engine, reported elsewhere to have been photographed so in the United States but more likely at Australia’s Point Cook or Richmond aerodromes. The Australian Controller of Civil Aviation forwarded the appropriate registration forms to Moncrieff at Point Cook on 24 December 1927 and advised him that the “registration letter group allotted to your machine is G-AUNZ”.

1925, along with John Moncrieff (Wellington) and George Hood (Masterton), with whom he would become closely associated in the first trans-Tasman aerial crossing attempt.

Ivan was also present with Moncrieff during the course held during 8–17 March 1927, a highlight of which was the first visit to the aerodrome by Royalty. On the 15th the Duke of York was introduced to the fliers in attendance.

### Organising an aerial crossing

Serious interest by New Zealanders in making the first trans-Tasman crossing by air dated back to 1921, but by 1927 none, including a 1925 proposal by Moncrieff (to be accompanied by wireless operator Victor Carmine), had got off the ground, so to speak.



John Moncrieff had been keen to make a trans-Tasman flight since 1925, but it was not until 1927, following Lindbergh’s solo flight across the Atlantic and in partnership with Ivan, that the attempt became a reality.

According to a later newspaper account, it was during the March 1927 refresher course that Moncrieff’s ambition to fly the Tasman resurfaced as the result of discussions with Ivan. The pair drew up a proposal for the attempt but were stymied by the lack of finance, as it appeared unlikely that such a risky endeavour would attract much support from the public.

Just two months later, however, a stunning northern hemisphere aviation achievement looked likely to help turn the dream of a trans-Tasman flight into a reality. On 20–21 May American Charles Lindbergh made the first successful non-stop solo crossing of the Atlantic by air, flying from New York to Paris in 33½hr in Ryan monoplane *Spirit of St Louis*.

If a single-engine Ryan could fly 3600 miles non-stop, it should have no difficulty in making a crossing of the Tasman which was well under half that distance. The rise in aviation’s possibilities in the public mind as a result of Lindbergh’s flight was also encouraging.

Moncrieff was thus able to persuade

his uncle, J. McCrorie of Dunedin, to make a substantial contribution towards a trans-Tasman attempt, which he did on the condition that the additional funds could be raised in New Zealand.

Among one-time NZAF officer Noel L. Vale’s memorabilia held by the Air Force Museum of New Zealand is an undated (but prior to 6 December 1927 and most likely November) incomplete list of contributors to the Tasman Flight Fund. This records McCrorie as contributing £500; Sir R.D. Douglas McLean of Napier, Ivan and his father-in-law Frank Armstrong £250 each; six others £100 each; and 18 others between £25 and £50 each.

With his uncle’s financial commitment secured, Moncrieff travelled to Dannevirke in July to meet with Ivan to discuss securing the balance of funds, purchasing an aeroplane similar to Lindbergh’s and going through the many technical and practical details associated with carrying out the flight itself.

Also brought into the partnership were Archibald (Arch) McNicol, managing editor of the *Dannevirke Evening News*, and Hawke’s Bay sheep farmer Ronald J. MacDonald. Both men would help raise funds and act as trustees.

The plan was for both Ivan and Moncrieff to act as pilots of a Ryan monoplane on the flight. In the event another would take Ivan’s place on the flight, but without his organising skills it is doubtful if the attempt could have been made at all.

The most comprehensive accounts published to date of the tragic story of the flight are the first chapter of Chris Rudge’s 2001 book *Missing – Aircraft Missing in New Zealand 1928 – 2000*, and Bill Conroy’s *The Nation Waited – the first attempt to fly the Tasman Sea* published last year.

This account, however, concentrates primarily on Ivan’s role in the enterprise but also provides additional information and corrects a number of errors found in the two books.

In late July, Ivan cabled Ryan Airlines asking for a quote for one of its monoplanes. (Ryan Airlines was about to be renamed as B.F. Mahoney Aircraft Corporation, Mahoney having earlier bought out his partner T. Claude Ryan.) The quote was received on the 28th and 11 days later, following a meeting between Kight and Moncrieff in Wellington, the New Zealanders placed an order with the company.

Their Ryan B-1 Brougham monoplane, later to be registered G-AUNZ (the last four letters representing the intended flight from Australia to New Zealand) and named *Aotearoa*, was powered by a Wright J-5C 220 hp Whirlwind radial, the same engine model as used by Lindbergh. Externally the only noticeable differences were the *Aotearoa*’s reduced wingspan, 4ft less than the *Spirit of St Louis*’ 46ft, and its windscreen (of which the *Spirit* had none!). It would also feature an extra fuel tank to give it the necessary range to make the crossing, the total fuel requirement though amounting to only about half that carried by Lindbergh.

To be continued



# The mystery of Bert Pither

by Peter Owens



Although Bert Pither's claimed flight from Oreti Beach was never witnessed or verified, the faithful replica has been flown several times by Jerry Chisum, including here for the first time at Mandeville.

Prior to the Walsh brothers setting up a highly regarded flying school in Auckland at the beginning of WWI, most people engaged in the manufacture and operation of heavier-than-air machines were seen as eccentrics, showmen or both. This is unfair as, included among the pioneers of aviation in this country, were fine engineers and brave men.

Herbert John Pither was probably somewhere in the middle but with a major claim to fame—even if it has not been substantiated. This Invercargill bicycle shop proprietor, who lived a colourful life, designed and built one of New Zealand's first powered aircraft—and if in fact he actually flew it, would have been the first to actually leave the ground in controlled flight.

Bert Pither's family immigrated to New Zealand in the 1870s and as an adult he moved south where he became involved in the nascent bicycle riding, building and repair business. He was well-known as a road cyclist in the south in the early years of last century when cycle racing was a most popular sport.

According to contemporary accounts, Bert Pither had a bent for matters mechanical which accounted for his success in the bicycle and engineering industries. He was known to be strong and muscular which contributed to his success in the sport of cycle racing.

Pither was interested in engines and arrived in Invercargill driving a car he had built to his own design. He ran an engineering business in Invercargill's Kelvin Street for about four years from 1906 and was much in demand for his petrol-driven engines for boats and agricultural machinery.

But despite newspapers of the day recording anything out of the ordinary, little is known about the aeroplane Bert Pither designed, built and allegedly flew. No plans, blueprints or details of specification of the aircraft exist, nor is there any solid proof that it was ever flown because nobody, except Pither himself, saw it fly at Oreti Beach in July 1910 as he continued to assert.

Pither, however, had a reputation for being somewhat a stranger to the truth, and most people in Invercargill at the time discounted his claim.

There is only apocryphal evidence that leans heavily on the writings of an unnamed

reporter for the *Southland Daily News*. That paper recorded in July 1910 that Pither had told a reporter that he flew his aircraft at Oreti Beach near Invercargill on or about 3 or 4 July 1910.

While there is no reason to doubt the truthfulness of the reporter, Pither himself, by refusing requests for a second flight from Oreti Beach, encouraged almost universal disbelief in his alleged feat. In fact he left Invercargill not long afterwards, rather under a cloud as a result of a business arrangement. He was alleged to have attempted to seek money under false pretences from P.H. Vickery, a leading and shrewd Invercargill business leader.

Bert Pither worked alone in his Invercargill garage to produce his monoplane, which was advanced for its time. He built the airframe from brazed steel tubes (bicycle construction was at the forefront of technology at the time) when most aircraft were being made from wood, and he also built his own V-4 engine. He took the aeroplane to Oreti Beach—the same strand on which the celebrated Burt Munro later tested and raced his Indian motorcycle.

Then came the great moment. Pither claimed he flew about a mile in a straight line at a height of around 25–30ft on 5 July 1910. The only problem with Pither's claim is that there were no witnesses to his flight and so it cannot be verified.

The aeroplane never flew again although it was displayed at South Island centres. It seems Pither had fallen in with several unusual showmen, including a fairground wrestler, and ownership of the aircraft passed to them. Its ultimate fate is unknown, but that is not the end of the story.

Colin Smith, vintage aircraft specialist of the Croydon Aircraft Company at Mandeville, near Gore, built a replica of Pither's aircraft to put the 1910 design to a practical test. While he had no plans or specifications of the historic aeroplane, working drawings were able to be produced from usefully detailed contemporary newspaper reports and photographs.

Engineer Bill Sutherland of Waikaka, near Gore, built a lookalike Pither V-4 engine using Cirrus cylinders, and the engine and propeller combination was set to the power output specified by Pither (250lb or 113kg). This was to test whether that was



Having been flown by Ken Wallis, the Wallbro replica sits in the Shuttleworth Collection. Remarkably similar to the Pither replica, its ailerons are a modern concession to controllability.

frey, sons of the original Wallbro builders, set about making a flying replica of the 1910 aeroplane. With no parts or plans to go by, Ken scaled the construction using original photographs and his father's known height for comparison, and a chance finding of a comprehensive contemporary technical description verified all dimensions, right down to the size and gauge of steel tube.

Ken Wallis, one of Britain's more interesting aviators and builder of numerous autogyros of his own design which he used to



Jerry Chisum does a Bert Pither impression while Maeva Smith shows the replica V4 engine.



sufficient to put the craft in the air.

The only design concessions were added for safety reasons and made no difference to performance. These, plus the heavier engine, made the replica 77kg heavier than Pither's craft.

This replica machine was tested at Mandeville on 18 February 2005, flown by Jerry Chisum, probably New Zealand's most experienced pilot of vintage and unorthodox aircraft. It flew; in fact it flew in the morning and again in the afternoon. It has also flown at Omaka, Blenheim.

Now the Pither replica stands in a position of honour in the Croydon Aviation Trust's museum at Mandeville, alongside the Croydon Aircraft Company's hangar and workshops, and is a source of considerable interest to aviation buffs from all over the world. Some people make a special visit to see this important contribution to New Zealand aviation history.

Whenever the Pither has been flown by Jerry Chisum, it has attracted spectators. On its first flight at Mandeville, it didn't exactly "take to the skies" but rose steadily to about 25ft (the same height at which Pither said he had flown) and with Jerry at the controls puttered along the runway for about 200m before landing and, brakeless, having to be

persuaded to stop before the hedge.

Jerry turned it around and flew back again. This was repeated several times, much to the gratification of a large crowd of spectators and backed by a lively commentary by media guru and vintage aircraft buff Jim Hopkins.

While the question of whether Bert Pither ever flew his aircraft at Oreti Beach will never be answered, the fact that this replica has been flown on several occasions greatly increases the probability that he was successful in being the first New Zealander to fly, especially when placed alongside Pither's own description of his experience.

It is worth noting that at the time Pither did or did not make his historic flight, he had never before flown an aeroplane—nor had he ever even *seen* one!

## A similar replica

by John King

At the same time as Bert Pither was building and perhaps flying his aeroplane in Southland, on the far side of the world a remarkably similar—in construction, appearance and motive power—project was being undertaken. Brothers Horace and Percy Wallis of Cambridge, England, were accomplished motorcycle builders and racers and in 1908 set about constructing an aeroplane in order to win a £1000 prize for the first all-British aeroplane to fly.

They were beaten to that, but unusually for the period they used steel tubing for the fuselage, inspired by their knowledge of motorcycle construction in much the same way as Pither with his bicycles. The Wallbro was powered by a 25hp JAP engine of similar V-4 configuration to Pither's own, and after public exhibition it was taken to Abingdon and flown—and crashed—in 1910. The aeroplane was scrapped after the shed housing it blew down in a storm and their father withdrew his support.

In 1973 Ken Wallis and his cousin Geof-

set speed and distance records, some of them still standing, flew the replica Wallbro several times in 1978. No V-4 JAP engine could be found, so it was powered by a McCulloch flat-four two-stroke drone motor, the only modern type able to be fitted between the existing fuselage frames. His first flight, closely corresponding to Pither's claim, was for a mile or so at 20–30ft and 30mph.

The Wallbro replica now resides in the Shuttleworth Collection at Old Warden, Bedfordshire.



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# The Eagle has been useful

Superintendent John Price, Canterbury Police District Commander, says the Police Air Support Unit, commonly known as Eagle, has been trialled from a base in Christchurch for five weeks from 17 February. By the end of week four Eagle had attended 305 jobs with 210 apprehensions or people found due to the help of the eye in the sky.

Supt Price says this translates to 69 percent of offenders being caught or people being found, using Eagle as a policing tool. He says in its first 24hr on trial in the Canterbury district, one of Eagle's first jobs, with the assistance of ground staff, was to locate a stolen motorcycle and a suspicious car seen leaving a local tavern car park.

This resulted in ground staff involved in the operation communicating with air staff, and with specific instructions and expert guidance the staff identified a route where the stolen bike and car could be blocked in and stopped by staff. There was success for the teams involved when three arrests were made, one stolen motorcycle recovered, one stolen car recovered and two men arrested and charged with possession for supply of methamphetamine.

The operation of the Eagle and its support team made an immediate impact on the local scene. Within the first week, a traffic incident unfolded where a car was spotted weaving all over and driving on the wrong side of the road. It was followed by an informant, then police, for a considerable distance to Pigeon Bay, which later led to a successful apprehension.

Eagle monitored the vehicle and the manner of driving made it clear that a serious crash would occur if the car was not stopped. The crew located an appropriate place to safely land the helicopter and conduct a vehicle stop. The car was stopped without incident, but the driver, after refusing breath

and blood-alcohol tests, was arrested. The 33-year-old woman was due to appear on traffic charges last month.

At the end of week two, on 29 February after 10pm, a police patrol unit was in pursuit of a vehicle failing to stop after leaving a nearby bar in Darfield travelling at high speed. As Eagle was close, the crew obtained long-range observations while the patrol car abandoned the pursuit on Wards Road. The vehicle was travelling at high speed—in places over 130km/hr on gravel roads.

The vehicle entered a large rural property on a road nearby. An occupant climbed out of the driver's window and opened a gate, at which point five other occupants exited the vehicle, also via the windows. The Eagle crew located one man attempting to flee but who quickly realised he was not getting away. The spotlight from Eagle helped direct ground staff to him, and all six occupants were taken into custody initially.

By week three, Eagle was being used for several traffic-related offences, which meant some of the danger was taken out of what can sometimes be risky work to police and the public.

In Timaru on 4 March just after 10am, a vehicle failed to stop for police, but it was lost after the patrol car abandoned the pursuit. It was successfully located in the car park of a tavern in town, and two men were seen running north from the tavern. A dog unit tracked them to the corner of Lough and Wilson Streets. Once on the scene, Eagle began a search of a park which was the last known location of the offenders.

During the search a suspicious vehicle was sighted on Meremere Street, with two occupants inside. While they were not related to the failing-to-stop job, the passenger was found to be in possession of not only drugs but also a pistol, which police thought was linked to a rural burglary where fire-



Peter Owens reports

Photographs via NZ Police

About-to-retire Police Commissioner Mike Bush and Minister of Police Stuart Nash.

arms were taken.

The man was arrested and charged with seven offences—two charges of possession of a weapon and ammunition, four charges of possession of methamphetamine for supply and one charge of receiving property (believed to be a firearm from the rural burglary).

Eagle continued surveillance for the offenders who had failed to stop in the previous job, and the suspected driver was eventually located inside his home address several kilometres away by ground staff making inquiries there. The driver was arrested for failing to stop and also for a historic burglary fingerprint match.

Similar to these catches, on 4 March at 8.30pm in Darfield a Subaru vehicle was found swerving all over the roads with no headlights on. The driver was located, monitored and stopped with the assistance

of Eagle, and after breath testing was found to have 1012 micrograms of alcohol per litre of breath. The passenger, a known offender, was found to be in possession of drugs.

A similar traffic incident in Marshlands on 6 March at 12.45am identified a stolen vehicle travelling at the dangerous speed of 160km/hr. Eagle arrived on scene soon after and identified the target vehicle driving southbound at a reduced speed on Main North Road. No units were in pursuit or close to the vehicle due to the speed, so Eagle provided commentary and suggested suitable locations for ground units to set up spikes on Pound and Ryan Roads.

The spiking impacted all of the vehicle's tyres and it slowed to a stop on Pound Road. The driver got out and ran to a bush line, whereby Eagle provided support to a police dog unit which located the offender who was charged with driving while disqualified and

# VR technology for flight training

by Anke Smith

Massey University has been developing its digital transformation strategic initiative since 2018. Current challenges presented by Covid-19 to educational institutions regarding the delivery of quality courses online have further reinforced the huge potential for digital technology.

Jean Jacoby, Massey University's digital innovation director, says one team is focused on supporting a three-year transformation of pedagogy and learning delivery across the university.

"This initiative has identified several focus areas: the development of digitally enriched courses and programmes through effective curriculum design; the support of staff wishing to develop their teaching/facilitation skills; increased technical support; and experimental work with new and emerging technologies," Ms Jacoby says.

New and emerging technologies include the trialling of virtual reality for teaching. The project includes 3D scanning teaching resources for several programmes—such as aviation—enabling rare, valuable or difficult-to-distribute resources to be made available to Massey's on-line learning community as well as the wider population.

Massey University School of Aviation has a history of being at the forefront of technological innovation within the New Zealand aviation community. In keeping with this tradition, the school is currently planning to embark on a trial led by flight instructor Glen Ross that will utilise leading-edge virtual reality (VR) computer technology as an augmentation to the traditional flight training methods already in place.

Originally from the UK, Glen Ross has been a member of the flight training team at Massey University's School of Aviation since April last year. As a B category flight instructor, he delivers both aviation theory and practical flight training to students enrolled in the Bachelor of Aviation degree

programme. At the end of the practicum stage of their studies they will achieve CPL, MEIR and NZATPL exam credits, after which they will complete the degree via aviation business management courses or the flight instructor course.

Glen brings experience from a varied career that includes over 20 years in IT roles and six years as an aircraft technician in the RAF. He also has extensive RPAS experience, including time spent as chief RPAS pilot and director of operations for a New Zealand company specialising in viticulture aerial imaging.

Just to show that Massey's instructors are a truly varied lot, Glen also admits that in the past he worked as a model and even as a stuntman—and to being a huge sci-fi and fantasy geek, all of which will come to play in one form or another in his next project.

As Glen explains, "Virtual reality (VR) is a computer technology that utilises a combination of hardware and software to produce a three-dimensional (3D) interactive experience. Unlike traditional computer systems that use two-dimensional screens, VR visual information is delivered to the user through small high-resolution screens, similar to those found in mobile phones, via a head-mounted display (HMD) worn over the eyes.

"Audio to accompany the video is also provided by the HMD through integrated speakers. In addition to visual and aural information, other sensory input/output data can be delivered through the use of bespoke hardware. This might include flight controls such as control sticks, throttles and rudder pedals, haptic gloves and other garments fitted with feedback sensors and motion devices.

"Combined with ever more powerful computer hardware and sophisticated software, VR now has the long-awaited ability to fully immerse operators in a 3D virtual environment that responds to their actions and is often indistinguishable from reality.



Massey University flight instructor Glen Ross trials his prototype VR rig. Love the socks!

"The rapid advances in technology and the capabilities of VR have significantly bridged the gap between professional and consumer flight simulators, making VR a viable flight training alternative. The miniaturisation of small, very high-resolution displays and the availability of lightweight materials have led to rapid advancements in HMD technology.

"Unlike earlier models, which often induced simulator sickness, the new generation of HMDs featuring current processing hardware deliver graphics with crisp rendering and smooth tracking information, and have greatly reduced these effects.

"VR hardware in concert with computer hardware and software now has the versatility to represent myriad environments to a never-before seen degree of accuracy and realism. Coupled with previously unachievable levels of interaction, VR now has the ability to deliver high-fidelity total immersion flight training experiences."

Glen proposes to further explore the benefits to flight training via VR technology for

Massey's BAv students—which could have significant savings in maintenance, fuel and airframe expenses, and further reduce the school's carbon footprint. The technology will also be considered for application to GA flight training in New Zealand.

The Massey School of Aviation currently has a prototype VR rig, modelled on the Diamond DA40 operated by the school and built by Glen. The school hopes to purchase additional upgraded VR flight simulation equipment that will enable it to operate a further two or three VR simulators.

In addition to the proposed trial involving flight training, Massey University School of Aviation also intends to conduct a number of academic research projects investigating the uses and potential benefits of VR within flight training, general aviation and human factors contexts.

Glen is currently studying toward a Master of Aviation at Massey, where his research focus will dovetail neatly into his work concentrating on potential applications of virtual reality in aviation training.





failing to stop. Eagle's involvement helped reduce the possibility of major damage or injury.

Eagle assisted with other jobs, including locating a dangerous driver in Christchurch

Central on 9 March, another in New Brighton on 10 March and yet another in Wainoni on 13 March. All of them were arrested and charged with driving and other offences.

Eagle has helped police ground-based

staff by attending a range of events including a number of road policing jobs. "It's been a good tool to assist with our frontline teams working to halt offenders in their tracks," according to Supt Price.

The trial has been completed and the staff and helicopter have returned to Auckland. Supt Price says there will be a full evaluation which will be considered by police on the potential for any future expanded deployment.



# ARMCHAIR AVIATING

## Through to the End 487(NZ) Squadron RAF

by David Palmer and Aad Neeven

370 pages A4, hard cover.

RRP: \$80 plus \$9 P&P from davidpalmer7052@gmail.com

**Reviewed by Nicholas McIndoe**

Reviewing a book written by the *Aviation News* proof-reader is a task approached with some trepidation. But David Palmer needn't worry—*Through to the End* is a well-researched, well-written and readable book that will be well received by both the serious historian and the lay person with an interest in military aviation history, particularly the RNZAF squadrons within the RAF.

For the culturally unaware, the squadron's motto was Ki te Matunga—"Through to the end".

The only blemishes worth mentioning are a case of seeing double and columns not aligning, leaving gaps of white on certain pages. But that's just me being picky, and it's a credit to the authors that I need to be picky—this is a quality book.

Now that's out of the way, they say never judge a book by its cover, but *Through to the End* is one of those books where you can get away with it. The first impression is an attractive painting of two 487 Squadron Mosquitoes adorning the cover. This high standard continues throughout the pages.

At 369 pages in A4 size, the book is large and not light. Complementing the text are black-and-white historical photos, perhaps my favourite of which appears on page 186. Although this photo is of 464 Squadron and not 487 Mosquitoes, it is said that at times 487 flew so low (think Ray Hanna low, maybe lower) that salt spray covered their windscreens while crossing the North Sea.

This photo shows that and is accompanied by the following caption: "... Flying this low for extended periods is challenging at the best of times, but for a measure of the skill and courage required of these men, add to that the blurring of the sea that shows how fast they were flying, then factor in the stress of keeping formation while watching for enemy planes, all overshadowed by the difficult and dangerous task ahead."

The only coloured illustrations appear at the end of the book. Preceding various glossaries, bibliographies and indexes of statistical information, are shown 487 Squadron memorials in The Netherlands and France.

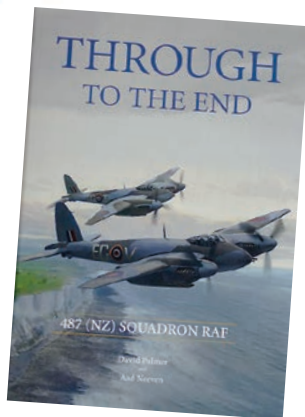
There is also a pleasing collage of KA114—the first de Havilland Mosquito to fly since 1996, and restored by Avspecs right here in New Zealand, complete in 487 colours.

There are numerous maps and diagrams throughout. All this completes a book which by the author's own admission is "a belated acknowledgement" of the ordinary young men who served on 487 Squadron—one of WWII's elite units. This book deserves to reside on the coffee table and to be read again and again.

The foreword of RAF ACM Sir Andrew Douglas Pulford, himself an army support pilot, sets the scene for a story that is "among the most dramatic of any Allied air force unit".

Reading *Through to the End*, it is surprising that 487 Squadron has received so little attention. The unit, formed in August 1942 as one of three squadrons under 2 Group, took part in some of the most famous and hair-raising raids of WWII.

The squadron was initially equipped with the Lockheed Ventura, which almost immediately showed its inadequate performance. 487's first raid, in December 1942 on the Phillips factory in Eindhoven, The Netherlands, resulted in the loss of three Venturas, including that of the CO, Wg Cdr Seavill, who was killed.



An important point is noted by the reviewer here—this book is about the human side of WWII. A photo of the wreck of Seavill's Ventura and one of German soldiers loading the crews' bodies into coffins graphically illustrates this point.

Worse was to come. "Black Monday", 15 January 1945, has received a lot of attention over the years, but how many know almost an entire New Zealand

squadron was wiped out on 3 May 1943?

Sqn Ldr Leonard Trent led a daylight 11-Ventura Ramrod—a raid on a specific target that must be continued regardless of losses. This mission was designated Ramrod 17 and called for the destruction of the Amsterdam power station.

The Venturas, led by Trent, were to cross the Dutch coast at low level, escorted by six squadrons of Spitfires. Two more squadrons of Spitfires were to provide high cover over the target. All aircraft were to fly at sea level to avoid detection by German radar.

But the Spitfires flying top cover mistimed their departure from England, arrived early and failed to fly low enough to avoid detection. The ensuing disaster resulted in the loss of all but one of the Venturas after they were bounced by Bf 109s and Fw 190s as they crossed the Dutch coast.

Again, the human side, as told by *Through to the End*, is nothing short of heart-wrenching. Only one Ventura returned: "At 1855 a badly shot-up Ventura staggered in to land at Feltwell ...

"... 'About the time the aircraft were due back we'd go out and play football or whatever until they arrived. But I can remember [New Zealand armourer] Charlie Bush, who was considered a hard man but with a heart of gold, cycling around the perimeter track, and he was crying his eyes out' ...

"Len Trent had lost his squadron. At the head of the formation he could see little of events, but his crew must have reported as, one by one, 'B' Flight fell. Imagine that. The fear, the feeling of losing your 'brothers', the feeling of responsibility—on the shoulders of a 28-year-old."

Trent's Ventura was the only one to successfully drop bombs on the target before being hit itself and breaking-up in mid-air. But not before he managed to shoot down a Bf 109 using his Ventura's forward machine guns. Trent and his navigator were flung clear and became POWs. Sadly, the other two members perished in the ensuing crash.

The squadron recovered and found fame flying the Mosquito FB VI. Other famous missions that 487 Squadron took part in included a raid on Amiens Prison that freed 200 inmates; against the SS; and against the *Shell-hus*—the Gestapo headquarters in Copenhagen, Denmark.

Trent eventually and controversially received the Victoria Cross for his heroic actions on 3 May 1943, but to take nothing away from him—does it matter? Reading this book really makes you question the morality of war. Not only does it examine the human side of the veterans but also the innocent victims of war.

We hear of the Stein family—all killed apart from one of the children (Maria), when a Ventura crashed into their home during Ramrod 17.

Or the 86 girls killed when bombs struck their school.

Many New Zealanders are rueing a lack of freedom during the current lockdown. Buy a copy of *Through to the End* and learn what real hardship is.

## A Touch of Madness

by Keith Neylon

Invercargill, JUS Consulting, 2020,

426 pages, soft cover.

RRP \$59.95, also available at \$49.99

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[www.atouchofmadness.nz](http://www.atouchofmadness.nz)

**Reviewed by Garth Cameron**

I have met countless aviation enthusiasts, many of them as enthusiastic as I am, but Keith Neylon is the only one who is more enthusiastic. We met at a do at Howard Paterson's office in Otago House in Dunedin. It must have been around 2002.

Howard's parties were justly famous for the lavish hospitality and it was just the right atmosphere to connect, and I quickly established that Keith really had been there and done that and was modest but could spin a good yarn about his experiences if asked.

Keith's career arc might be unique as it includes coal mining, shearing, soldiering (CMT), ag flying, chopper flying (in the wild west days) and on to a successful career in the big-budget side of primary industries. Not many men who grew up in Nightcaps and left school at 15 have had the New Zealand Order of Merit pinned on them by the Governor-General.

The tone of the book is set by the time the reader has got to the second paragraph of the first chapter. I won't quote it because the editor probably wouldn't publish it. Suffice it to say that it was clear that Keith decided at an early age that he would have his say, no matter what those around him thought. Or the consequences.

Bill Hewitt took Keith on as a loader driver (of an ex-military GMC) when the firm was operating Cessna 185s. Another well-known pilot was working for the firm at the same time, and the book includes some hair-raising anecdotes about flying that was not always safe and sane.

One of the anecdotes concerns the delivery of a load of river shingle from a low flying company aeroplane, which almost wooden several bystanders.

A little later the author finished his CPL(A) and flew Pawnees and then AG wagons. One of the stories involves a low flypast and a portly farmer chasing his tractor.

The author then got his CPL(H) and moved on to helicopters and flew them from the early 1970s to the early 1980s, initially with Luggate Game Packers. Keith's time on helicopters is my favourite part of the book, full of anecdotes which leave the reader wondering how anyone survived. Many did not.

The text is enhanced by numerous colour photos, which accurately convey a sense of what it must have been like. At one point noises thought to be from the transmission turned out to be near misses from someone shooting at the helicopter. The culprits must have been dismayed to find that someone flying a helicopter had hooked their tents with a skid and flown off.

Much of Keith's helicopter flying was on Hiller 12Es, a good machine but underpowered by current standards. When the first Hughes 500 arrived, he recognised that it was a game-changer, and so it was. A part of the story that gets detailed and very interesting coverage is the "venison wars" and the government's attitude to which operators got the rights to operate in certain areas.

No punches are pulled in this part of the story. Or any other part.

Having survived, moved into management and prospered, Keith moved onwards and upwards, being entrepreneurial in the primary industries sector. The author does not forget to name and thank the backroom girls who contributed so much to his enterprises.

Not content with 2000hr of ag flying and 8000hr on helicopters, Keith bought Beechcraft Bonanza ZK-EDJ in 1986 has done about 2000hr on it.

The aviation stories will appeal to any enthusiast, and someone with no interest in flying will find that the business part of the book makes it worth the cover price. A great read and highly recommended.





# New Zealand Aeronautical Trusts Annual Awards

by David Saunders



Every year the New Zealand Division of the Royal Aeronautical Society (RAeS) nominates deserving individuals for a series of awards. We all know of someone who deserves recognition in the field of aerospace, but how many of you know how to go about it and what to do? Well, wonder no more and read on.

These awards are open to the New Zealand and Southwest Pacific aviation community and include both young and seniors alike. The awards are listed below and follow some set criteria.

However, the number of nominations has been dwindling recently. The New Zealand Aeronautical Trusts Ltd (NZATL) and the RAeS are seeking nominations from our aviation community. So please consider your deserving staff, significant peers and studious juniors for an award this year.

## What do you have to do to nominate someone?

You are required to write a citation for the submission, which could also be accompanied by supporting material. Go to the NZ Division RAeS website, <http://www.raes.org.nz/awards>, where more information can be found, including detailed lists of past recipients and their citations, which we encourage you to read (and copy format) as an example.

## What is the New Zealand Aeronautical Trust Limited?

NZATL is an independent trust company owned by the NZ Division of the RAeS. NZATL has been honouring outstanding achievers in New Zealand and the Southwest Pacific aviation community since the early 1960s, when the main Walsh Fund was established as a memorial to the New Zealand aviation pioneers Leo and Vivian Walsh. In the years that followed, several more trust funds were added to the portfolio (with specific requirements established by the settlers).

## Who qualifies for an award?

The awards recognise the achievements, innovation and excellence of both individuals and organisations. These honours are for achievements and contributions in all disciplines of aviation, including academia, aircraft maintenance, operations, legal, journalism, aerospace manufacturing, air transport, air traffic control, defence, government and research. Some awards are for young people entering the industry and act as encouragement to them as they begin their careers.

## Who can nominate for an award?

Any individual or organisation can nominate another individual or organisation for an award.

## Who selects the winners?

The NZ RAeS Divisional Council and NZATL Awards Committee assess all nominations and select the successful applicants under the terms of the individual award criteria. The Divisional Council also considers nominations for Meritorious Service awards. (See below.)

## When are the awards announced?

The awards approved for any calendar year are usually presented at the Royal Aeronautical Society annual dinner, which follows

the AGM. In recent years the society has combined the awards presentation with the annual dinner that takes place after the annual symposium.

All award nominations are acknowledged, and after scrutiny by the Awards Committee successful applicants are invited to the annual dinner to receive their awards.

The awards available are as follows:

### Geoffrey Roberts Award

This award is open to any young person, a New Zealand citizen, who has the firm intention of following a career in civil aviation in New Zealand. At the time of selection the candidate could be in training in preparation for taking up such a career or could be gaining experience in civil aviation overseas.

The award consists of a silver medal, a certificate and a monetary amount.

### Douglas Patterson Award

This award is to encourage those persons making a career in aviation in South Pacific countries. The award is intended to assist the candidate to gain experience in the aviation industry in New Zealand or overseas.

The award consists of a silver medal, a certificate and a monetary amount.

### Campbell Award

This award comes in two categories: To encourage any person showing potential in the profession of aviation journalism. Candidates must be under 28 years of age at the time of the application.

To recognise established aviation journalists or writers who have demonstrated their ability and dedication in this specialised area.

The award consists of a silver medal, a certificate and a monetary amount.

### Michael J Neville/Boeing Airplane Company Award

This award is made to a young person working in aviation in New Zealand who demonstrates excellence in work ethics, values, application and results, and has a firm and appropriate intention for further



## Royal Aeronautical Society Symposium 2020

The RAeS New Zealand Division is planning to hold its annual symposium on Friday 30 October.

Depending on the Covid-19 alert level in place in the months before that date, the symposium will be either the traditional public event—again to be held at the James Cook Grand Chancellor Hotel—or a virtual event using Zoom. If the event is public, it will be held in association with the annual New Zealand Aeronautical Trusts and RAeS awards dinner.

The RAeS has been using Zoom for council meetings and continuing professional development for some time and has recently extended this to the monthly presentations carried out by the RAeS branches around the country.

By the time of the symposium many of our members and potential attendees will be very familiar with Zoom through its increasing popularity for everything from business meetings to family chats and virtual Friday drinks.

study or learning.

The award consists of a special medal, a certificate and a monetary amount.

### Ian J Diamond Award

This is made to a young aviation professional wishing to embark on a course of higher academic study leading to a degree in an aviation-related subject and with the firm intention of participating in New Zealand aviation.

The award consists of a special medal, a certificate and a monetary amount.

### E.A. Gibson Award

This award recognises the contribution of the first Director of Civil Aviation, E.A. (Gibby) Gibson to the establishment of civil aviation and particularly his support for the establishment of the agricultural aviation sector in New Zealand.

This award is for innovation or another form of excellence within the field of agricultural aviation in New Zealand.

The award consists of a silver medal and a certificate.

### Meritorious Services Award

This award is made by the council to recognise long term contributions or significant practical achievements in civil or military aviation in New Zealand.

The award consists of a silver medal and a certificate.

For special cases of significant merit, a gold medal is awarded.

## Application process

- Applications and nominations for awards can be made at any time during the year, up to the closing date of 1 July each year.
- Applications must be in writing and compiled in MS Word Arial 11 font.
- Citations should be no longer than one page and not exceed 600 words.
- Submitters should refer to previous award citations as a guideline on how to write a nomination for a specific award. (refer to web site <http://www.raes.org.nz/awards>).
- Awards must meet the criteria of the individual awards and provide enough detail supporting the submission to allow proper consideration by the awards committee.

Address all applications to the Division Secretary at the email address given in the “Contact Us” page of the NZ Division RAeS website or follow the instructions and make a submission to the chairman of NZATL.

It should be noted that the Royal Aeronautical Society New Zealand Division and New Zealand Aeronautical Trusts Limited reserve the right to use, publish or post data derived from RAeS lectures, symposia, awards and other activities in the normal course of their business and in appropriate context.

The theme of this year’s symposium will be “Sustainability”. The RAeS selected this theme in principle late last year with an environmental focus in mind. This has now been widened to encompass the dramatic economic and operational impacts of the Covid-19 situation.

Regardless of the format of the event—traditional or virtual—the RAeS expects to be able to present an impressive range of speakers, although our overseas contributors will almost certainly be participating through the web in either case.

The symposium is open to the public subject to a registration fee that is discounted for various groups including members, students and others. If it proceeds as a virtual event there will be no registration fee, but members will be given priority for the limited registrations available.

More details will soon be available on the RAeS website <http://www.raes.org.nz/> symposia The website also has details of symposia held in previous years.

# The Red

by Nicholas McIndoe

At the recent SAA fly-in at Hawera, the editor asked: “How many members have an aero modelling background?” About 75 percent was one estimate.

Whitianga resident Peter Walton is one—but with only one flying model to his name. On 24 January he completed and flew ZK-CCO—a full-size replica Fokker Dr.1 Triplane.

“I was born in 1953, so not long after WWII, and like most kids I grew up reading war comics and building Airfix kits,” says Peter. “I had a Dr.1, before a younger sibling knocked it to the floor and I shot up the remains with a slug gun!”

*Those Magnificent Men in their Flying Machines* was another inspiration. A motor mechanic by trade, Peter decided that he wanted to build an aeroplane that was “somewhere between the Wright brothers and WWI”.

However, after seeing one at an SAA Tauranga airshow and thinking “I can do that, it’s metal,” he settled on a Titan Mustang kit. This aeroplane took longer to complete than expected, with Mike Crene completing most of the build and test flying the aircraft in 2009. Registered as ZK-WSV, it is painted as *Miss B’ Havin*.

“The Mustang was the first aircraft to fly the nest,” says Peter. “I started looking at other options and always thought open cockpit flying would be fun.”

At Oshkosh 2016 Peter met Airdrome Aeroplanes founder Robert Baslee, who invited him to the company’s base in Missouri.

“I bought the Dr.1 kit which arrived in New Zealand that Christmas. The Fokker triplane immediately caught my eye, not only because it’s a full-scale replica but also because it’s the aeroplane the legendary Red Baron was best associated with.”

The Triplane’s internal fuselage structure is chrome alloy, while the wings and empennage are aluminium tubing and ribs—all covered in fabric of course. The engine of choice is the Lycoming O-290.

# RAAF Super

by Nigel Pittaway

On 26 March the RAAF marked 10 years since the arrival of its first Boeing F/A-18F Super Hornet strike fighters. Exactly a decade earlier, the first five of an eventual 24 aircraft touched down at RAAF Base Amberley, southwest of Brisbane, following their trans-Pacific delivery flight from the USA.

Unfortunately, a planned families’ day to mark the occasion had to be cancelled due to the current Covid-19 restrictions, but all 24 aircraft remain in service and the RAAF is looking forward to at least another 10 years of Super Hornet operations.

The Super Hornet, nicknamed ‘Rhino’ in RAAF and US Navy service, was chosen as a bridging capability in 2007, to mitigate the risk of a gap in long-range strike capability between the premature retirement of Australia’s General Dynamics F-111C (in December 2010) and the introduction of the Lockheed Martin F-35A Joint Strike Fighter.

Along the way, RAAF Super Hornets have been deployed to the Middle East Area of Operations (MEAO) on two occasions, and today they are providing a transition capability between the impending retirement of the “Classic” F/A-18A/B Hornet and F-35A final operational capability (FOC) at the end of 2023.

The two-seat F/A-18F was selected over the single-seat F/A-18E under Project Air 5349 Phase 1 (Bridging Air Combat Capability) and the \$A6bn (\$6.3bn) deal for the 24 aircraft was announced by the Australian government in March 2007.

Australian Super Hornets were almost identical to the latest production variant being delivered to the US Navy, known as Block II, except for minor Australia-specific equipment such as a VOR/ILS system and



# Baron flies again



Photographs: Nicholas McIndoe

Apart from the drought conditions, this might have been taken at a German airfield in 1917. Peter's replica Triplane certainly looks the part—certainly not a sight any Allied pilot would have wanted to see. The Red Baron, Manfred von Richthofen, was considered "the ace-of-aces" with 80 confirmed kills. Although feared, he was also highly respected and buried with full military honours on 22 April 1918 by members of 3 Squadron Australian Flying Corps—the chivalrous days of aerial combat. Initially credited to Canadian RAF (1 April 1918 from RFC) pilot Lt Arthur Roy Brown, the origin of the fatal shot has been hotly debated over the years, but most historians now agree it was fired by Australian anti-aircraft gunner Sgt Cedric Popkin.

Peter spends six months of the year in Whitianga and six months in the USA (pre Covid-19 days) so once the Dr.1 arrived in New Zealand he got to work and, working eight- to nine-hour days, the project took a little over three years to complete—although only 15 months was actual aeroplane building.

"It was really enjoyable to work on and pretty straightforward too. In fact, Robert Baslee told me, 'If it gets difficult, you're doing something wrong.'

"But I can't speak highly enough of him; he's a great guy and always gave me the time of day, even considering the time difference. He had one more piece of advice: 'Before you put the fabric on, get it ready to fly. That way you'll find all the little things you've forgotten to do.'

"Actually, the whole American aviation fraternity is fantastic. When I'm driving the campervan over there for six months you call fellow aviators up, let them know you'll be in the area and they welcome you

with open arms."

Peter also acknowledges the help of the "amazing bunch" at the Mercury Bay Aero Club, especially Martin Little and Doug St George who were instrumental in helping apply the fabric.

New Zealand aviation identity Keith Skilling, too, helped paint the Triplane—"I mean someone of his calibre ... did that!"

The scheme chosen is the blood-red Fokker Dr.1 Triplane of Germany's leading WWI ace, with 80 victories, Manfred von Richthofen—The Red Baron—who once stated: "One day, for no particular reason, I got the idea to paint my crate glaring red. After that, absolutely everyone knew my red bird. In fact, even my opponents were not completely unaware."

ZK-CCO sports the serial number FI 102/17—one of two prototype Triplanes.

Richthofen flew the Triplane for the first time on 6 September 1917 and scored two victories in it, praising the new fighter and declaring it "superior to all foes". He went



Above: The Pour le Mérite or Blue Max medal presented to Peter by Keith Skilling. At the start of WWI the Blue Max was awarded to pilots with eight enemy kills, but by the end of the war it had increased to 30 kills. The medal was always required to be worn on a recipient's uniform.

Right: Peter Walton looks pleased with the result. The guns were made by him out of wood and look effective.



back to flying his Albatros D.V (which he despised), while FI 102/17 was shot down on 15 September with Kurt Wolff at the controls.

Inspired by Sopwith's triplane design, the Dr.1 is perhaps the most recognisable aircraft to emerge from WWI. However, despite Richthofen's praise, only 320 were ever built as several inflight breakups curtailed any large-scale orders and led to the type's grounding. By the time it re-entered service, the Fokker D.VII offered superior performance and the Dr.1 was withdrawn in July 1918.

Although manoeuvrable, the Triplane suffered from poor performance at high altitude, was slower than contemporary Allied fighters, was directionally unstable and its ailerons were not very effective

It was also difficult to handle on the ground, something which Peter has countered with the addition of a tailwheel.

He is well aware of the challenges in converting to a 1917 design. "The Triplane is the first open cockpit aircraft I've flown, although most of my flying has been in tail-draggers.

"I was having trouble holding the Triplane straight on takeoff, so I called in two of the best tailwheel instructors going around—Keith Skilling and Gavin Trethew-

ey; you couldn't get any better! Keith has previously owned a Dr.1 replica and flew Peter Jackson's examples. Gavin gave me my Titan Mustang rating. It's important to listen to these people so you don't end up in a pile," says Peter.

"I was all over the place, so Keith offered to hop in and do a high-speed taxi run. 'That way I'll know if it's you or the aeroplane,' he said.

"He came back and said, 'Your idle speed's too high—reset that. You can also slow down by flicking off one mag.' I would never have even thought of that! It shows the benefits of having someone of that league helping you out."

With those idiosyncrasies rectified, Keith took the Triplane about "five or six feet into the air, came back and said, 'Your turn.'"

This resulted in a successful first flight for Peter on 24 January and Keith presented him with a Blue Max (*Pour le Mérite*) medal—"All Dr.1 pilots need to have one!"

"That was a nice touch," says Peter. "What I have learnt so far is that with a decent slipstream over the rudder the Triplane has good control, so don't muck around at low speeds for too long."

Congratulations to Peter and all concerned.

# Hornets celebrate decade in service



Above: RAAF Base Amberley in March 2010 as the first F/A-18F Super Hornets arrive. Right: AA44-215 in service.

the altimeter subscale calibration in millibars rather than inches of mercury.

In common with their American counterparts, RAAF aircraft have the Raytheon APG-79 active electronically scanned array (AESA) radar, a joint helmet mounted cueing system (JHMCS) capability in both cockpits, and ASQ-228 advanced targeting forward looking infra-red (ATFLIR) sensor pod.

Weapons acquired are also the standard range of USN Super Hornet weapons, including AIM-9X Sidewinder and AIM-120C-7 AMRAAM missiles and, to fulfil the long-range strike role, the AGM-158C-1 joint stand-off weapon (JSOW).

The last 12 aircraft in the Australian order were configured on the production line with wiring looms, wave guides and other features to allow later conversion in the field to EA-18G Growler airborne electronic attack (AEA) configuration if required. In the event, Australia subsequently decided to buy 12 new-build Growlers and the 12 jets, known as F/A-18F+, remain in the strike fighter configuration.

## Into service

The RAAF needed to rapidly stand up the F/A-18F capability, as the F-111C was due to leave service just over three years after the Super Hornet was announced, and this was ultimately achieved by close partnership with Boeing and the USN. The US Super

May 2020

Hornet programme was receiving aircraft ahead of schedule and the navy agreed to give up positions on the assembly line to accommodate Australia's requirements.

Training was also able to begin early, with the USN making positions available within its West Coast training squadron, VFA-122, based at NAS Lemoore in Southern California.

The first Australian aircraft was ceremonially rolled off the Boeing production line in St Louis, Missouri, on 8 July 2009, a little over two years after the order was publicly announced.

As mentioned, the first five aircraft arrived at Amberley in March 2010 and the programme was sufficiently mature for initial operational capability (IOC) to occur in December 2010, coincident with the retirement of the last F-111Cs.

The final four examples arrived in Australia in October 2011 and this milestone was followed by FOC in December 2012, achieved ahead of schedule, and on budget.

The RAAF Super Hornets were initially operated by one operational squadron (1 Squadron) and an operational conversion and training unit (6 Squadron). However, the subsequent Growler acquisition saw all 24 aircraft consolidated into an enlarged 1 Squadron for a period, before 82 Wing Training Flight was established this year to take over the training and operational conversion roles as part of an ongoing trial.



Photographs: Nigel Pittaway

## To war

Less than two years after becoming fully operational, Australia deployed six Super Hornets, together with single examples of the Airbus KC-30A multi-role tanker transport (MRTT) and Boeing E-7A Wedgetail airborne early warning and control (AEW&C) platform, to the MEAO in support of coalition forces fighting Islamic State insurgents.

The aircraft formed Air Task Group 630, part of the RAAF's contribution to Operation Okra, and carried out their first strikes against IS targets on the night of 8 October 2014. The Super Hornets were replaced by RAAF Classic Hornets in March 2015 but returned for a further six-month tour of duty in May 2017.

## The future

The RAAF's concept is to keep the Super Hornet in the same configuration as US Navy aircraft, and they therefore receive hardware and software upgrades at regular intervals as the USN rolls them out to its fleet.

In the future, along with the USN, consideration is being given to further upgrading

the jets to Block III configuration, sometimes referred to as Advanced Super Hornet, with conformal fuel tanks (CFTs), new and larger cockpit displays and improved GE F414 engines.

An Australian government decision on whether to replace the Super Hornets with a further tranche of 28 F-35As is expected in the years to come, but the Rhino is expected to remain in front-line service at least until its current planned withdrawal date (PWD) in 2030.

"The Super Hornet isn't going anywhere soon and, with our current landscape of transition from the Classic Hornet into the F-35A, the intention is to help us bridge that gap and maintain capability," explained Wg Cdr Ric Peapell, 1 Squadron CO.

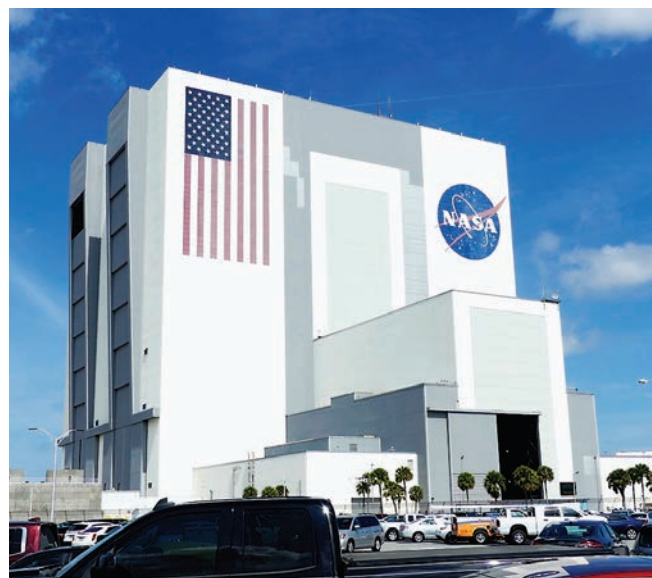
He added that six aircraft had recently returned from the US, where they had participated in the USAF's premier air combat exercise, Red Flag. "We were pretty much used in every role the Super Hornet is capable of. The jet is truly multi-role and it does it all extremely well," he said.

Not bad for an aircraft initially purchased as a bridging capability and expected to remain in service for only a decade or so.



# In the spirit of *Discovery*

Bernice Hintz report and photographs



Above: The shuttle construction building is TALL.  
Far left: A travelworn Atlantis, the last shuttle to fly, is on permanent display with (left) the runway marked where it came to a final stop.

On 3 August 1492 the *Santa Maria* was one of three ships Columbus used to sail to the Caribbean Islands (*Niña* and *Pinta* being the other two). The trip was expensive and risky. Why did he embark on such an adventure? Fame, fortune and to find a passage to Asia.

Asia had precious spices. Previously Asia had been accessed by land, but the route was becoming troublesome. So Christopher had a plan. He'd go west from Spain to find an alternative route by sea. He did find land on the other side of the pond (Atlantic Ocean), but it was the Caribbean Islands, not Asia as he thought. He shuttled across the Atlantic four times: 1492, 1493, 1498 and 1502.

On 21 May 1927 Charles Lindbergh took off to fly across the pond in the other direction. Why did he embark on this expensive dangerous endeavour? Fame, fortune and a challenge. The Orteig Prize of \$25,000 was offered for the first person or persons to fly from New York to Paris or vice versa.

On his return to the US, Lindbergh flew the *Spirit of St Louis* around the country. This brought the idea of aviation transport to front and centre of the minds of the US public. The idea of shuttling between New York and Europe in something other than a ship looked achievable. Pan American flew the world's first trans-Atlantic passenger service on 28 June 1939.

On the shores of the Atlantic Ocean, at a place between New York City and the Caribbean Islands, is Cape Canaveral in Florida. Here in a swamp, mainly inhabited by alligators, snakes and turtles, was where the US decided to launch the next generation of ships, starting with the first launch of a bumper rocket on 24 July 1950. The Apollo programme and then the Space Shuttles (Orbiters) were later launched from this site.

The Orbiter was capable of launching like a rocket, re-entering Earth's atmosphere like a capsule, and flying like a glider (sort of) for a runway landing. It could rendezvous and dock precisely, and serve as a platform for scientific research within a range of disciplines that included biotechnology and radar mapping. The shuttle also performed satellite launches and repairs, bestowing an almost perpetual youth upon the Hubble Space Telescope through repairs and refurbishments.

From 1981 to 2011 was flown a total of 135 missions, all launched from Kennedy Space Centre in Florida. During that time period the fleet logged 1322 days, 19hr 21min and 23sec of flight time. The longest orbital flight of the shuttle was STS-80 (*Columbia*) at 17 days 15hr, while the shortest flight was STS-51-L at 1min 13sec when space shuttle *Challenger* broke apart during launch.

The shuttles docked with Russian space station Mir nine times and visited the International Space Station 37 times. The highest altitude (apogee) achieved by the shuttle was 350 miles (560km) when servicing the Hubble Space Telescope. The programme flew a total of 355 people representing 16 countries. *Atlantis* STS-135 was the last shuttle to fly. It arrived back at Kennedy

Space Centre on 21 July 2011.

On 1 March 2020 I embarked on what I hope will be an annual shuttle from Auckland to the United States. The 31st Annual International Women in Aviation Conference at Orlando, Florida, was on 5–7 March.

As part of the conference I'd pre-booked a tour to the Kennedy Space Centre at Cape Canaveral. I wasn't prepared for either the size of the actual aircraft or the number of zeros in dollar terms these projects took to get off the ground.

I also didn't expect to see what I saw when I got off the bus at the centre—another Kiwi. The T-shirt with Mercer Airfield on the back was a dead giveaway. Dee Bond had also decided to tag the conference onto another trip she was doing to the States.



Do you think we could squeeze this into Mercer? Dee Bond thinks big.

We spent the day oohing and aahing at everything. We visited the shuttle landing runway—15,000ft (4572m) long, with a 1000ft (304.8m) overrun on each end. The width is about the length of a football field, 300ft (91.4m), with 50ft (15.2m) asphalt shoulders on each side.

Then we carried on to the Apollo building where the Apollo rocket replica (on its side) is displayed with all the associated parts. There is another building dedicated to the space shuttle programme with the actual *Atlantis* ship. We did the *Atlantis* simulator takeoff ride and Dee slid down the escape slide (I held the cameras).

The gold pass tour included a trip around to the main orbiter building hangar (very tall) and a look at the crawler unit used to take the rockets to their launching pad. Since NASA no longer uses the launch pads for Orbiter launches, other privately owned companies are using the Cape Canaveral facilities—SpaceX (backed by Tesla CEO Elon Musk), Blue Origin (backed by Amazon CEO Jeff Bezos), Virgin Galactic (backed by entrepreneur Richard Branson) and Boeing. We could see these in the distance.

The tour guide was also very proud of their bald eagle nest which had chicks in it. Like everything else on site, the nest was oversize. I wholeheartedly recommend making the effort to go to the Kennedy Space Centre—it is literally out of this world.

There were so many events on at the conference I was torn between the various tours (Embraer facility, Disney business behind the magic) and attending the conference

seminars. On the second day I opted for a tour of the Embry-Riddle Aeronautical University. We visited their Daytona (yes where the racetrack is) campus. Embry-Riddle Aeronautical University (ERAU) is a private university with its main campuses in Daytona Beach, Florida, and Prescott, Arizona. It is the largest accredited university system specialising in aviation and aerospace.

## Private university

It was hard to get my head around the fact that this was a private university, not a government run facility. Take Canterbury University and make it all aviation-based courses and you might start to get a handle on it. With 185 acres (0.75km<sup>2</sup>), this university's eastern campus serves about 5700 undergraduates and 600 graduate students from over 100 countries.

The tour started with lunch. The speaker at lunch was an Australian by the name of Tracy Lamb who is studying for a PhD at Embry-Riddle. From her bio on LinkedIn "... Celebrating 23 years of experience in commercial aviation, with 7000 flight hours; 7 years as an international airline pilot (Boeing 737, Virgin Australia); senior flight instructor, commercial charter pilot, including business jets (Cessna Citations) around the Australian outback, New Zealand, and Asia Pacific Regions, including the remote islands of Papua New Guinea, Honiara and Nauru."

After all that she branched off into flight safety for remotely piloted aircraft systems (RPAS). As you can imagine, the talk was absolutely spellbinding. How she had fitted all that into one lifetime (she looks like she is only halfway through) was just jaw-dropping. I liked her idea of looking for your spark and the advice she gave the younger women in the audience:

"If it wasn't for Women in Aviation and the mentors I met through that programme ... perhaps I would not have had the strength to get through some of those challenges," she said. "Your friendships and your mentors are really important. Build those networks up now."

Then there was the tour of the facility with programmes in aeronautics, air traffic management, applied meteorology, and aerospace studies. In July 2014, the university also became the nation's first FAA-approved training provider for student airline certification.

There was a lot to see in three hours. We got to tour the pilot side as well as the engineering departments.



Embry-Riddle flight line plus Daytona.

On the pilot side, with nearly 400 training flights departing and arriving every day, the ERAU ramp is one of the busiest places on the airport, and all that activity is monitored by full-time flight supervisors who observe activities from the university's flight supervisor tower. To save time, a dedicated golf cart picks up and drops off students and instructors as they come and go from their flight activities.

The university has a fleet of 62 Cessna Skyhawks and 10 Diamond DA42-Vis, and I also saw a couple of 152s. They exchange their aircraft every seven years. The flight operations centre, control tower, air traffic control (simulated) and meteorology section were as real as any commercial business. The Embry-Riddle control tower works in conjunction with the real tower controller at Daytona International airport.

Then there was engineering. Embry-Riddle teaches both aeronautical and mechanical engineering fields. We were shown a racing car project the students were working on, basically an oversized go-kart. The Embry-Riddle team is gearing up for the Formula SAE competition in May at the Michigan International Speedway against 120 teams from around the world. About 40 Embry-Riddle students, including undergraduate and graduate students, are building an open-wheel style high-performance vehicle in nine months, including designing, constructing, testing and even racing the car competitively.

The car I saw was the next generation. Each year the students improve on the last. The engine they were using was from a CBR 600 motorbike (I used to own one). I could have stayed there all day asking questions, but we had to get back to the bus. It reminded me a bit of the Evolocity electric vehicle race New Zealand schools have, just on a bigger scale.

## Breaking barriers

The conference serves several functions. First and foremost among its members, as their logo says: Connect, Engage and Inspire. The inspiring comes from the seminars, the keynote speakers and meeting amazing women who have broken barriers, both physical and mental.

The connecting comes from the casual conversations. You never know who you are talking to and where that conversation may lead. The engaging is up to the individual. Coming from New Zealand, I act a little like Crocodile Dundee saying hello to everybody. I figure nobody knows me so what's to lose?

Connecting is also set up in another way. Airlines, aviation colleges and the military use the conference as a recruiting tool. So if you're in the market for a career in aviation, this is one of the places to be seen and heard. At the time of the conference one airline had put a hold on recruitment, sadly, and I suspect the others will follow soon after.

The exhibition hall, as well as having recruiting stalls, also sells WAI merchandise, books, headsets, GPSs, aircraft bling (jewellery) and memberships to other aviation





Finally joined the Ninety-Nines: Existing 99 Dee Bond pins the badge on the newest member.

related organisations. I have long talked about joining the Ninety-Nines group but have never put my money where my mouth is. This year I joined.

To give you an idea of the calibre of some of the speakers, this year they had Barbara Barrett, secretary of the USAF; Joan Robinson-Berry, vice president and chief engineer from Boeing Global Services; Stephanie Chung, Jetsuite president; Maj Gen Jeannie Leavitt, commander of USAF Recruiting Service; Amber Smith, combat helicopter pilot; Patty Wagstaff, US aerobatic pilot; and Eileen Collins, NASA astronaut.

Those were the keynote speakers, but each seminar had its own heroines. I attended *Dream take flight: Why you should build an airplane* with Lisa Turner (bought the book). Lisa talked about building and flying her Pulsar and the why.

Straight after that was Becky Lutte: *We can do it! Increasing the number of women in aviation and identifying the greatest gender gaps*. Becky sent out a survey to the WAI community and presented us with some interesting data from that survey. It was like she was reading my mind. The talk reaffirmed what I already suspected about attracting and retaining females in the aviation industry.

There was an interesting twist at the end of this talk when a young woman in the audience stood up and suggested she had no problems with the males in her workplace and maybe it was a self-induced problem. Becky put it very diplomatically when she said that was great that she was working in a comfortable environment, but it wasn't what her research bore out for a large number of females in the industry. While Becky didn't have any solutions, she said you can't fix a problem if you can't identify the problem.

Education seminars covered topics as



Eileen Collins, astronaut.

varied as career, flying, history, innovation, maintenance, military and personal development. The biggest problem was choosing which ones to attend.

WAI administers a large pool of scholarships. They cover everything from flying to engineering to management to writing to assistance in attending the conference itself. A lot of the scholarship sponsors are big companies such as Boeing, Pratt & Whitney, UPS and Alaskan Airlines.

The military and Boeing have a huge presence at the conference and it's like a conference within a conference for them. The Kiwis and Aussies numbered four out of 4500. That's like 0.08 percent. The Kiwis were two out of 4500, or 0.04 percent. Even though I was without a cellphone, some of our movements were fairly predictable. Tam (my Australian friend from last year's conference) found me at the Girls in Aviation day and I found Dee again at the 99s stand.

The Girls in Aviation day is where girls of 8 to 17 are invited to the conference for a day. This year around 250 attended. Firstly they listened to a panel of aviation women talking about their various careers. Then they were let loose on hands-on activity stations. These stations include things like robotics, 3D printing, flying simulators, designing airports, navigation exercises, making bracelets and lip gloss.

#### Practical chemistry

I volunteered to help and got stationed at the lip gloss stand, which was very popular. The exercise was designed to introduce girls to chemistry, which to be fair some did ask about. Mostly they were keen on the chocolate flavoured base. They got to take away a small pottle of lip gloss in the colour of their choice with an Embry-Riddle label on it. Clever marketing.



Girls in Aviation day: Introduction to simulators.

After a couple of hours in the activity hall they were given lunch and a talk from Patty Wagstaff, US aerobatic pilot. The women chosen to talk to the girls were very personable, honest and engaging. What great role models.

I wanted a photo with Patty myself but there was a long line of young girls eager to see her so I left them to it and went back to the exhibition hall to buy some jewellery I'd been eyeing up for a couple of days.

The finale is always the celebration dinner. This year the guest speaker was Eileen Collins. She gave a funny and enlightening talk on 10 things you didn't know about the space shuttle, interlaced with stories about her time in space—an absolutely fascinating view of the world from someone who has seen it from a completely different angle. A true explorer who I would hold in the same light as Christopher Columbus and Charles Lindbergh.

The WAI conference at Orlando:

- The total attendance of nearly 4500 included 142 international representatives from 31 countries including Nigeria, Canada, Ghana, Australia, Iceland, and others (New Zealand).

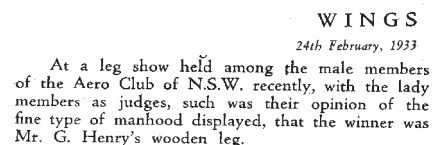
- The attendees were 70 percent women and 30 percent men.

- The exhibit hall hosted 180 separate companies and organisations, representing all aspects of the aviation community, including drones.

- 151 scholarships were distributed to WAI members at every stage of life for academic use, lifestyle enhancement and flight training, including type ratings. A total \$831,365 in scholarships was awarded, which put the total scholarships awarded since 1995 to more than \$US13m (\$21.8m).

The 32nd Annual International Women in Aviation Conference will be held 11–13 March 2021, at the Reno-Sparks Convention Center in Reno, Nevada. For more information visit [www.wai.org](http://www.wai.org).

Tam and I are already making plans to shuttle over to Reno for 2021. I believe like the shuttle trips these *Enterprises* give me a chance to see the world from a different perspective, *Discover* new things and *Challenge* myself to keep moving forward and upward. I *Endeavour* to meet as many new people as possible. Like *Columbus* crossing the Atlantic, I always come back with new ideas and trinkets (usually silver).



Possibility for future NZAWA rally.

## Not observing local rules



by Peter Owens

Mike Borthwick: Australian competitor's activities "ramped up" in lockdown.

The New Zealand government has invoked present legislation and is filling in the gaps with regulations to ensure that only essential businesses can operate during the coronavirus infection lockdown.

However, there are concerns in some sections of the local economy related to aviation that an Australian aerial survey company, Nearmap, is disregarding the laws forbidding the operation of non-essential businesses. Under the government's ruling, aerial survey is not regarded as an essential industry.

Nearmap's high-resolution images are used by urban planners, architects, engineers, builders and others to inspect sites remotely, but they often also happen to be nice to look at.

Nearmap has been engaged in aerial mapping work for a number of years in this

country, conducting aerial surveys for both statutory bodies and commercial clients.

Mike Borthwick, Landpro executive director, says that while his company aircraft are grounded during the lockdown, the Australian company is operating as normal. Mr Borth-

wick says Nearmap has recently been observed aerial surveying in Central Otago, the Waikato and the Bay of Plenty. Using flight tracking, anybody can observe Nearmap aircraft traced to have been in Nelson, Wanaka and Dunedin in March and in Whangarei, Tauranga and Wellington from 3–5 April.

Nearmap's website says it captures high resolution aerial imagery across New Zealand multiple times per year. The company heavily promotes its services on its website, stating that "new aerial images are processed and streamed to the cloud within days. Get instant access to all current imagery and historical aerials, accurately georeferenced to show you truth over time."

It claims Nearmap captures "high definition aerial photos under the best possible conditions" so that people can understand the critical details of their project.

Mr Borthwick is less than enthusiastic about Nearmap and its services. He says the company has been appearing to take advantage of the national lockdown of non-essential industry since the first day of the lockdown.

The aircraft had been operating in New Zealand since December "very sporadically", but their activity ramped up in the first 10 days of lockdown, he says.

"It's just disappointing that a number of New Zealand companies are sitting here really struggling financially, and now we've got a company coming here from Australia doing what appears to be taking advantage of the situation."

The New Zealand police are looking into the matter, and a spokesperson says it regards very seriously any flouting of the lockdown. The action has been described as the aviation equivalent of underarm bowling.

Mr Borthwick says Landpro is a multi-disciplinary consultancy offering a wide range of planning, surveying and engineering services throughout the country. The company was formed in 2007 to meet the needs of rural, commercial, industrial and individual clients.

He says the company's team is made up of surveyors, planners, engineers, hydrologists and land management experts who bring together a broad range of specialist skills and experience in all fields of surveying and resource management planning. The company's offices are located in Cromwell, Gore, New Plymouth and Timaru, but it operates throughout New Zealand.

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# An invasion of Tigers



Report and photographs by Cathleen Heslan

The middle of March was the end of a two-week jaunt around New Zealand for a band of Tiger Moths. The Tiger Moth Club celebrated its 50th anniversary by flying all the way from Cape (Reinga) to Bluff, starting on 29 February.

Organised by Amanda Rutland with help from Keith Skilling, it was a marathon event—but what an amazing way to see the country! Making it down to Bluff on 10 March, they finished off with a day at Ashburton for competitions, AGM and the annual dinner and trophy night.

The weather at Ashburton on Friday when they were expected to arrive was cold with low cloud that eventually cleared away. Down south this formed fog which kept them from getting through Lindis Pass from Wanaka until the afternoon. Lunch enroute at Rangitata Island was rather late.

It was a great de Havilland line-up with eight Tiger Moths, a Gipsy Moth, a Thruxton Jackaroo, three Chipmunks and a Beaver. *Tiger Lily*, the local Tiger Moth from Rangitata Island, flew in for the day, as did one of the Chipmunks.

Only three of the Tiger Moths flew the entire journey—ZK-AON flown by Amanda Rutland, ZK-BAH flown by John Baynes and ZK-BER flown by Graham Halley and

Wayne Tantrum. The Beaver and Jackaroo also made the entire journey.

The Beaver, flown by Ace Edwards and sometimes by Graham Halley, was an essential part of the party carrying passengers, luggage, tools and oil. This distinctive aeroplane, owned by a group which is part of Warbirds at Ardmore, is painted in the scheme of the Beaver that went to Antarctica in 1956 on the Commonwealth Trans-Antarctic Expedition with Sir Edmund Hillary. Some Tigers did only the North Island or the South Island legs, with others coming along for only a day or two.

The route started at Kerikeri and went to Cape Reinga and back, then to overnight stops at Whitianga, Opotiki, Gisborne, Dannevirke, Blenheim and Hanmer. The next day was meant to travel down the West Coast to Haast, but due to bad weather the flight was diverted to Ashburton for that night.

After that they continued to Manapouri but the following day's trip to Invercargill was also postponed due to weather. They flew down to and around Bluff, ending up at Taieri the following day, then on to Cromwell and Ashburton.

On 3 March they spent the day at Ruatoria as part of the 60th anniversary of the



Above: Tiger tails of great derring-do. Right: Chief organiser Amanda Rutland.

airfield and local aero club. Fifteen aircraft flew in, and good weather meant it was a great family day out.

Saturday morning in Ashburton was also cloudy but cleared to a warm summer's day. Open cockpit pilots didn't mind this kind of weather and there were plenty of spectators out to watch. The Tiger Moth Club's annual competitions included spot landing, bombing, aerobatics and a time trial, starting on the line and flying around Lake Hood and then back over the aerodrome. Jerry Chisum, the winner, said the secret was to go high in a tailwind and low in a headwind.

Jan Chisum was in her unmistakable red Gipsy Moth, a piece of history that her father flew out from England in 1934. From Dunedin she had as passenger a Swiss hitchhiker who was over the moon about his ride to Ashburton. Jan took the Non-Instrument Trophy and Best Vintage Aircraft.

Ryan Southam and Tracy Dixon flew down from Blenheim in a Harman Rocket just to take part in the competitions. It was well worth the trip as they took three trophies between them—Best Novice to Tracy while Ryan won the Aerobatics and the Perfect Loop.

John Pheasant was flying his Thruxton Jackaroo, unique in this country (see page 16 this issue). The Jackaroo was produced in the UK as a low-cost four-seater with only 19 built, and John's example had only just had its first test flight on 21 January. It was



an amazing trip for such a newly restored aeroplane, and John received the Scott Greave Memorial Trophy for a wonderful restoration.

A great dinner was put on by the Ashburton Aviation Museum in one of its hangars for the trophy night. The atmosphere was completed by being surrounded by aircraft, the most prominent of them the beautiful Spartan.

Amanda Rutland received accolades for the work she had put into organising the safari as well as taking the John Crosbie (most interesting flight), E.F. Harvie Memorial (most helpful member) and original 1990 rally trophies. Simon Spencer-Bower won the Spot Landing and Russell Brodie, owner of *Tiger Lily* ("she lives with us"), won the Most Original Tiger Moth while his son Ross was the Youngest Competitor.

The club's AGM was held first thing Sunday morning so members could start heading back home in good time—quite a feat as those who did the whole trip actually covered the country twice, first getting up to Cape Reinga, going all the way to Bluff and then flying back home.



Dashing across the finish line in the time trial to find the Fastest Tiger.



Tiger Moths not being noted for their luggage room, the Warbirds Beaver is usually roped in to carry excess baggage, oil, tools, spare magnetos and other things needed for open-cockpit life support.

# Warbirds on Parade



Report: Kathy Bland

Photographs: Kathy Bland and Nicholas McIndoe

Nicholas McIndoe

Charles Davis' BAC 167 Strikemaster Mk 88 (left) and Doug Brooker's T9 Spitfire show advances in British aviation technology—the Strikemaster jet flew only 31 years after the prototype Spitfire. Britain's first jet fighter, the Gloster Meteor, first flew a mere seven years after the Spitfire.

NZ Warbirds at Ardmore held its autumn open day on Sunday 15 March, a beautiful clear sunny day.

The flying display was opened by the Grumman Avenger flanked by RNZAF Beechcraft Texans. Unfortunately the Avenger had engine problems and so was unable to fly again.

They were followed by a display of WWI

aircraft. The three flying slots had a great variation of aircraft, including the police and Westpac rescue helicopters. Several Mustang cars led by a motorcycle raced up and down the tarmac at lunchtime for a short while.

The day ended with pyrotechnics and a flypast by the Yak-3, the Spitfire and the Mustang (the P-51D flying example), followed by Harvards.



Kathy Bland

Quiet and unassuming, the DHC-1 Chipmunk is an often overlooked warbird—but it boasts handling qualities well ahead of almost every other training light aeroplane.



Kathy Bland

RNZAF support in the form of Texan IIIs is appreciated.





Photographs: Peter Clark

Above: Navigator Clark on the ground at Gisborne, having arrived by Westland Sea King. Right: Hawker Sea Harriers land on board HMS Invincible.

After the 1982 Falklands War in the South Atlantic, New Zealand was on the itinerary for the jump jet aircraft carrier, HMS *Invincible*, and a fleet of five Royal Navy ships. The visit was part of a thank-you to many countries on a tour called Orient Express, a Far East group deployment of the Royal Navy.

The fleet arrived in Wellington on 25 November 1983 and then sailed for Auckland on 28 November. Along the way it completed joint military exercises with New Zealand's air force and navy.

During the days before heading for Auckland the jump jets and several helicopters were seen flying around Wellington, and a flight was taken up north to Ohakea with three Sea Harriers and two Sea King helicopters.

HMS *Invincible*, the seventh ship to carry the name, was launched by the Queen in May 1977 and was the largest RN ship since the 1950s. Commissioned into service in July 1980 alongside sister ships HMS *Ark Royal* and *Illustrious*, *Invincible* was 206.3m long with a waterline beam of 27.4m and displaced 16,000t, fully loaded close to 20,000t. The light aircraft carrier was powered by four Rolls-Royce Olympus TM3B marine gas turbines, from the same family of gas turbines fitted to the Vulcan bomber and the Concorde but developing 70,000kW maximum total continuous.

Unlike conventional modern aircraft carriers, *Invincible* had no angled deck. Instead, her unique feature was the revolutionary ski-jump of 7deg (later increased to 12deg) at the forward end of the single 168m flight deck.

This British invention enhanced the performance of the Sea Harrier, which needed neither the catapults nor the arresting gear of a conventional aircraft-carrier. It enhanced the Sea Harrier's vertical takeoff and load-carrying capabilities by giving some forward speed.

On board *Invincible* was a fleet of five Sea Harriers and nine Westland Sea Kings



HMS *Invincible* steams towards Auckland.

(as flown by Prince Andrew during the Falklands conflict). The helicopters were from 820 Naval Air Squadron and were used in antisubmarine warfare operations. They were equipped with sonar, sonar buoy dispensing equipment and radar.

They were also useful for the delivery of troops with their ability to undertake winch operations and carry underslung loads, as well as surface SAR operations. The Sea Kings were powered by two Rolls-Royce Gnome turboshaft engines.

The British Aerospace Sea Harrier vertical/short takeoff and landing (VSTOL) aircraft were from 801 Naval Air Squadron. The Sea Harrier FRS 1 was a derivative of the Harrier GR Mk III then in RAF service. Operated in an air-to-air role, the Sea Harrier carried Sidewinder missiles and the Aden 30mm cannon, and in an air-to-ground role it carried bombs, rockets or cannon.

During *Invincible*'s visit to New Zealand the RN was able to exercise with the RN-ZAF's P-3 Orions, A-4 Skyhawks and BAC 167 Strikemasters.

I was a field sound recordist working for



Sea Kings and Sea Harriers in the hangar below the flight deck.

TVNZ at the time and, along with cameraman Max Pudney, had the chance to sail with *Invincible* for three days from Wellington to Auckland, a little seasick along the way, but to have this great opportunity to be on board, nothing was going to stop me enjoying my work.

During the second day we got great footage of some of the operations and I suggested over dinner that we might get the footage off the carrier for the following night's news bulletin.

Getting the film to Wellington took some planning. Up early, filming the final footage as a Westland Sea King HC4 was made ready for a flight to Gisborne. Once ready, we boarded to be flown to Gisborne with me on board, dressed in full immersion suit and safety gear for the 100km trip.

The crew had no charts for Gisborne, so I sat at the cargo door in a safety harness with my feet hanging out and guided the pilot as we approached the airport from out at sea. We entered from the harbour and up the river to approach from the city. We held short behind the tower and were given a green light to proceed to land on the apron.

We had come in low to the terminal area, making a lot of noise in what could have been taken for a hostile attack on the town, although many locals were delighted to see such a large helicopter overhead.

Once on the ground, I went to the local

aero club and organised a charter aircraft to have the videotapes flown to Wellington for that night's evening news. In those days there was limited technology to get the pictures back from that far out at sea, so the editor was happy to get such an up-to-date report.

With the material delivered we headed back to the fleet, and I jumped at the offer to fly the Sea King from the copilot's seat. It was a real treat to have such a hands-on role and gave me the chance to see many aspects of the controls. It was also abundantly clear how difficult the Sea King was to fly!

On my return we continued our filming work and transferred to several of the other ships of the fleet in a Westland Wessex HU.5 helicopter.

During the final morning on board ship, we sailed into Auckland on 30 November to see the ceremony of the crew with an arrival in port. It was a great trip that I still remember clearly from all those years ago.

*Invincible* was decommissioned on 3 August 2005 and remained inactive until 2010 but available for reactivation at 18 months' notice. In February 2011 the BBC news reported that the Ministry of Defence had announced the sale of *Invincible* to Leyal Ship Recycling in Turkey. She was towed out of Portsmouth on 24 March 2011, arrived in Turkey for scrapping on 12 April and by June work was underway to break up the ship.



Kathy Bland

Yakovlev Yak-3 (left), Supermarine Spitfire and North American P-51D Mustang, three of the most important Allied fighters of WWII, close the show.



Nicholas McIndoe

Not quite ready to fly, the replica Siemens-Schuckert D.IV leads New Zealand Warbirds at Ardmore's impressive and growing collection of WWI types: Bristol Fighter, Bristol Scout and Fokker Dr.1 Triplane. After its morning display, the B.E.2f was already in the hangar as an afternoon northerly breeze appeared.

May 2020

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# The best of British: Independent aviation museums



Grant Newman report and photographs

The Yorkshire Air Museum's evocative centre comprises the former RAF Elvington bomber base's watch tower and Nissen huts as display spaces, education centre, cafeteria and gift shop.

The history of the British aviation preservation movement has seen numerous noteworthy aircraft collections that have fallen by the wayside: museums started by well-meaning people with considerable resources to begin collecting old aeroplanes and artefacts.

Some of the most memorable include the Historic Aircraft Museum at Southend, Skyfame Aircraft Museum at Staverton and the Strathallan Collection at Auchterarder. Their remnants can be found scattered in museums around the UK and about which entire books could be written on the adventurous tales of their creation and demise. All of these began life owing to the whims of financially well-endowed individuals with a passion for historic aircraft.

For a time in the 1970s and 1980s it seemed that independent aviation collections—museums not government-owned or -funded like the FAA Museum, the Imperial War Museum and the RAF Museum—couldn't survive, owing to a shifting financial climate. Thankfully, however, the British aviation preservation movement is looking healthier than ever due to the rise of some important gatherings of airframes in some unlikely places round the country—and with some help from lottery grants.

These are brief reviews of the Midland, Newark and Yorkshire Air Museums, three of the largest and most significant privately-owned aircraft collections in the UK.

Before we examine them, mention must be made of the arrival in the UK of a small force of combat aircraft from the Eurocontinent, from 1975 through to 1978. On 24 November 1975 a squadron of Armée de L'Air North American F-100 Super Sabres touched down at RAF Sculthorpe, Norfolk. The weathered and dishevelled fighters decked with the French Tricolore were soon followed by a similar number of Dassault Mystère IVAs and later Lockheed T-33 T-Birds.

The careers of most of them ended at Sculthorpe, unceremoniously dismantled and disposed of in scrapyards. For some, however, new life as museum exhibits awaited them.

These aircraft were paid for by the United States government under the Mutual Defence Aid Program (MDAP), which meant that following their career's end with the French Air Force they were to be dismantled by the USAF at Sculthorpe. On hearing of these unwanted airframes' disposal,

aircraft collectors around the country were champing at the bit to get hold of examples to create their own aviation museums, to the extent that a fair few now grace permanent collections, including two of the museums mentioned in this article.

Today there are nine Mystères, nine F-100s and eight T-33s formerly of the MDAP in British museums. Those aircraft are property of the USAF Museum to this day, and their intended disposal by their incumbent carers must be reported to that body beforehand.

Their impact on the museum scene cannot be overstated; they have added well-needed variety to British collections, as while examples can be seen at even some of the big nationals such as Duxford, they have also brought life to private collections round the country.

## First of the rest: Newark Air Museum

One of the longest-surviving independently owned aviation collections in the UK, the Newark Air Museum (NAM) first opened its doors to the public on 14 April 1973. Its roots, however, date back to 1965 and the salvage of the remains of a Westland Wallace biplane by Neville Franklin and Charles Waterfall in April 1963 from a scrapyard in Twyford, Berkshire.

Moving the derelict airframe to a shed on the property of the Newark and Nottinghamshire Agricultural Society at what was the former RAF base at Winthorpe, Nottinghamshire, the intent of the individuals involved was to create an aviation collection on site from artefacts that had been gathered privately.

These included the rather remarkable surviving General Aircraft Monospar VH-UTH, which had been in the UK since a six-week epic flight from Australia in 1961. After languishing unflown for a period, it was delivered to Winthorpe to become one of the first airframes in the embryonic NAM, formed in 1968. Owing to the task of restoring the Wallace being a resource too great for the people involved, that was sold to the RAF Museum for the sum of £5000 in 1987 and is no longer at Winthorpe.

Boasting some 78 airframes of largely postwar vintage, NAM is regarded as the largest private aviation museum in the UK, although the Yorkshire Air Museum also stakes its claim to this title. On arrival at NAM, the visitor is greeted by the impressive sight of an Avro Vulcan bomber. B.2 XM594



One of only four complete surviving Hastings transports, Newark Air Museum's is regularly opened for public inspection. The fish markings on the nose indicate patrols it flew during the "Cod Wars", a series of clashes between fishing boats and patrol vessels of the UK and Iceland in the 1960s and '70s over territorial waters.

was one of the aircraft used in training for Operation Black Buck, the long-range air raids against Argentine positions during the 1982 Falklands War, although it remained behind, not being one of the five sent to Ascension Island.

Purchased in the summer of 1982 by the museum's primary benefactor, Stuart Stephenson, the Vulcan is open to the public during the museum's regular opening hours. Visitors can also explore the interiors of a Handley Page Hastings and Avro Shackleton.

After immersion in the darkness of the Vulcan's cramped multi-level interior, visitors wander along a row of fascinating airframes, varying from a Socata Rallye to a Fairey Gannet, via British jets such as multiple examples of Gloster Meteors and English Electric Canberras and Lightnings. Two unusual shapes in the line-up are a Mikoyan Gurevich MiG-23 and a MiG-27.

NAM has two hangars full to the brim with aircraft, engines and other sundry artefacts. Within the first can be found the Monospar undergoing a gradual restoration, as well as some of the less weather-resistant aircraft such as an Avro Anson.

Shoehorned inside the second hangar can be found Canberra B.2 (Mod) WV787, sporting a gloss black all-over colour scheme and an unusually pointed proboscis from its days as a radar test bed for the Blackburn Buccaneer's Ferranti Blue Parrot radar. Retired in 1983 from the Aircraft and Armament Experimental Establishment (A&AEE) at Boscombe Down, it was threatened with destruction in the form of battle damage repair training.

A campaign launched by the editors of popular aviation magazine *Flypast* to save it saw NAM's patrons place the winning bid for its purchase in 1985. The building housing it was secured with a grant from the Heritage Lottery Fund and was opened to the public in 2005.

NAM is known for an annual event in the airshow calendar known as Cockpit Fest, where owners bring along their aircraft nose sections to join Newark's own examples, of which there are a number. On the way toward the gift shop and exit can be seen the fuselage of a sizeable aircraft, the largest surviving component of the Avro Ashton jet airliner derived from the ill-fated Tudor people carrier.

## Jet heritage on display: Midland Air Museum

Frank Whittle hailed from Coventry, so it's

only natural that Coventry Airport should host an aviation heritage site honouring his ample contribution to aeronautics. Located on the edge of the former RAF Baginton, the Midland Air Museum first opened its doors on 2 April 1978 but, like Newark, its story begins somewhat earlier.

In 1967 the Midland Aviation Preservation Society began collecting ephemera and, being devoid of a permanent home, raised funds at airshows and local fetes, leading to the purchase of a disused corner of Coventry Airport.

Changing its name to the Midland Air Museum (MAM) in 1977, on its public opening a year later it had five airframes and assorted engines and parts which had been in store at seven different locations. From this humble beginning, MAM has become a sizeable museum with a room dedicated to Coventry's most famous aviation personality, with an early Whittle gas turbine and a scale model of the first British jet, the Gloster E.28/39.

As with Newark, the acquisition of a Vulcan in 1983 was a big drawcard for the fledgling organisation. Vulcan B.2 XL360 carries on a long tradition of RAF bombers carrying the name of the cities sponsoring them, as the aircraft was bought for the museum by locals generously chipping in.

In August 1984, during a ceremony in front of the Vulcan the city's mayor unveiled the newly named *City of Coventry*. This gave the burgeoning business an enormous boost in publicity and sense of belonging in the community, and it wasn't long before interest in the goings-on on the site built up.

Inevitably more aircraft arrived, one of the most significant being Armstrong Whitworth Argosy G-APRL in 1987 in recognition of the type being built at Baginton. To honour the local heritage are displays focusing on Armstrong Whitworth on the second floor of the main building. These include models and such components as segments of the firm's best-known type, the Whitley bomber.

Another local but lesser-known aircraft manufacturer commemorated at MAM is the automotive firm of Humber with a full-scale reproduction of one of its products. Although headquartered in Coventry, Humber's aviation branch was at Brooklands in Surrey and in 1908 it began building single-seat monoplanes resembling Louis Blériot's XI on which he crossed the English Channel in 1909. These Humber Monoplanes were powered by three-cylinder engines of similar size, weight and power output to the Anzani engine of Blériot's mount.

Following examination of the varied displays inside the rather cramped main building, which includes the intriguing all-composite CMC Leopard four-seat business jet, visitors progress outside into a courtyard full of aircraft of differing types, many of which can be seen at other museums around the UK.

As a point of difference, however, Midland boasts an eclectic mix of postwar jets including a Lockheed F-104 Starfighter, McDonnell Douglas F-101 Voodoo and a PZL TS-11 Iskra two-seat trainer.

Of interest is a Mil Mi-24, the fearsome Hind Soviet helicopter-gunship in a civilian paint scheme. This aircraft was subject to modifications made by BAE Systems to offer upgrades to operators of the type to prolong their service life.

Two more intriguing rotorcraft occupy a WWII vintage Robin hangar at the far end



Fairey's Ultra-Light helicopter was an attempt at an affordable ship-based general-purpose aircraft, powered by jet efflux via the rotor blade tips, but did not go into production. This example, the sixth prototype, is on show at the Midland Aviation Museum. Right: G-APJJ during shipboard trials.



John Morton collection



of the site. These are a German Flettner Fl 282 Kolibri, currently undergoing long term restoration, and a Fairey Ultra-light ship-based helicopter.

**The full effect: Yorkshire Air Museum**

Of these great aircraft collections, the Yorkshire Air Museum and Allied Air Forces Memorial (YAM) at Elvington, a mile southeast of the city of York, is unique in offering an immersive experience. The site is certainly atmospheric, being located within historic airfield buildings, including the watch office and original Nissen huts and like the other two, it invokes historic goings-on in the local area but with rather more panache.

Sponsored by representatives of the British, French and other Allied armed forces within NATO, the Allied Air Forces Memorial has made YAM an annual pilgrimage for service personnel and the site is littered with memorials to military units of different armed forces.

Boasting one of the longest runways in the country and much surviving WWII era infrastructure, Elvington is an appropriate setting for a homage to life on a RAF Bomber Command air station. The focus of this aspect of the site is a genuine wartime T2 hangar housing one of the most exacting full-scale reproduction museum aircraft, Handley Page Halifax B.III LV907 *Friday the 13th*.

To put it simply, *Friday the 13th* is the reason behind the foundation of YAM. It was down to Rachel Semlyen, who used to walk her dog amid the airfield ruins, Ian Robinson and a group of enthusiastic individuals who first proposed creating a reproduction Handley Page Halifax in 1983, since none had survived the scrap man postwar.

The project began with the discovery of a chicken coop on a farm on the Isle of Lewis, Scotland—the rear fuselage of Halifax Mk II HR792, which carried out an emergency landing in 1945. Airlifted by RAF Chinook to Stornoway, the Halifax coop made its long journey by sea and road to Yorkshire where it became the foundation of a project lasting until 1996 and the reproduction's roll out on, somewhat appropriately, Friday 13



Victor K.2 XL231 Lusty Lindy was one of 55 Squadron's tankers that went to war during the 1991 Gulf War. It is currently privately owned and stored at the Yorkshire Air Museum, where its engines are regularly fired up—and Elvington's long runway provides an opportunity for fast taxi runs.

September that year.

Constructed of remaining Halifax components, a reproduction structure and the centre section of a Hastings, *Friday the 13th* is a sight to behold and with an as complete as possible interior awaiting visitors who are prepared to pay the rather high fee for a personal tour inside, a stunning achievement.

Around this formidable task, YAM has grown into one of the best-known and best-presented aviation museum sites in Britain. With a distinctly Yorkshire bent to its holdings, including three Blackburn Buccaneers built at Brough, YAM's aircraft collection is the broadest of these three museums, with a considerable number of reconstructions of historic types filling gaps in the span of aviation in the region. From a George Cayley glider to a Hawker Hurricane and a Supermarine Spitfire, these replicas certainly add to the original airframes on site.

There are sections on most aspects of aviation at YAM, including the large part airships played during the early 20th century. In Yorkshire Armstrong Whitworth built airships at Selby, and nearby Howden was one of the biggest airship bases during and after the Great War, with Barnes Wallis' Airship Guarantee Company building its



Newark Air Museum's Monospar VH-UTH is the last survivor of this unique type following the tragic destruction of Piet van Asch's ST-25 Universal ZK-AFF in a hangar fire at Bridge Pa aerodrome in 1986. VH-UTH made a mammoth six-week trek from Australia to the UK, arriving in September 1961. It was one of the museum's first airframes.

R.100 passenger airship there.

Components and scale models tell the story of airship operations in Yorkshire, including the tragic demise of the Short Brothers' Cardington-built R.38 which suffered structural failure and crashed into the Humber Estuary on 21 August 1921.

The aforementioned Wallis, not a Yorkshireman, is celebrated with his own annex, comprising displays and mock-ups of his various projects. These include his airship designs, his geodetic structure used in Vickers bombers and, of course, his unique bombs—the Upkeep mine, 6-ton Tall Boy, of which there is a casing on display, and 10-ton Grand Slam.

Also commemorated is 609 West Riding Squadron, AuxAF, with a full-scale Spitfire Mk I reproduction and honour room which examines the unit's role during the war, with its most distinguished pilot, Sqn Ldr Roland Beamont highlighted with a fuselage panel from his personal Hawker Typhoon in a case.

As for aircraft, there is the usual selection of postwar British military hardware, which includes privately owned 1991 Gulf War veteran Handley Page Victor K.2 XL231 *Lusty Lindy*, which is kept in ground running condition by a group of volunteers, as a

point of interest. Uniquely, YAM also holds the only Dassault Mirage IV nuclear bomber on display outside France.

Adding to its substantial resume is the Air Gunner's Exhibition, charting the development of power-operated gun turrets in British aircraft, complete with examples.

**Must-see museums**

Any visit to the UK for aviation enthusiasts will naturally take in the RAF Museum at Hendon, a Tube ride from the centre of London, and IWM Duxford, at which the famous Flying Legends Airshow is held each year (with the—cough—exception of this year), but these three museums are definitely worth the excursion off the beaten path.

With inordinately cluttered buildings, an over-appreciation for interpretation and many of the same aircraft types in their inventory, these are run by dedicated individuals and a largely volunteer workforce but take their place alongside more established collections with ease because of their points of difference.

They illustrate what a penchant for aircraft wrecks and relics, a whole heap of money, enthusiasm and elbow grease, as well as an old airfield site, can result in.



Nowhere near an aerodrome is Adelaide's gem of an aviation museum.

Normally you would expect to find an aircraft museum at an airfield, but this is not the case at Adelaide, South Australia. In fact the museum is not the easiest to find, tucked away in a hangar next to a large railway complex at Port Adelaide, about a 30min drive from the Adelaide CBD.

But when you get there, suddenly you find yourself in a beautifully maintained and fascinating facility. The outside front of the hangar has a huge Vimy bomber painted on it, commemorating the centenary of the epic London to Australia flight by the Adelaide-born Smith brothers, Ross and Keith, in 1919. Their flight is suitably recognised in the museum in the form of models of the Vimy and various memorabilia.

For the aviation buff the South Australian Aviation Museum (SAAM) holds a treasure trove of restored aircraft, and some still undergoing restoration, all beautifully laid out to make for easy viewing by the visitor. The museum had humble beginnings back

in 1984, but now it is an absolute must for anyone with an aviation interest visiting South Australia.

What sets this museum apart from others is that all the aircraft on display have links to South Australia or links to the 150 volunteers who run the facility. The aircraft include a Sea Venom, a P-3 Orion, a Fokker Friendship, a Wessex HA 531B, an Anson, a Canberra B2, an F-111 and a Macchi.

A couple of special aircraft on display have interesting pasts. One of these is a former RAAF C-47 which was in service just in time to bring Australian POWs back from Singapore in 1945. This example, like many DC-3s of this era, became a VIP aircraft and among its VIP passengers were the Australian Prime Ministers of the time, Sir Robert Menzies and Ben Chifley, as well as Governor-General Sir William Slim. It crashed in 1986 but was restored by SAAM.

The Caribou brings back memories of the Vietnam war in particular as the aircraft transported troops into forward bases. The



Gary Hartas is restoring the rare Czech Aero 145.

Caribou came to the museum in pieces and has been beautifully restored.

Gary Hartas is one of the many volunteers who work on the site. He says they are split into groups such as restoration, library, cleaning and display.

"You might be in three or four different groups," Gary says. "I'm part of the Friday crew and we man the reception desk. I'm also a tour guide, a barman if we have a function and I also work in the shop."

One of his favourite aircraft, and certainly an unusual one, is an Aero 145 made in Czechoslovakia. The aircraft is a utility light twin with STOL capabilities. According to Gary it was originally used to take supplies out to islands where there were lighthouses in the 1950s and '60s.

"They also discovered that they could spot tuna with it from the air so they used it for that purpose and the multi-million dollar industry in the state was based on the fact that the plane could find the tuna. It was

ideally suited for this role because it could stay in the air for up to eight hours without having to refuel," Gary says.

"We got it in pieces and the guy that's doing it up is the son of the original owner. He's already done a lot of work on it, but it will be another six to seven months before it will be completed."

The Anson on display is in the final stages of restoration. According to Gary Hartas, a large number of these training aircraft were based in South Australia because it was deemed a safe place for such activity. Again, he says the aircraft was in a poor state when it arrived at SAAM, but with the last coats of paint going on its restoration is almost complete.

The museum is well worth visiting, especially with its special focus on South Australia. The museum is open seven days a week from 10.30am until 4.30pm and details are available on its website: [www.saam.org.au](http://www.saam.org.au)



# ZK-Register Update



**Dave Paull** presents a summary of New Zealand civil aircraft register movements during **March 2020**. Readers with photographs of new or newly acquired aircraft are invited to send these to him at [paulldj@xtra.co.nz](mailto:paulldj@xtra.co.nz)

## Initial registrations

Arriving at Rangiora just prior to the national shutdown was first of type Pipistrel Alpha Electro which became **ZK-EAL**<sub>1</sub> on 19 March. This model is based on the Alpha's pre-moulded composite construction of carbon fibre, Kevlar and fibreglass, side-by-side, high-wing and T-tail, and was designed for LSA flying schools as an entry-level circuit trainer. It has a more robust undercarriage without wheel spats and the shorter 63 x 71in fixed pitch propeller allows a shorter nose gear, giving improved ground visibility. The 34ft 6in wing is based on the Virus SW without airbrakes and re-designed flaperons with 25 degrees of flap travel. It also has a ballistic parachute recovery system.

But the most interesting thing about it is that it is powered by a fluid cooled, direct drive to propeller, Pipistrel modified Emrax 60+ kW three-phase electric motor which weighs in at 20kg. It is powered via an inverter from 21kWh, 400V Samsung lithium ion cell battery packs, each weighing 53kg, with one located forward of the firewall and the second behind the cockpit. These can be quickly exchanged with fully re-charged units or re-charged in situ, depending on the charger, in times varying between 45min and 6hr. Flight endurance at between 2100 and 2400 rpm is 1hr with 30min reserve. TBO for the electric motor is 2000hr with a total life of 6000hr.

The three earlier ZK- EALs were a New Zealand Aerospace Industries CT4A Airtrainer for the RAAF, a Cessna 207A Stationair 8 (ex ZK-FTL) and a Raytheon (Beech) 1900D for Eagle Airways.

We gain two Aerospatiale AS 332 L (long fuselage) Super Puma helicopters this month. Both went new to the Prime Minister's Office of Japan in executive configuration. The first arrived in March 1986 and briefly became JA9631 on its civil register prior to transfer to the Japanese Ground Defence Force that December as JG-003. At the end of its military career it was stored for a number of years and then reverted to its civilian JA9631 registration until sold to Oceania Aviation of Ardmore where it arrived in about April 2018.

This is a fully set up, float equipped executive helicopter with only 5400 airframe hours. It is now **ZK-HPX**<sub>4</sub>, marks previously worn on a Hughes 369D, a Bell JetRanger and a Robinson R22 Beta.



Noel Jones

*The pending ZK-HPX and ZK-HRP at Ardmore, 9 May 2018.*

The second machine followed the same career path except as JA9629 from June 1986, followed by JG-001 and then back to JA9629 and is now **ZK-HRP**<sub>3</sub>. The previous HRPs were a Bell JetRanger followed by a Hughes 369. One of the Pumas will remain in its executive status whilst the other has been converted to a heavy lift configuration. Heli Harvest operated the similar AS 332 L ZK-HHL<sub>4</sub> for two and a half years from March 2014.

Quin and Patricia Whiting-Okeefe of Port Charles on the Coromandel Peninsula have been operating Robinson R44 Raven II ZK-IWP since March 2019 and Raven 1 ZK-IAY<sub>2</sub> prior to that. They have now added new Raven I **ZK-IWO**.

Down at Mount Maunganui, Oceania Helicopters Tauranga has added another Squirrel to the BA model ZK-HLW<sub>2</sub> already on line. Eurocopter AS 350 BA **ZK-IZW** popped up initially as N350DB with David C Brown Farms of Fort Meyers, Florida, on 22 July 1993 with a move to Trevor Corporation of Libertyville, Illinois, from 2 June 2003 and then to the Purwin Company at Van Nuys, California, from 9 January 2004. Then followed a change of registration to N307SF from May 2004 and an ownership change to Helicopters Inc at Cohokia, Illinois, from 19 December 2007, on which date they re-registered it to N12FL. Its US certificate was cancelled on 18 March for it to become ZK-IZW on the 31st.



Noel Jones

*VH-MII at Ardmore 2 January 2005 before becoming ZK-MPE.*

Back on 16 November 1979 a Cessna R182 Skylane RG II was registered in Australia as VH-MII<sub>2</sub> and spent time with R.P. Wilson until going to the Royal Queensland Aero Club at Archerfield, Queensland, in about 1984. By 1990 it was with Riprose at Archerfield and then with C. Tanner at Mansfield, Queensland, in 1991. From 1 October 1992 Don Michelmores of Red Hills, Queensland, took it on until selling it to Grant Craigie of Greenlane, Auckland, from 2 May 2001. By May 2006 it was still with Grant but with a Kapiti Coast address, but was shown as being operated by Heather Craigie of Glenora, Queensland. It was in New Zealand on several occasions—being noted for sale at Ardmore in March 2008. It has now joined the NZ register as **ZK-MPE** with M&P 100 Enterprises of Auckland.

The Vickers Armstrong Castle Bromwich aircraft factory (CBAF) at Birmingham produced over half of the total number of Supermarine Spitfires built. Of this total, 1054 were Mk XVI's, very similar to the Mk IX but differing in being powered with the Packard-built Merlin 266 engine. It is one of these that we now focus on, albeit briefly.

Airframe number CBAF IX3807, a Spitfire LF XVIe, was allocated the RAF serial of TB252 and first flew in January 1945. It is thought to have spent time with 329 Squadron, 341 Squadron and then with 350 Squadron of the Belgian Air Force from January through to October 1946. By late May 1947 it was with 61 OTU when it collided with SL577 and crashed east of Braunton on 31 November 1948.

It is then known to have gone to 33 MU at Odiham, now with the "serial" 7257M, followed by 7281M with which it became a gate guardian in 1955. From 1959 through to 1967 it was on guard at Acklington, followed by Boulmer, and then at Leuchars in December 1969 until 1986 and finally at Bentley Priory from April 1986. It was one of five traded to Tim Roustis of Historical Flying at Cambridge in 1988 and by 3 July 1992 had become G-XVIE on the UK civil register with Historic Flying at Audley End, Saffron Walden.

The name of Nicholas Stringer appears around 1995 with the Spitfire apparently stored dismantled at Audley End. Its UK registration was cancelled on 28 March 2001 and it was shipped to Avspecs at Ardmore in July 2002. Tony Banta of Banta Aviation Corporation of Dover, Delaware, purchased it and had it listed on the US register as N752TB on 13 December 2002. It was advertised for sale in 2019 for \$US2.5m (\$4.15m) and sold to Charles Summers of McClellan, California, with work continuing at Ardmore.



via Internet

*ZK-NLJ as TB252.*

This is now nearing final stages with it being registered to Avspecs on 27 February this year as **ZK-NLJ**<sub>2</sub>. This is probably the most original worldwide surviving airworthy Spitfire—even down to its original Packard Merlin 266 engine. The earlier user of ZK-NLJ was Air Nelson's Cessna 650 Citation III.

One would be excused to have thought that we had seen the last of the Cessna 188 family—but no, we in fact have an addition this month (March). Dalhoff & King Aviation of Ardmore listed ZK-ETR; the first turbocharged T188C AgHusky in NZ, on 9 November 1981, transferring it over to Motor Holdings Aviation on 27 May 1982. It went on line with Neal Satherley of Central Aerial Co-operative Society of Wanganui in March 1983. In June 1985 the co-op sold it to Fieldair Holdings which very quickly sold the aircraft to Australia where it became VH-LCP on 9 December 1985.



Anon.

*ZK-RJB as VH-LCP at Lord Howe Island 23 August 2019.*

Somewhere along the way during the next 35 years and five owners the turbocharged Continental TSIO-520 engine was changed with a Bonaire 550 conversion. This installed an IO-550 which is easier to manage in low-level operations. VH-LCP was spotted at Lord Howe Island on 23 August 2019 with it moving on to Kerikeri the following day. Following NZ certification it became **ZK-RJB** for Phil Brown of Enfield Enterprises out of Oamaru, with the registration letters of RJB being the initials of Phil's wife. ZK-RJB<sub>1</sub> was

a Micro Aviation B22 Bantam which had actually started out as ZK-FXV. Phil also lists Hughes 369D ZK-HUX.

The New Zealand Airline Academy at Oamaru has purchased two additional new Tecnam P2008 JCs, with touch screen technology, which have become **ZK-TJT** and **ZK-TKT**. These have joined their present P2008s ZK-DDY<sub>2</sub>, ZK-LBI, ZK-TLT and ZK-MBN. Also factory new is the twin-engine Tecnam P2006T which was registered the same day to the NZ agents, Jetboat Com of Gore, as **ZK-TMT**. It does not take too much imagination to know where that will be bound.

## Changes of ownership

Changes in the microlight section see Druine D.31 Turbulent U/L **ZK-BWE**, which has been with Bruce Shepherd of Whangarei since 1971, now lodged with Bruce Clarke at Kerikeri. This was a Syd Jensen of Aerocraft NZ build back in 1959.



*Turbulent twins ZK-BWE and CWE, flown by father-and-son team Bruce and Roger Shepherd.*

Bruce Shepherd ran second Turbulent ZK-CWE<sub>2</sub> at the same time alongside ZK-BWE in identical colour schemes between 2002 and 2018, and Bruce Clarke previously operated EAA Acro Sport ZK-TMP/ZK-XXI<sub>1</sub> from 2004 through to its export in 2008.



Dave Paull

*ZK-DYZ at Timaru, 1 March 2018.*

The Marlborough Aero Club has operated fixed-gear Aerospool Dynamic WT9 **ZK-DYZ** since April 2011. It has now been sold to Alistair Millar of Larundel, near Rangiora. Alistair has previously operated Zenair CH701 STOL ZK-KJR, followed by ICP Savannah XL ZK-CVK<sub>2</sub> under the South Eyre Trust name until mid-last year.

Back in mid-1988 David Kenny of Cromwell listed his Jodel D9 Bede **ZK-FRK** with its 1500cc VW engine, with its first flight being in April 1992. Dave sold it in May 1999 and by August 2007 it was with Neville Sutherland of Blenheim. But nearly 21 years after selling it, it's now back with the original builder, Dave Kenny of Ashburton.

Three Alpi Aviation Pioneer changes took place during March, two of them covered below among the registration mark changes. The third ownership change is for Volkmar Wollenweber's Global Camper Business Trust Alpi 200 **ZK-LPJ** which is back with Alpi Aviation NZ for some attention. Meanwhile Volkmar's Zenith CH701 STOL ZK-VHS is back on line after some work by Custom Aviation at Taieri.



John King

*ZK-TBJ over Lake Taharoa, Northland, 22 June 2019.*

Ruth and Wayne Allanson of Waitomo River Safaris have had Tecnam P92 Tail Dragger UL **ZK-TBJ** since August last year. It has now been placed with Southern Cross Contracting at Tauranga which has been operating Tecnam P96 Golf ZK-WFG since March 2019.

In the Cessna department we see that C172M **ZK-CBZ**<sub>2</sub> is now back with the Sunair Aviation empire following nearly 18 months with Auckland Seaplanes.



A185F Skywagon **ZK-CDM<sub>2</sub>** came to NZ following eight years in Vanuatu with Air Safaris as YJ-CCM, arriving via Port Vila and Norfolk Island on 2 December 2018 and then into Kerikeri and Ardmore the following day. It was certified to Alan Speight of Drury as ZK-CDM<sub>2</sub> on 18 March 2019. Alan has now sold it on to Carl Jackson of Blenheim who also has Cessna 180A ZK-CGJ and Schempp-Hirth Nimbus II glider ZK-GPA.

Cessna 210G **ZK-DCA<sub>2</sub>** was first registered in NZ on 9 July 2010 to Dreamcraft Aviation of Whangarei and went to Ryan Lees at Thames in March 2012. By December 2018 it was with The Mac Air Flying Group of Cambridge, and it has now completed the circle and is back with Dreamcraft Aviation at Whangarei.

The RNZAF Aviation Sports Club (Gliding Section) is based at Whenuapai and operates Grob G102 Standard Astir III ZK-GMP, Grob G103 Twin Astir IIs ZK-GMW and ZK-GNF plus PZL PW5 Smyk ZK-GVF. Add to this B&F Technik Vertri FK 9 Mk IV ZK-RDW and now Cessna 172M **ZK-DSM** tow plane. This is a product of 1974 which was re-engined with an 180hp Lycoming earlier this century for duties with the Drury Towing Syndicate from 2007. Delta Sierra Mike Ltd took it over in late 2007. Ownership details were transferred to the RNZAF Aviation Sports Club (Gliding Section) on 9 March.

Then we have C172N **ZK-JAZ** which has departed from the RNZAF Base Auckland Aviation Sports Club for a new life at Whanganui with the NZICPA and its other 18 aircraft which include six Cessna 172s, three Cessna A152s, five Cessna 152s and single examples of Diamond DA20 and DA40, not to mention a Piper PA38-112 Tomahawk and a Partenavia P68. (Just as an aside, NZICPA is re-engining the Cessna 172s with diesels which, apart from the dirty exhausts, see only positive results.)

Another ownership change at Whanganui involved Cessna A152 Aerobat **ZK-JDB** which has transferred from the Wanganui Aero Club over to Brian Bedwell of 40 South Aviation.

Another C172 on the move is the P model **ZK-EWF** which spent 25 years with Owen Harnish from near new in 1985, then spent eight years with the M.D. Williams 2005 Trust before joining Mike Groome at Wanganui from December 2015. It is now listed with John Zinzan of Taupo.

Mentioned last month was the short-term change for Cessna A185F **ZK-MCV** from Inflight Ski Planes to Air Milford 2000 at Queenstown, to cover for its A185F ZK-ENW being down for maintenance. ZK-MCV has now been listed to Aoraki/Mount Cook Aviation Services.

Piper changes see PA-32-300 Cherokee Six **ZK-DOP**, which has been with the Kaikoura Aero Club since late 2014, being sold to Richard Mason of Masterton who previously operated Socata TB10 Tobago ZK-JLG. The Kaikoura Aero Club fleet now consists of Piper PA-28-180 Cherokee Archer ZK-DUQ, EuroFox 3K ZK-TUG<sub>2</sub>, Cessna 172M ZK-JCT and Gippsland GA8 Airvan ZK-EHS<sub>2</sub>.

Piper PA-38-112 Tomahawk **ZK-EQX** was acquired by Bruce Robertson in 2010 and has spent nearly 10 years parked nosed into the side of the hangar of AVTEK at Timaru Airport where Bruce is the boss. It has now been sold to Steve Tempelman of Christchurch, has been overhauled from the ground up, repainted and is now a resident in the Mainland Air hangar at Momona.

Over recent years the J.F. Managh Family Trust has operated Piper PA-38-112 Tomahawk ZK-WNB, Piper PA-28-140 ZK-CNN and, since July 2009, AESL Airtourer 115 **ZK-CWA**. This has now been sold to Tony Payne of North Shore who also has listed Piper PA-28-140 ZK-DED, Jodel D112D ZK-CGL<sub>2</sub>, Cessna 177B Cardinal ZK-DFU, Thatcher CX4 ZK-CXY<sub>4</sub> and Stoddard Hamilton Glasair RG ZK-NRG. J.F. Managh & Associates still operates Piper PA-28-180 ZK-DFL.

Pitts S-2E **ZK-ELI** was built up by Hank Courtenay of Lower Hutt in the early 1980s from an Airspares kit. By February 2003 it was at Motueka with Vince D'Ath of U Fly Extreme until sold to Russell Harris of Papamoa. It has now moved on to Pierre Pechon of Gisborne.

NZ Aerospace Fletcher FU24-954 **ZK-EUA** first flew on 16 March 1982 and was employed by the Mount Cook Group until dashing across the moat in August 1988 to become VH-HVP. In mid-1997 it was converted for aerial survey work. It returned to NZ in a 10hr 15min direct flight from Essendon to Queenstown on 17 October 2017 and 10 days later returned to its old ZK-EUA marks for Dave Evans

of Aerial Spreading at Amberley. It headed south to join MacKenzie Aviation of Gore in January.

Glider movements include Schempp-Hirth Discus-2cT **ZK-GFR** which Jonathan Cross has had since 2010. Jon imported electric self-launcher Schempp-Hirth Ventus-3F ZK-GSR just over a year ago so has now sold the Discus 2cT ZK-GFR to the GFR Syndicate of Auckland.

Another Schempp-Hirth Ventus-2cT change is for **ZK-GZY** which is now with Tony Bayliss of Carterton, being previously listed with the Bayliss Davies Syndicate.

Rolladen-Schneider LS8a **ZK-GGP<sub>2</sub>**—known as *Carpe Diem* during the time Nigel Ackroyd owned it—was sold to Hadleigh Bognuda in late 2007. It is now listed with Alonzo Kelly of Nelson, while Hadleigh still has Schempp-Hirth Arcus M ZK-GBF<sub>2</sub>.

Grob G103 Twin II **ZK-GNF<sub>2</sub>** was imported by Kevin Wisniewski, a member of the Norfolk Aviation Sports Club near Stratford, and registered in early 2011. It was transferred to the club on 30 June 2011 and has now been sold to the RNZAF Aviation Sports Club (Gliding Section) at Whenuapai.

We start the helicopter changes with Robertson R22s and see that Beta **ZK-HED<sub>2</sub>** has moved on from Far North Helicopters of Kaikohe to Malcolm Moore at Reefton. Malcolm operated Robinson R22HP ZK-HTD<sub>2</sub> some years back.

Greg Bishop of Paraparaumu has sold his R22 Beta **ZK-HNS<sub>2</sub>** to Russell Till of Owango in the central North Island. This had been operated by the Kapiti Districts Aero Club prior to Gregg acquiring it last September.

For the Robinson R44s, Raven II **ZK-HOH<sub>3</sub>** ex Cedar Lodge Propco of Auckland now appears under the Hurunui Helicopters name of Amberley, where it joins Raven II ZK-IJT.

R44 Raven II **ZK-ILY** came in from Japan for a 12yr rebuild with Heli Maintenance at Christchurch before going to Horizon Helicopters from 1 October 2018. It has now gone to Mid West Helicopters of Whanganui which also operates a single R22 Beta, two R44s, a single AS 350 B2, three Hughes 369s and a single NOTAR plus one Bell 206.

While with MD 520N NOTARS, we note that Rangitikei Helicopters of Rewa has taken on **ZK-HFJ<sub>3</sub>** from Fox Franz Heliservices, joining its other NOTAR ZK-ITX and a R44, a Bell 206B and a Bell 505.



ZK-IKG at its Mount Hutt base, 18 January 2018.

Another NOTAR ownership covers **ZK-IKG** which has been with Mount Hutt Helicopters since 2008 (originally as ZK-HBC<sub>4</sub>) and is now listed with Heliverites of Oamaru.

Another MD change is for MD 369E **ZK-HTN<sub>3</sub>** which was listed to DJ & NA Shanks on 5 March 2014 and transferred over to his Milford Helicopters on 17 April 2014. In mid-July last year Action Helicopters of Queenstown became the listed operator. It was returned to DJ & NA Shanks of Te Anau from 3 February.

Another departure from Action Helicopters of Queenstown has Eurocopter EC 120 B **ZK-HNG<sub>7</sub>** (until recently ZK-ICE<sub>2</sub>) head off to join Airwork.

And a further Hughes 369E move has **ZK-IOB** departing from Cranswick Enterprises of Tolaga Bay for Mackenzie Helicopters out of Fairlie.

Guimbal Cabri G2 ZK-HZO<sub>2</sub> was first registered as ZK-HCS<sub>5</sub> in January 2014 with Pacific Helicopters of Christchurch and transferred over to Christchurch Helicopters 2001 in March 2015. It was re-registered as **ZK-HZO<sub>2</sub>** on 31 May 2017 and has now been sold to Button Bros of Rangiora which also operated Robinson R44 Astro ZK-HAR under the Button Logging label.

Now for some Aerospatiale/Eurocopter changes. AS 350

BA **ZK-HJP<sub>3</sub>** and AS 350 B2 **ZK-HMD<sub>4</sub>** have transferred, again, between Heliworks Queenstown Helicopters 2012 and Southern Lakes Helicopters of Te Anau. The same change applies to Eurocopter EC 120 B **ZK-IWC**.

Noted for sale in February was the Hans Holtz Mooney M20C Ranger **ZK-MWP**, now with close to 5500 flying hours. It has found a new buyer in Robert Priddle of Cronulla, NSW, and so is a strong candidate for export in the future.

Nelson Pilot Training imported Evektor-Aerotechnik Sportstar Plus **ZK-NPT** in late 2011 to go on line with the similar ZK-MAC<sub>2</sub>, with a name change to Pacific Pilot Training of Nelson from 23 July 2013. This has now been sold to David Gordon of Hunterville.

## Changes of registration marks

The West Auckland Airport Company (at Parakai) obtained Tecnam P96 Golf UL ZK-JGH<sub>2</sub> from James Hodge in late January this year. It has now been re-registered as **ZK-ECL<sub>2</sub>** with the earlier ZK-ECL being a Taylor Coot Model 1A.

Christchurch Helicopters 2001 acquired McDonnell Douglas 500N NOTAR ZK-IGA from CVI Aviation back in October of 2017. It has now re-registered it to **ZK-HNV<sub>3</sub>**, marks previously used by an Aerospatiale SA315B Lama and a Hughes 369HS.

We had three Alpi Aviation Pioneer registration changes during March. Pioneer 200 Hawk ZK-KPD<sub>1</sub> has been with Kevin Dore at Rangiora since December 2015, but this was sold to Stuart Larson of Rangiora on 25 February this year and re-registered as **ZK-SML<sub>2</sub>** on 5 March. Prior to this Kevin Dore had purchased Pioneer 300 ZK-RJV from Geoff Rogers of Wanaka on 28 January, and following the sale of his 200 ZK-KPD<sub>1</sub> and its relisting to ZK-SML, he has re-registered ZK-RJV as **ZK-KPD<sub>2</sub>**.

The third Pioneer change was Érol Yanar's model 300 ZK-YAN which became **ZK-LPT<sub>2</sub>** on 17 March—and was then sold to Gary Montague of Dunedin from the 19th. Confusingly, the first ZK-LPT was also a Pioneer 300, with Bob Trotter before becoming ZK-MIH with Murray Hagen.

## Deregistered

Brett Cooper of Ohai transferred his Piper PA-28-160 Cherokee C ZK-CNY to Brad Cooper of Invercargill early this year. Now Brett's Micro Aviation B22 Bantam, **ZK-FVG** which he has had listed since only October last year, has been withdrawn and cancelled.



ZK-HBS at Rangiora, 24 June 2017.

The 1972-built KHI Kawasaki-Hughes 369HS **ZK-HBS<sub>3</sub>** came in from Japan via Rotor Flite in 2002 and went to Rick Lucas Helicopters/Helipro where it remained until Alana (Poppy) Tuck of Kumara acquired it in November 2014 and operated under the Glacier Country Helicopters name until being withdrawn in mid-March.

Robinson R22 Beta **ZK-HFI<sub>2</sub>** was listed in October 1991, and from July 1998 it spent 20 years with Alistair Martyn of Spraypro of Martinborough. After 11 months with Precision Helicopters it went to Jake Kelly at Te Kuiti. It has now been exported.

Volcanic Air Safaris of Rotorua imported a Eurocopter AS 350 B2 from the USA, listing it as **ZK-HPB<sub>7</sub>** on 27 February 2019. Alas, it was damaged in the volcanic activity at Whakaari/White Island on 9 December 2019 and has been cancelled from our register. It may be of passing interest that while still in the States it had 10 inflight smell/smoke incidents reported.

*Acknowledgements: AHSNZ, FAA, CASA, CAANZ websites, Dave Bates, Richard Currie, Keith Morris, Tony Arbon, Aaron Murphy, Mike Condon.*

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# Don't call me Captain!

## Part 9: Change of seat



by George Richardson

Bob Neate/Geoff Goodall

I flew on as a flight engineer and was contented but still had the unquenchable urge to be a professional pilot on big aircraft. I had two shortcomings: one, I didn't hold an instrument rating; and two, I didn't hold an airline transport pilot licence (ATPL) and so lots of study and work were required.

I started with the instrument rating. This involved bashing around the sky under a hood and flying by sole reference to flight instruments. I did the required amount of training in a single-engine aeroplane under the hood and then applied for a flight test.

The then new flight examiner was a small man with a woolly hairstyle named Harry Bielby, small in stature and big in ego/ importance. The first instrument flight test was in PA28 Cherokee ZK-CNK. The flight lasted a little bit over an hour and I had the impression I wasn't too far away from the required standards.

On arrival back at Ardmore, and after a lot of paperwork and money (the fee) changed hands, Harry informed me I had failed. This came as a severe blow to my ego, so I asked where I'd gone wrong. The reply came: "In the first five minutes. Your basic panel work was poor."

I couldn't believe my ears! Basic panel poor? I was, even in hindsight, right up to speed in basic panel flying and my beacon bashing part was well inside the acceptable tolerance set out by the CAA.

I accepted Harry's decision in poor grace, and at this point he broke the impartial rules by saying the aircraft was not suitable and the Auckland Flying School had a poor standard and struggled to maintain a standard.

I was pissed off right up to the eyeballs, and I let Harry know and advised him as a public servant he was out of order.

I went back to taking some more training which involved two sessions, making a total of 2hr 40min. The last 1hr 40min was with a Lew Day in Mooney M20 ZK-CPF. On 20 September I flew again with Harry, but this time after starting the engine I advised Harry what I expected from him.

I did not want to hear after an hour's flying that I failed in the first five minutes, and that if I went outside the standards required I was to be advised with two options: go back and land the aircraft with no more to do; or make one more attempt at the failed exercise.

Harry was taken aback by this and said he would not comply with my wishes, so I advised him the flight test was off and to get out of my aeroplane. He immediately threw a hissy fit, so I shut the aircraft down and said, "Piss off. I will now advise the Director that you are neither impartial nor reasonable in your attitude towards me."

He paled at this and then said, "OK, we'll do it under your request but it is highly irregular."

I said, "OK Harry, let's go, and if we get back and again you say I failed without advising me until after the flight I will knock your silly little head off."

"Still up to standard?" He nodded wisely throughout the 1hr 40min it took to do the flight.

After the paperwork was done and dusted he said, "You're not a very good instrument pilot, but I know where you are heading with the qualification and you will not be flying alone." I confirmed his statement and bade him goodbye. I then went back to work with TEAL.

I befriended another pilot who put me into the hands of Peter Duggan-Smith who flew a Cessna 310 for James Fletcher. Peter agreed for me to fly with him, he gave me a

rating and I flew whenever I was able, with him up and down New Zealand IFR without anti-icing equipment. A couple of times, while trying to struggle over a weak front we iced up and the Cessna maintained level flight or even descended with ice accretion. The old thing carried about enough ice to chill a small G&T and then it stopped flying.

Peter was a menace in the air. He would not identify NDBs and he would not consult a chart; he did it all from memory.

Peter eventually came to an untimely end in Cambodia where he was gun-running. He started to cart guns both ways for both sides and then: Gone!

I flew on as an F/E until March 1970. I went into head office with the offer of a job as a flight engineer with a carrier in San Francisco and I explained to Doug Keesing, the flight operations manager and handed in my notice that I was leaving Air New Zealand. (There had been a name change from TEAL to Air NZ in April 1968.)

He asked why I was leaving, so I told him. Air NZ had a policy, once an engineer always an engineer, and I had been offered a position overseas on DC-8s for twice the pay. He stated: "You want to be a pilot, don't you?" I answered in the affirmative but endorsed it with, "I work for money, not for pleasure."

He then said, "I'll give you a pilot job if you don't leave Air New Zealand."

My reply was: "Give that to me in writing and I'll withdraw my notice."

He was as good as his word, and I was scheduled to do another L188c course early in March the following year. What he did not say, and I was not aware of at the time, was that my pay would go from a seventh-year engineer's pay to a first-year first officer's pay, a reduction of 45 percent!

I grizzled at first, but when I did my sums I found I would be ahead of a flight engineer after another five or six years. I bit my tongue.

The March course was for raw recruits to the airline, but all were experienced pilots. Some of the chaps were Fred Douglas, Jim Woodhams, Peter Oats, Albert George Williams, Murray Rutherford, Derek Faulls and John Brough, to name a few. I did very little work on the Electra course because I already held a flight engineer's rating on the aircraft, but I was assured that the concept would appear different.

That was raw, unadulterated hogwash. The L188c Electra pilot's rating on flying the aircraft was a handful. During the years that I spent as a flight engineer it had not occurred to me that a relative bearing ADF and an RMI were different.

The pure handling of the aircraft was no problem as it was just a high-powered and reasonably fast aircraft, but the instrument flying was a bit different to a Mooney or a Cherokee.

My training captain was Bill Mackley, a pilot of long experience and a good instructor. All went well until I went under the hood and started instrument approaches. The ILS and VOR approaches were easy, but when it came to the twin ADF approach it all turned to worms. I tried to use the ADFs as a relative bearing indicator and missed the runway by about half a mile.

Bill was a little perplexed at this, so we landed and went down to the holding bay on the threshold of 23 at Auckland Airport and taxied around in circles for about 20min until I got the gist of the ADFs. After the light came on I found the Electra a nice aircraft, but my instrument flying was still bloody awful. It took many years before I got over the leans and smoothed out my instrument flying.

To be continued

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