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**Colourful South Pacific airliner**

Air New Zealand expects all necessary inspections for its Rolls-Royce Trent 1000 engines powering its Boeing 787-9 Dreamliner fleet will be completed within the next 12 months.

In the meantime the airline plans to dry-lease three widebody airliners as cover for grounded 787s awaiting engine checks alongside schedule changes on certain routes in order to offer “better reliability” for passengers. Air NZ CEO Christopher Luxon said during the company’s 2017/18 full year results presentation.

He said, “We continue to work closely with Rolls-Royce to limit the impact of the global Trent 1000 engine issues, but we do recognise that we need to deliver greater schedule certainty for our customers.”

Over the summer holidays earlier in 2018, Air NZ wet-leased aircraft as cover for its 787-9s being grounded due to global Trent 1000 engine issues as regulators calling for inspections on the Rolls-Royce Trent 1000 engines. However, as the mandatory engine inspections have taken longer than expected to complete, the airline has sought temporary replacements for dry-lease, operated by its own pilots and cabin crews when further engine problems were discovered.

In May ex-Singapore Airlines B777-300ER 9V-SYL was registered to Air NZ as ZK-OKT, configured in business and economy classes.

EVA’s B777-300ER B-16171 was dry leased as further cover, registered ZK-OKT with a business, premium economy and economy cabin. The company said in its full year results the three dry lease aircraft would comprise two B777-300ERs and one B777-300.

Rolls-Royce is ramping up MRO capacity for Trent 1000 inspections as regulators have called for more regular checks on Trent 1000 engines’ intermediate pressure compressor blades, due to durability issues. In August the engine manufacturer said the number of aircraft on the ground reached about 50 earlier in 2018 and was gradually being reduced.

Air NZ says the inspections were taking longer than initially expected, “and we were early notified that there is likely to be a delay in getting some of our engines back.”

The delay is not related to any new technical issues but rather because the timing of the engine maintenance programme has shifted, and the situation is described as a “global production and parts backlog.”

Mr Luxon told media this issue was affecting the global fleet and as Rolls-Royce dealt with that through its production facilities it has a throughput issue and a challenge. “And so, when we send the engines up there for their maintenance checks and servicing, it’s taking longer for them to get through the shop and that’s ultimately what’s leading us to reset now,” he said.

Air Tahiti Nui’s first B787-9 has emerged from Boeing’s paint shop, registered F-OMUA, with the word MUA meaning “moving forward” in Tahitian. The airliner has been named Fakarava after the picturesque atoll in French Polynesia’s Tuamotu Islands, which boasts a lagoon with similar shades of blue to its striking paint scheme.

With a design and colours inspired by the beauty and richness of the Polynesian islands, the livery features Air Tahiti Nui’s trademark tiare flower, a tattoo pattern representing a story of Tahiti and its people and the blue hues synonymous with the islands.

**Top position handed over**

The new Chief of Air Force, AVM Andrew Clark, with outgoing Chief of Air Force AVM Tony Davies looking on.

The new Chief of Air Force, AVM Andrew Clark, was installed at a Change of Command ceremony at RNZAF Base Auckland on 7 September.

During the ceremony, Chief of Defence Force AM Kevin Short said AVM Clark was well-suited to lead the RNZAF. “He has the integrity, character and finesse to lead.”

AVM Clark said it was a great honour to take on the role. “It’s an exciting time to work in the RNZAF, with work being undertaken in New Zealand and around the world, in particular the Pacific, Antarctica and the Middle East,” he said.

AVM Clark joined the RNZAF in 1986 as a navigator and through his early career served operationally on Orions and instructed aircrew in Australia and New Zealand. He was later a staff officer, HQ RNZAF, project manager for the P-3K2 Orion introduction into service and CO 3 Squadron. He also completed four P-3K2 Orion operational tours, including commanding an operational mission in the Middle East.

Other recent postings include Assistant Chief of Air Force Strategy Management, Director of Strategic Commitments, Director of Defence Intelligence, Deputy Chief of Air Force, and Assistant Chief of Capability. Most recently, AVM Clark has served as the Air Component Commander for the RNZAF.

He replaces as Chief of Air Force AVM Tony Davies, who is beginning his new role as Vice Chief of Defence.

**More airliners coming**

Air New Zealand has signed a commitment with Airbus for seven A321neos for its domestic operations. The commitment is separate to the existing order for 13 Airbus A320ceos on a one-for-one basis until all A321neos start arriving in 2020, replacing aircraft from the time domestic-configured fleet will stay at 20 aircraft in 2019, with the temporary transfer of A320ceos currently used on the trans-Tasman routes redeployed into the New Zealand market. The fleet will stay at 20 aircraft from the time domestic-configured A321neos start arriving in 2020, replacing A320ceos on a one-for-one basis until all seven have been delivered in 2024.

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Aviation News ...

Commercial, recreational UAV pilots register

More than 10,000 drone pilots have now registered with Airshare to operate in New Zealand, following a hump- er year for visitor arrivals. Official statistics reveal its 8.5 percent arrivals growth over the past year was more than twice that of the national growth at 3.9 percent. The world average passenger growth is 6.4 percent.

Chief aeronautical and commercial of- ficer Justin Watson says the statistics are outstanding and reveal strong growth from all the key visitor markets of Australia (7.8 percent), China (25.0 percent), Europe (7.7 percent) and the USA (11.8 percent).

“The growth reinforces the collective work we have been doing with the South Island tourism industry and our airline part- ners to grow connectivity and arrive into the South Island,” he says. “We champion the South Island as an aviation hub for drone pilots operated by Airways NZ.

“The vast majority of visitors through Christchurch travel around the South Island. With each visitor spending an average of $3600, they make a significant economic con- tribution to the regional economies. Whether it’s a five-star hotel in Christchurch or a café on the West Coast, the financial impact of the extra arrivals is being widely felt.

“Southern producing is getting to make international markets direct and quickly on our international airlines, with record flights being added.

“Boeing has made a huge investment in Christchurch and we are developing the comprehensive Chinese New Year celebrations schedule every year.”

Mr Watson says a record number of peo- ple have been through the terminal in the past year and is likely to reach 7 million visitors in the current financial year.

“Every traveller averages one person meeting or greeting them, so it’s a safe to say we will welcome more than 12 million people in total this year. The terminal and all our processes are set up for that—and more—and we’re constantly looking at how we can improve the experience for everyone who comes through the airport.”

The airport has won several awards this year, including being named in the SKYTRAX World Airport Awards as the best regional airport in Australia/Pacific.

Poseidon training enhancement

Boeing will update the P-8A Poseidon training system for the US Navy in a four-year, $US194m ($294.5m) agreement that the RAAF has added it to the 1200 microlights fleet. Test pilot David Wilkinson looks for a university reg- istration and training requirements for drone pilots implemented to make sure all air- users are able to continue to fly safely.

In May Airways surveyed 1460 drone pilots for the inaugural Drone Trucker re- port. Sixty percent of survey respondents supported mandatory registration and 59 percent said they supported mandatory training.

Airways NZ is progressing with the development of a future drone traffic man- agement system to safely integrate drones into New Zealand’s wider traffic network. Trials are underway to test technologies allowing drones to be accurately tracked once overcome the pilot’s line of sight and provide and detect and avoidance capability to keep them safely separated from other aircraft.

October 2018

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

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Aviation News is published 11 times a year and priced by Inkwise, Rolleston, and distributed by
Gordon & Gotch (NZ) Ltd Registered by POHO for postage by post as a magazine.
ISSN 1172-0822 (Print)
ISSN 2324-3511 (Online)

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The Front Page: Happiness is flying in your own creation! Gary Briggs (in yellow lifejacket) built this Sonex from plans over seven years and added it to the T200 microglider on the civil register. These, plus an unspecified number of light sport aircraft (LSA), comprise a substantial proportion of New Zealand’s recreational aircraft fleet. Test pilot David Wilkinson looks more serious as he’s concentrating on his flight. SA feature starts on page 16. Photograph © John King

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October 2018
Right census for whales

The NZDF works with other New Zealand agencies to secure the country against external threats and is called upon regularly to respond to emergencies at home and overseas.

In what might seem off the beaten track, the NZDF recently carried out a census of southern right whales, or tohora, among the New Zealand sub-Antarctic islands.

Air Component Commander Air Cdre Tim Walshe said more than 100 whales were sighted during a surveillance patrol by an RNZAF P-3K2 Orion at Auckland and Campbell Islands.

“We regularly support other government agencies in their work by providing our aircraft and ships as platforms for monitoring and surveillance activities,” he said.

“This is a return to our roots, reflecting the importance placed on our heritage and our environment. The census conducted by the NZDF complemented the work carried out by the University of Otago on the movement patterns of southern right whales.

“We’re looking forward to working with the NZDF and other researchers to glean all the information from the many images that were taken.”

Tohora are a native migrant to New Zealand. They are typically black but can have irregular white patches, and they have large, paddle-shaped flippers.

Single-aisle fleet expands

Boeing and the Virgin Australia Group have announced that the airline is adding the largest member of the B737 MAX family to its growing single-aisle fleet.

Orders for 10 B737-MAX 8s have been converted to the larger MAX 10 variant, due to enter the expanding fleet in 2022.

The airline says it saw the value of adding the MAX 10 mix to its aircraft offering.

“With the MAX 10, we can support additional capacity and flexibility to our growing single-aisle fleet. Orders for 10 B737-MAX 8s have been converted to the larger B737-MAX 10 variant, due to enter the expanding fleet in 2022.

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Avnews...

Airport repairs and expansion

Port Vila’s Baverley International Airport runway upgrade is due for completion early next year and the welcome mat will be rolled out to Air New Zealand to resume services. But Airports Vanuatu Ltd (AVL) has big plans for the terminal, including growing existing markets, developing routes to longer-haul destinations and building a new terminal.

“We need to be competitive regionally and internationally,” AVL CEO Jason Rakan told media recently. “We are working towards code E compliance for wide-body aircraft.”

“You need to have a terminal that can handle the hubs in an effort to gain scheduled flights and bring an end to air traffic control services sitting on top of the terminal building where they have been since 1974.”

“Of the quirks of having the cab on top of the terminal was that if the terminal fire alarm happened to go off, we would need to pause our service,” says Mr Sumner. “Having a standalone tower adds to the resilience of our service.”

“Passengers are at the core of our business,” says an airline spokesman, “so it’s important to invest in our lounges in Christchurch and Nelson. Plans are also underway for new regional lounges in Auckland, Wellington and Christchurch.”

“Greater opportunities to extend services in New Zealand’s regions.”

Enlarged lounges started

Air New Zealand begins construction this month of a new enlarged regional lounge at Auckland International Airport as part of a $80m investment in lounges throughout NZ. The $21m lounge is expected to open in the next two years.

Auckland’s lounge will cater for up to 265 passengers, more than three times the service enjoyed in the existing terminal at Port Vila’s Bauruari International Airport.

Air New Zealand's Wellington Airport domestic lounge is also planned to undergo a refurbishment in the coming months.

Double service to Samoa

Samoa Airways plans to start nonstop flights between Apia and Brisbane from 13 November, operating on Tuesdays and Sundays with one Boeing 737-800. The airline’s new route is being launched in partnership with Air Niugini.

Virgin Australia is currently the only carrier with nonstop flights between Apia and Brisbane. This area of Queensland is home to a large Samoan population, and Air Samoa says, “We are particularly pleased that a new carrier, with the support of Air Niugini, is able to respond to calls by our community who travel frequently between Samoa, American Samoa and Brisbane.”

The airline is confident that the new service will include a café and bar, barista station, business, lounge and quiet areas as well as a self-service food and drinks station.

A new regional lounge is currently under construction at Taurang Airport, offering three times more seating than the current lounge and expected to open later this year. Plans are also underway for new regional lounges in Christchurch and Nelson.

“Passengers are at the core of our business,” says an airline spokesman, “we expect to see annual passenger numbers grow from 17m to 19m over the next two years, so it’s important to invest in our lounges in order to meet this growth.”

On August 30 Airways NZ opened its new $6m air traffic control tower at Nelson Airport. The new structure, officially opened by Airways board chair Judy Kirk, will support more than 46,000 flights operating in and out of one of New Zealand’s busiest regional airports every year as Nelson Airport undertakes a major redevelopment, including a new terminal building and infrastructure upgrades.

Combining a strong and safe structure with excellent functionality, the new control tower is a significant investment that will help to enable the future growth of aviation and tourism in Nelson, says Airways CEO Graeme Sumner.

“It’s a facility fit for one of New Zealand’s busiest regional aerodromes and has been designed to underpin Nelson Airport’s growth with continued safe and efficient air traffic services.”

Located on the eastern end of the new airport terminal, the six-level 22m high tower will give air traffic controllers an optimal view of the airfield. It has been built to meet complete modern building standards and brings an end to air traffic control services sitting on top of the terminal building where they have been since 1974.

“The design compliments our stunning new terminal in delivering what will be an unrivalled regional airport experience for all our customers.”

Airways began construction of the tower in December 2016. It was designed by the architectural and engineering firm Studio Pacific and built by Gibbons Construction of Nelson.

Samoa Airways in 2017 as the country’s national carrier with a leased B737-800. The airline currently serves Auckland and Sydney from its primary hub at Faleolo International Airport, as well as Fagafou in American Samoa from the smaller Fagatuli Airport in Apia.

Its DHC-6 Twin Otters also serve a number of domestic routes within American Samoa.

The decision to launch a new carrier came after the Samoan government terminated the Virgin Samoa joint venture with Virgin Australia, established in 2005. Media reports at the time said the decision to terminate the joint venture was due to concerns over high fares.

A memorandum of understanding with Fiji Airways was signed to help establish Samoa Airways. Following the termination of the joint venture, Virgin Australia has maintained services to the Pacific with nonstop flights to Apia from Brisbane and Sydney.

The application to operate between Auckland and Apia was denied.

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Offshore maintenance concerns

Virgin Australia, the parent of budget airline Tigerair, has taken swift action to end all maintenance work at an offshore facility in the Philippines after serious faults were detected, reported the Sun-Herald on 16 September.

According to the report, one of three B737s in the Tigerair fleet was flown to Clark International Airport near the Filipino city of Angeles on 17 July for scheduled maintenance. The facility is owned by Singapore Airlines, which owns 20 percent of Virgin Australia.

The aircraft was repositioned to Melbourne at the end of July, and it was then that Tigerair engineers discovered that a modification to the aircraft’s smoke evacuation system in the cargo bay had been incorrectly installed.

Engine vibrations unsatisfactory

Pratt & Whitney is investigating newly emerging incidents of excessive vibration in its PW1100G engines powering the Airbus A320neo, the latest in a series of problems that have plagued the new geared turbofan.

Higher than usual engine vibrations are said to be noticed after fewer than 1000 flight hours in some cases, becoming more intense over time and ultimately requiring an engine change. Pilots are receiving engine vibration alerts in the climb phase at higher power settings in particular, and the vibrations subside in the later phases of flights.

The manufacturer has yet to identify the cause and is assessing any possible connection to prior design issues.

Steve Purvinas, federal secretary for the Australian Licensed Aircraft Maintenance Engineers Association, described the work as that of a “home handyman” with unsecured components and wires connected to the wrong terminals. This led to remedial work and testing being required in Melbourne, which meant the aircraft sat idle for a further three weeks and forced the airline, which has a total fleet of 13 aircraft, to cancel some services.

Then on 22 August another fault was detected with the aircraft when crew found a seatbelt not correctly bolted to the seat, prompting Mr Purvinas to comment: “What concerns us most is other latent defects, hidden now, but waiting to resurface at 30,000ft. They didn’t know about the seatbelts — what else don’t they know?”

Lufthansa, one of the first A320neo operators, has been hit hard with its fleet of A320s accumulating a total of 254 days grounded, 13 times worse than for its A320ceo fleet, since it took delivery of its first PW1100G-powered airliners. So far Lufthansa has made 14 unscheduled engine changes on its new due to a variety of reasons, including vibration issues.

The FAA says it is aware of the vibration problem and is currently working with Pratt & Whitney on the cause. However, a spokesperson says it’s too early to determine whether to issue mandatory instructions to operators.

The company behind a video training platform have contributed to insufficient new recruits, and the aviation industry will need to adopt innovative training solutions to enable optimal learning through immersive technologies. This is exactly what we are achieving with V-Prep—we can rapidly increase pilot training at low cost as they can have access to training for a whole year for less than the cost of a sim in a simulator.”

The subscription-based training platform has seen thousands of sign-ups in the first year from over 120 countries, and respected training organisations are now distributing and using the V-Prep platform.

Capit Feneey says the platform is easily adaptable and can be modified for individual airlines using their own SOPs and livery.

V-Prep has started the process of creating the new training material by working with experienced B737 training captains to identify what videos the platform will be launched with, and which videos will be added after launch.

Capit Feneey says, “Generally, all videos for launch would cover the topics required to pass a first check ride (i.e. proficiency check/operator’s proficiency check).

“We go to a simulator and film the procedures for the videos, before starting the editing and production stage where we turn the footage into training films by adding 2D and 3D animation and narration. Once approved by the training captain, it is then put on the platform ready for launch.”

“When we have all the videos for launch, we release access to the website and continue to add new videos each month. V-Prep $US295 annual subscriptions are growing 15 percent per month, and Capt Feneey says, “From feedback from our subscribers, it seems that financial pressures within the airline industry have meant many pilots have decided to pay for additional simulator training sessions themselves (which is very expensive) or use our platform, which is far more cost effective.

“This, along with recommendations, is a major factor which has contributed to the platform’s success.”
Electric aeroplane makes progress

As certification flight testing of the Colorado built all-electric Sun Flyer 2 continues (see earlier report, page 4 July Aviation News) the company recently announced orders for a further 30 of the two-place trainer for the regional applicators to restore its unique Hawke’s Bay ag operator Rural Air Work’s, says, “Nano-Clear products, contacted one of Nano-Clear’s regional applicators to restore its unique Cresco appearance has been restored to its factory finish. The product’s permanent clear coat sur-
cface protection system is claimed to shield the aircraft’s surface and protect it for at
least 10 years. Unlike a traditional polish, Nano-Clear is a single-component clear-coat system that fills the pores and then completely covers the surface.
It is said to protect this aircraft and other assets such as transport, machinery and joinery on houses from abrasions, chemicals, minerals, dirt and salt, as well as significantly reducing vehicle cleaning and maintenance by 50 percent and rejuvenating colour and gloss.

At $US5/hr for the aircraft which will have three hours’ endurance on a single charge.

Ideas flying in from all over

Airbus says more than 2000 students already registered for its current round of Fly Your Ideas can now access to the digital competition platform in order to upload their ideas in round 1 of the competition.
The sixth Fly Your Ideas competition was launched in June, and the next generation of innovators can now submit their proposals tackling one of the six challenges set out by Airbus: electrification, data Services, cyber security, internet of things, artificial intelligence and mixed reality.
Students need to fill in an online questionnaire about their idea, highlighting the technology behind it, market analyses, originality, added value and potential obstacles. In order to visualise the idea, the teams must also submit a simple sketch.
The round 1 submission phase ends on 16 November and is followed by an online assessment where a team of Airbus specialists recruited from across the group will review and evaluate all submitted ideas. The live final of Fly Your Ideas will be held next year, where students will have the opportunity to showcase their ideas to an audience of industry experts.

The competition is an opportunity for students to build valuable employment skills including teamwork, project management and presentation skills and to apply their classroom learning to real-world challenges.
As well as joining Airbus on site for further develop their ideas, up to six finalist teams will compete to share a prize fund of €45,000 ($80,000) and the chance to take their idea forward within the industry.
Since the competition was launched in 2006, more than 20,000 students from universities and students from all over the world to innovate for the future of aerospace.
Airbus is seeking ideas that could change aerospace in the decades to come and create a safer, cleaner and better-connected world.

The competition platform in order to upload their ideas in round 1 of the competition. The competition platform in order to upload their ideas in round 1 of the competition. The competition platform in order to upload their ideas in round 1 of the competition.
Typhoon isolates Kansai Airport

All of this was experienced in Osaka and nearby prefectures with eight people killed, dozens injured and a million inhabitants evacuated. Kansai Airport was inundated and a sizable tanker broke free of its moorings and smashed into the roadway linking the island airport to the mainland.

This stranded 3000 people at the airport for 24hr, compelling them to wait out the typhoon’s fury in sweltering conditions until authorities were able to restore infrastructure services and order in the wake of the typhoon with characteristic Japanese efficiency and to allow people to resume their journeys.

No doubt this incident will evoke some contingency thinking about future scenarios and how to mitigate for similar events. Perhaps tunnels and standby power solutions could be in the offing.

The hurricanes of the North Atlantic and the typhoons of the North Pacific are essentially the same, incidentally—spinning anti-clockwise and opposite to cyclones in the southern hemisphere, their respective behaviours all due to the Coriolis force.

Virgin fuels a first for Australia

Virgin Australia has achieved an Australian first with the successful completion of a trial to deliver sustainable aviation fuel, or biofuel, through Brisbane Airport’s general fuel supply system. As a result of the trial, biojet has now been used to fuel 195 domestic and international flights departing from Brisbane Airport, travelling more than 430,000km to destinations across Queensland, Australia and makes Brisbane Airport one of the southern hemisphere’s first to engage in using sustainable aviation fuel for supply into the fuel infrastructure.

Virgin Australia says, “We are proud to lead the delivery of sustainable aviation fuel into the fuel infrastructure at Brisbane Airport and that Virgin Australia is leading the way in the production and use of sustainable aviation fuel in Australia. We recognise that there is a great opportunity to develop affordable aviation fuel in Australia. We welcome the approach from Jetstar NZ, Airways NZ, Palmers and supply chain partners Caltes and DB Schenker, Virgin Australia led the procurement and blending of biojet with traditional jet fuel for supply into the Brisbane Airport fuel infrastructure.

This marks the first time that sustainable aviation fuel has been delivered through the general fuel supply system at any airport in Australia and makes Brisbane Airport one of the few airports globally to achieve this.

Biojet meets recognised international quality and safety standards and contributes to lower levels of carbon emissions compared to traditional fossil jet fuel on a life cycle basis. It can be derived from sustainable sources including sugarcane bagasse, molasses, wood waste and agave, and it is already in use at Oslo and Los Angeles major airports.

Virgin Australia says, “We are proud to lead the delivery of sustainable aviation fuel into the fuel infrastructure at Brisbane Airport and that Virgin Australia is leading the way in the production and use of sustainable aviation fuel in Australia. We recognise that there is a great opportunity to develop affordable sustainable fuels industry in Australia which will help to reduce emissions and drive investment and jobs growth in Australia.”

Typhoon isolates Kansai Airport

Airports built on artificial islands are a good idea in principle, saving space in heavily populated areas and providing efficient transport options—that is unless an unforeseen calamity encroaches on the best-laid plans.

Such was the case in Japan on 5 September when Typhoon Jebi struck the island of Honshu and brought with it the usual destructive features witnessed in the latest northern hemisphere summer—strong and dangerous winds creating destructive missiles out of building materials and shards of glass, abnormally high ocean waves crashing over seawalls and torrential rain and flooding.

Typhoon isolates Kansai Airport

Visitors and Massey’s flight instructors have landed at FoxPine.

Massey University School of Aviation welcomed the largest number of visitors to date to its annual Aviation Open Day on 15 September. The event was hosted in Massey’s brand new Flight Operations Centre, stage one of Massey’s Aviation Centre building project.

Prospective students and families from all over New Zealand attended the event in Palmerston North and were shown around the centre, enabling them to experience first-hand the school’s aviation facilities and academic aviation programmes.

The expansion to hangar, classroom and operations centre facilities has also seen the installation of the high-tech Diamond DA-42 L680 simulator which will enhance the training capacity for Massey’s Bachelor of Aviation students and complements Massey’s current suite of simulation and flight training devices.

More than 120 prospective students toured the greatly expanded hangar facilities hosted by Fieldair. In addition, half of them were able to experience a trial flight in one of Massey’s Diamond DA 40 aircraft on a beautiful Manawatu day for flying.

Presentations were given by representatives from Jetstar NZ, Airways NZ, Palme

Quest for quiet engines

As engine and airframe makers try to meet growing demands for quieter aircraft operations, Boeing and NASA have tested an improved engine nacelle liner that offers lower noise emissions as well as reduced drag.

Initial results of the tests, completed in August on Boeing’s second 737-800 prototype, are yet to be fully analysed but already indicate better-than-expected acoustic and aerodynamic performance, say the researchers.

The technology could be applicable to current airliners such as the B737 but also might help reduce noise in next-generation short-drum engines in the early stages of development for future aircraft such as Boeing’s proposed new mid-market airliner.

Shorter ducts are expected to mitigate the weight and drag of larger high bypass-ratio engines but have relatively less surface area inside the inlet available for sound-absorption treatment. The new low-drag acoustic liner (LDAL) design, evaluated on the B777’s starboard (no 2) CFM Leap-1B engine, could help offset this disadvantage while simultaneously minimising the inevitable drag impact of the special noise-reducing liners featured on all modern commercial turbofans.

Developed and tested by NASA over the past seven years, the multi-degree-of-freedom (MDOF) liner represents one of several noise-reduction concepts studied under the agency’s Advanced Air Transport Technology (AATT) project. Aimed at technology which, compared to a 737-800 with CFM56-7B engines, could reduce cumulative noise margins by up to 52dB, the liner is one of several elements under evaluation by the AATT Aircraft Noise Reduction sub-project.

Other noise-reduction concepts include designs for quieter undercarriages, slats and flaps as well as rotor and fan acoustic casing treatments.
Boeing revealed its B777X-9 to an invited media contingent at its Everett plant in Washington on 5 September. The green airframe, devoid of engines, avionics and tailplane, will be used to test structural strength and accuracy of the new design, which will include its wings, fuselage and landing gear struts and bogies.

Boeing has retained a duralumin fuselage, but the wings are of CFRP, and when folded down to full span measure a staggering 235ft 5in. The hinged wingtips, locked into position for flight, contribute an extra 11ft each side to the overall wingspan and are projected to deliver a 12 percent fuel saving benefit. It’s claimed the wingtips can flex as much as 26ft away from their normal position and still maintain structural integrity.

A purpose-built autoclave of enormous dimensions was required to be designed and constructed to manufacture the new-generation wings, the innovative features of which are expected to deliver the ranges and capacities that Boeing claims for both variants: the B777X-9 is projected to carry 350–425 passengers (depending on seating configuration) for a distance of 7550nm while its smaller sibling, the B777X-8, will carry 350–375 passengers the greater distance of 8750nm.

The B777X-9 is scheduled to begin flight testing next year, with first deliveries in 2020, while the B777X-8 is expected to be in service two years later. Airline giants such as Emirates, Nippon and Lufthansa are set to be the first customers, ordering substantial numbers of the two variants, with both to be powered by the GE7X engine.

As part of the collaboration with Alibaba, many South Island tourism operators are already using Alipay, China’s largest mobile and online payment platform which is operated by Ant Financial, a related company of Alibaba. Alipay allows Chinese visitors to pay for services in the way they are most familiar with and prefer to use at home.

The launch builds on an existing collaboration which started about 18 months ago between Alibaba and Christchurch Airport. “Our presence on Fliggy will allow South Island tourism operators to better target Chinese tourists and provide a better service to them, by giving them more of what they want, based on their use of the Fliggy platform,” says Mr Watson.

The work is being done in association with the South Island’s 13 regional tourism organisations under the SOUTH programme which is now working with more than 800 businesses, representing more than 4700 locations around New Zealand.

Christchurch Airport has launched a South Island Travel Store on Fliggy, a leading Chinese travel service platform and part of the Alibaba digital ecosystem, in a move designed to promote regional tourism and economic development.

Chinese travellers can plan and book their travel before they leave home or while they are touring through the South Island. The platform allows them to obtain information in Chinese about South Island visitor experiences and promotes bundles of experiences.

Fliggy has access to the more than 600m monthly active mobile users on Alibaba’s China retail marketplaces.

“This puts our South Island attractions up among many of the world’s top destinations, helping Chinese travellers find us, book where to stay and book the fun they want to have while they’re here,” says Justin Watson, Christchurch Airport chief aeronautical and commercial officer.
Foiled at Farnborough: The disappointing public airshow days

From the early days of aviation in the UK to today, the airfield at Farnborough in Hampshire has been a centre of research and innovation, as ably covered by Peter Cooper in last month’s NZ Aviation News (page 16) where he details the trade days and exhibitions from the recent airshow as well as briefly examining the site’s past.

From my point of view as an attendee at the public display days, however, Peter’s closing sentiment of “bring on 2020!” is one I cannot share. This is no criticism of Peter’s coverage. A knowledgeable and insightful journalist is Mr Cooper and his excellent coverage does the trade show justice, but for those who have been to previous Farnboroughs the public days were a big disappointment. I had been warned about this. The people I was staying with were former aviation industry folk who had stopped going to the public days at Farnborough because the show had become bland and uninteresting.

This intrigued me, however, as I wondered how one of the world’s premier aviation showcases could change so much. I had been before, both during trade and public days, and had thoroughly enjoyed the spectacle. Nevertheless, on the morning of the show I hoped I had jumped the queue and blatted down the M25 from East Sussex to Hampshire and the airshow. On arriving in the vicinity of the airfield around 8am, I was expecting traffic, much like the last Farnborough.

As acts were shuffled time went by and there were gaps, big ones, in between each display. Without the Marini Business Jets flying for Team U/S, the wait for a replacement took almost three-quarters of an hour and then the Red Bull air racing team which looked so very far away from the trade enclosures was not going to appear at all. After the second time within an hour, this display director left the podium and I took the opportunity to find food.

Vintage aircraft such as the Blenheim and Spitfire duo, although fascinating to birdwatch enthusiasts, were rather lost in the big pattern at Farnborough, and it just wasn’t worth bringing the camera to bear. In an attempt such as this at Shuttleworth events at Old Warden, The Great War Display Team is thrilling with its Triplane reenactments and vintage sounds about the area. At Farnborough they may as well have been over the Western Front! They looked sorely misplaced.

For the second time at a Harrier display, a big drawcard since the type had retired from British service, the Spanish navy Harrier was dragged from the static display area to take up residence for the aviation showcases could change so much. Nevertheless, on the morning of the show I had made the decision that I was going to leave Farnborough out in the cold. A Boeing 727 scheduled for later.

By this time I had made the decision that I was going to leave Farnborough out in the cold. A Boeing 727? An odd choice, in my opinion. The Harrier in particular—the “boom” factor made for a tiresome afternoon needlessly.

From my point of view as an attendee at the airfield, it was just another airshow. As acts were shuffled time went by and there were gaps, big ones, in between each display. Without the Marini Business Jets flying for Team U/S, the wait for a replacement took almost three-quarters of an hour and then the Red Bull air racing team which looked so very far away from the trade enclosures was not going to appear at all. After the second time within an hour, this display director left the podium and I took the opportunity to find food.

The Red Arrows, a perpetual crowd favourite early morning to avoid the inevitable traffic jams which made it impossible to see something for some time afterwards. The big shiny Airshow! It was all a bit of a disappointment. None of the latest combat jets were on display. Where were the latest combat jets? The advanced airliners?

Past rows of one-percenter business jets from Bombardier, Dassault and Gulfstream were all closed with only a handful of airframes here and there from the industry giants. Those open for public perusal were Universities offering child-friendly exhibits. None of the big players bothered allowing the public to grace their neat looking enclosures.

In the hardware display area outside Italian conglomerate Leonardo was out in force with airframes such as a special mission ATR-72 and examples of the Alenia Aermacchi M346 Master two-jet trainer. Agusta Westland’s range of helicopters brightened up what was a military grey palette.

As with previous shows, warbirds and vintage aircraft were out in numbers, providing contrast to the pointy combat machines in the trade stands, but photography was awkward with the aircraft being surrounded by metal barriers and advertising flags fluttering in the gentle breeze, providing an unwelcome backdrop to a potential photo opportunity.

I joined hosts of photographers in playing the barriers, flags and ground service equipment avoidance game while composing shots. A Hawk Typhoon rebuild project garnered much attention, with a fuselage section and Napier Sabre engine case on show.

Within the brightly presented and busy airshow brochure there was all one needed to know about what to see and do at Farnborough, but somewhat ominously, the flying display programmes were vague and (probably) deliberately ambiguous as to what was going to appear at what time.

Attendees were referred to plasma display boards offering video footage of what was happening inside and display times and other information. These were dotted around the site, providing an instant reference point for information—smart idea.

The Sunday airshow programme offered a mix of participants which, given the variety of aircraft on static display, paled in comparison. Where were the latest combat jets? The advanced airframes?

A B737? An odd choice, in my opinion. The Harrier display was as exciting as it had been the many times I had seen it in the past. The Harrier finished; I had had enough.

With aircraft blighted by mechanical failure, the display sequence was changing by the minute. This is something that happens at airshows and was not in itself disappoint- ing, but how the display directors handled these last minute hiccups left much to be desired.
The return of winter

It happens every year, but that doesn't seem to help—just when everybody's starting to think spring might actually be going to put in an appearance, September brings a cold snap. Last month's inevitable occurrence brought out the snow-clearing machinery and cheers from the Otago snow fields, but not before airline disruptions at Queenstown brought movements to a halt.

We offer a selection of late-winter images while sparing a thought for those who had to go out in this weather to clear the snow—and for the anonymous photographers.

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A Hawker Siddeley Trident in flight. Fog was a major problem at UK airports but the Trident offered a solution, making the first genuine blind landing in November 1965.

A lifetime in aviation
by Nicholas McIndoe

R on Tannock has been around aviation all his life. His father served with the RAF during WWII and then on leave would bring home models of Lancaster and Whitley bombers, carved from wood during the long dark evenings in such places as Reykjavik in Ireland and Limavady in Northern Ireland. Ron spent many hours talking aeroplanes and later building and flying model aeroplanes with him.

Another strong influence was the close proximity of Prestwick Airport to where he grew up, southwest of Glasgow, Scotland. Born in 1937, Ron was the right age to appreciate the postwar USAAF and RCAF traffic from across the Atlantic to and from Europe.

The big British, American and European carriers used Prestwick as a refuelling stop from Europe to the USA so the latest hardware, military and civil, was always on show. The year-round naturally fog-free nature of Prestwick provided a haven for aircraft when Western Europe’s airports were clipped in by low visibility—a common occurrence before the Clean Air Act. To see four-engine Constellations, DC-7s, Stratocruisers and of course the Bagdad Express during the postwar period was a great thrill. One day the cockpit went into an “autobahn” mode, like theirs did, and Ron would feel himself getting into the fast lane. “The glamour of flying operations people have clear expectations of managing ground staff and the cabin crew. I held this position from 1971 to 1974—the chief hostess (you wouldn’t get away with using that term nowadays) was in charge of training. I was in charge of making sure it happened.

“Moving around the organisation provided the opportunity to learn what expectations the next person in the delivery process of the travel experience has—flight operations people have clear expectations of engineering and maintenance as do people in in-flight services and vice versa. Performance improves immensely when everyone understands what is expected.”

Ron also spent time as manufacturing manager back in engineering. “I was in charge of trying to get the company more outside work—for example NAC built wings for the CT-4 Airtrainer.”

And finally tech services and quality manager. “I was never really comfortable with that combination of functions; it wasn’t necessarily the right thing to do.”

When NAC was merged with Air New Zealand, Ron was very forward-thinking. He would move young people from department to department if they had the right attitude. Ron was offered a solution, making the first genuine blind landing in November 1965.

After a SAFE Air Argory suffered an uncontrolled flight on 20th April 1982, Ron joined the de Havilland Division of Hawker Siddeley Aviation at Hatfield as a flight test engineer—a great job.

The manufacturer had two aircraft undergoing certification flight testing at the time—the Hawker Siddeley Trident, the second-generation jet transport for British European Airways, and the Hawker Siddeley 125, a successful twin-engine business jet.

It was a different world from Scottish Aviation—flight testing at MoT in a Trident from Hatfield to the north of Scotland and back in no time at all was a different game from “paddling around the Firth of Clyde in a Twin Pioneer” at 110kt. The work was fascinating and Ron was made to feel very welcome by the team at de Havilland’s de- Havilland approach in finding a solution through disciplined problem solving was to stay with Ron right through his career.

The 125 was not without its own engine problems. The Bristol Siddeley Viper was temperamental when being run at altitude, and it took many test flight hours for the powerplant designers to set the correct fuel/air ratio.

The job was interesting and so were the people. Ron well remembers the chief test pilot, John “Cat’s Eyes” Cunningham, a WWII night fighter ace. His nickname was coined by the British press, along with rumours of his eating plenty of carrots, to explain his successes and avoid commuting the exact position of airborne radar to the enemy. By the end of the war he was a group captain with 20 kills, three probables and six damaged. Rejoining de Havilland as a test pilot postwar, he flew the world’s first jet airliner, the Hawker Siddeley Comet. He died in 2002. Cunningham didn’t like the nickname, and Ron remembers enquiring about it when
Ron Tannock at home in Blenheim, looking relaxed in retirement. He spent an unbeatable 45 years in aviation, from 1965 in New Zealand, holding a number of positions at NAC and, following the merger, with the national carrier until 1983. After managing SAFE Air he rejoined Air New Zealand in his “dream job” in 1990 and stayed for another 10 years.

Zealand in 1978, Ron was appointed to the position of aircraft maintenance manager (DC-8 and DC-10 airframe maintenance), followed by chief engineer (maintenance, overhaul and line operations of all international aircraft including the introduction of the B767). “At the time of the merger they moved me to Auckland and Jim McCrea to Christchurch—they swapped us around,” laughs Ron.

“I was chief engineer when Erebus happened. I remember it clearly and with great sadness.” He was the first witness from Air New Zealand at the subsequent Royal Commission of Inquiry.

“The 747 was a good aeroplane. We were given a very short time for its introduction, less than a year, and then three aircraft in three weeks. Early in the piece the Rolls-Royce RB211 engines were having bearing issues—they would vibrate and then activate the engine fire system.

“Engineering and flight operations worked very closely, meeting with Boeing and Rolls-Royce regularly, in an effort to understand the problem and listen to the proposed operational and technical fixes and keep maintenance people and flight crew in the loop.”

The problem was sorted but not before other issues arose—it was hard for some Air New Zealand Mk 1 people to accept the switch from Douglas to Boeing. “Couple that with being the only domestic guy at the international maintenance base and then overlay a whole series of industrial relations issues—they would vibrate and then activate the engine fire system.

“Times were changing and the word “Rogernomics” entered the vocabulary. This meant a change of rules and regulations in many different areas of commerce. Transport did not escape and, in an effort to promote competition, the protection afforded air and rail transport was stripped away. Road transport was released from its distance limiting rules and the air and rail monopolies were told to become corporate in their approach to life.

SAFE Air’s three main cargo customers—New Zealand Rail, New Zealand Post and Air New Zealand—started to look seriously at their operating costs and how best to reduce them. In addition to Rogernomics, rail had recovered cost to SAFE Air. NZ Post could see the writing on the wall and, while it still wanted an air service, it did not want to be SAFE Air’s only customer thus paying all the overheads.

Eventually, one by one the customers left as less expensive ways were found to meet their needs. SAFE Air ceased flying and became a maintenance facility—the engineers got more work, many of their pilots went to Air Nelson and Eagle Air which were expanding, and Ron landed his “dream job” as general manager operations international, back with Air New Zealand in Auckland.

He spent the last 10 years of his career in this role and was responsible for flight operations, inflight services, passenger services, load control, network logistics (crew, aircraft and airport control and coordination over the network) and coordination of technical and service delivery activities with Star Alliance partners.

“I really enjoyed my 10 years in Auckland. There were challenges such as those with Star Alliance—but how were we actually going to do it and make it all work? The marketing people had made all these promises and then handed a ‘hospital pass’ to operations!

“One highlight was the planning involved in organising to carry Her Majesty The Queen and her entourage to New Zealand for CHOGM 1995. It was the first time she had ever flown commercially.”

Ron retired in 2000, before the Air NZ/Ansett Australia business. He has since lived in Blenheim and hived off a chartering engineer and was a fellow of the RAeS and a past president of the RAeS New Zealand Division. He is also a former deputy chairman of the Aviation, Tourism and Travel Training Organisation (ATTTO) and a former member and chairman of the CAA and Avsec for four years.

In 1979 he helped establish the RAeS Geoffrey Roberts Award and a Meritorious Award in 2014. In what he describes as a “great honour for an engineer”, Ron received the Guild of Air Pilots and Navigators Jean Batten Memorial Trophy in 2007.

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Craig Emeny's connection started with a Mount Hutt Aviation job in January 1982, flying Cessna 185 ZK-BEZ to Chatham Island to begin transporting live crayfish for the Chatham Island Packing Company and to check the viability of transporting live crayfish between Pitt and Chatham Islands, as well as other general aerial work.

Pitt Island is named after John Pitt, First Lord of the Admiralty at the time, 2nd Earl of Chatham and older brother of William Pitt the Younger. The original Moriori name for Pitt Island is Rangiotaia.

The air operation continued with Cessna 180K ZK-ESH, based at an airstrip at Owenga near Chatham's southeastern corner, from July 1982 to January 1984 when it was sold to the packing company. The whole operation folded a short time later and Craig decided to go it alone. In September 1984 he bought Cessna 337F ZK-TAI to transport the crayfish and freight, at first operating with Napier-based East Air's licence, and in March 1985 the airline gained its own air taxi and charter licence and launched Air Chathams.

Two years later ZK-TAI was out of the air for a period after a nosewheel collapse on Pitt Island's Waipaia strip. Within seven days Craig had another Cessna 337 lined up, this time P337G Super Skymaster II ZK-TSH, a pressurised turbocharged model...

... and windsocks. The current C206 ZK-KAI is the fourth light aircraft on the Pitt service. C337s Pitt Island's Waipaia strip can be hard on aeroplanes...
The days of the Argosy service—Bob Guard (left) and Bill Ashley.

with a Robertson STOL L1011 previously owned by racing driver Chris Amon.

and one-passenger airliner, or a mix of both. As a combi Convair with large rear freight
tones of freight and seven passengers. Earlier that year Air Chathams had rented a
the request of the Tongan government, Air

and safe airline transporting both freight and

throughout an hour or so, but with insufficient
to and from mainland New Zealand to the Chatham Islands, plus its mainland
door and nosed into steep glides. It can easily be
whether the Chatham Islanders, it has already enjoyed local support.

run on 8 September 1989. The Chatham Islands hospital in Waitangi,

many months and the airline was able to

and safe airline transporting both freight and

But the Waipaua strip again took its toll

and safe airline transporting both freight and

1996 the CAA grounded its operations after

was never recovered and the cause of the

with a Robertson STOL kit previously owned

their lifeline—a flying general store, as

of freight, returning the next day with five

and safe airline transporting both freight and

Wanganui on 1 August 1999. With the introduction of Chinese (PRC) aid

crew to get out a Mayday call and glide closer to shore before ditching in Pitt Strait, whereupon the aircraft sank

Many of the wedding guests, plus our

and the cause of the engine failure was not determined, but now

and saw the Pitt Islanders.

The Waipaua airstrip is 25nm from the

The Queen Bee, ZK-CIB, arrived finished

Peter Clark

years old and has spent a lot of time

and approach the firm, making it clear that

and fee before, possibly, embarking on

and cannot be tainted by the prospect

A3-AWP, originally a C-47B-30 with the RNZF and subsequently

with a long New Zealand history as ZK-AWP with NAC and later aircraft to support Chathams

lately throughout an hour or so, but with insufficient

ding the fuselage, a write-off. Its replacement,

Pitt Island crayfish, then heading back

ings for the benefit of Chatham Islanders,

in Taitoku Airport but with a large

to the Chatham Islands, plus its mainland

and saw the Pitt Islanders.

The other island in the area of Chatham was at Taitoku Airport but with a large

and the air force. Craig’s brother Brett’s Helicopter Services is based in Taranaki and

But the Waipaua strip again took its toll

and safe airline transporting both freight and

40 kg of gear, were flown to an alternative landing strip
come into the situation, you need

the level of comfort and capability, with pas-

which were on board but with insufficient

and his four passengers safely evacuated before swimming an hour

With the introduction of Chinese (PRC) aid

but with insufficient

to the Chatham Islands, plus its mainland

and saw the Pitt Islanders.

and the air force. Craig’s brother Brett’s Helicopter Services is based in Taranaki and

inland–Christchurch freight service, support-

with a Robertson STOL L1011 previously owned by racing driver Chris Amon.

which were on board but with insufficient

and approach the firm, making it clear that

With the introduction of Chinese (PRC) aid

the community to the

Case management

When a client comes into the situation, you need

car. A2008 was another Cessna U206G, ZK-KAI, delivered to the Chathams on 1 August 1999.

The Queen Bee, ZK-CIB, arrived finished

the level of comfort and capability, with pas-

and approach the firm, making it clear that

and approach the firm, making it clear that

although Air New Zealand started with Auckland to Whakatane on 29 April 2015 with

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In praise of RGA

by Neville Stirling

May this year I investigated building my own microlight so I visited the local aero club. I came across two Pioneer microlights the club owned and thought what a nice looking aeroplane, and I was put in touch with Logan from Alpi Aviation. He had a demonstrator for sale, a 300 Pioneer Kite with 100hr on it. Off I went to Rangiora for a flight.

I also had a flight test in another type of microlight. I liked that Logan encouraged me to try different microlights before deciding which one to invest in. I went back to Logan and purchased ZK-SGM, staying with him for two weeks while learning to fly. I flew solo the day before I left for home.

In between flying I worked with him in his immaculate workshop, and he taught me how to maintain my microlight. He works to high standards and it was a pleasure working with him.

Logan and Dave Lefee then fitted and wired up a new constant speed propeller, autopilot and artificial horizon (AH). It was delivered to Manapouri for me shining like a brand-new aeroplane and even the tyres were shiny black.

Fixing Pioneers is not only Logan’s job...
MICROLIGHTS & LSAS

Our microlight
When I was first training in the Tomahawk I found many older pilots who reminisced over their lessons in a “150” and what a great grounding it was. The Cesna 150 came out before I was born and was a high-wing aeroplane with a 100hp four-cylinder horizontally opposed engine which eventually was developed to achieve 1800hr TBO or 12 years, plus tricycle gear, manual flaps and a cruise of about 80kt and stall at 42kt. The only difference for the club was that we bought the 80hp engine which had more than enough power.

So clearly this is the modern version of a “150”—so why were some of my old friends so against it? Was it just that they had not realised, like I had, that microlights are modern now?

“Microlights are new and the designers haven’t learnt how to make a safe aircraft yet!” Luigi Pascale, like many, started with models as a child, but his first commercial aircraft was designed in 1948. He has a Masters in Engineering and founded Partenavia in 1957. They produced 37 designs and then in 1986 he founded Tecnam which so far has produced over 5000 aircraft.

So maybe he does know what he is doing! The design is so good that there is one problem: try teaching wing drop stalls in a Tecnam. But I have to admit that unless the instructor cheats and kicks a bit of rudder!

Those Rotax engines are never reliable
I lived for a time in Germany, and occasionally the Germans asked, “How do Kiwis see Germans?” The answer was “The same way you see Austrians,” that is “pretty straight, fancy engineers who try too hard”.

Rotax started producing engines in 1920 (Continental 1929, Lycoming 1945) and has designed over 250 engine models and built over 7 million engines (Lycoming 1950,000). Rotax recognised the need for a modern aircraft engine and started producing them in 1973. Like Lycoming and Continental before them, they started with a conservative TBO and built up to 2000hr.

The differences could fill a volume. We do not drive in a car with a 1920s engine with a gearbox, so against it? Was it just that they had not realised, like I had, that microlights are modern now?

The upshot is, to quote an ex-CAA LAME: “the difference is that Rotaxes ACTUALLY reach TBO”.

Now you cannot change chemistry or the Guinness production line, but also his passion. I am very pleased with my purchase and would not hesitate to buy another one. It is a great little microlight, but the best choice I could have made, and I am currently enjoying doing my solo flying hours.

The Rangiora hangar contains an eclectic mix with the emphasis firmly on the lighter side.

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Tony Unwin has been flying autogyros for many years, and much of the recent increase in autogyro flying in New Zealand can be attributed to him. The practical autogyro concept has been around for almost a century, since Spanish civil engineer, pilot and aeronautical engineer Juan de la Cierva flew his prototype in 1923. Unlike a helicopter—and Tony points out that the correct name for these machines is autogyro or gyroplane and not gyrocopter—the autogyro relies on auto-rotating rotor blades to produce lift while the forward thrust is produced by an engine driving a propeller, usually in pusher configuration.

The rotor blades reach a stable rotation speed in flight, and with their much narrower chord and travelling at a much higher speed through the air than a fixed aircraft wing, they ride any turbulence more smoothly, in the same way as a jet aircraft flies more smoothly through turbulence than a lightweight propeller aeroplane will. The autogyro’s ability to auto-rotate down to a very short landing if power is lost means a case can be made that it is safer than a fixed wing aeroplane. The other controls of an autogyro are conventional, with the rotor being tilted forward to increase speed and to either side to produce turns, and the rudder operates the same as in a fixed wing aircraft.

Tony Unwin began his flying career in England, learning to fly on Tiger Moths and obtaining his CPL in 1972. He flew for an air taxi company and then progressed to B737s, TriStars and B747s with Saudia. Back in the UK, he flew for holiday air charter operators and also started an autogyro training school which he ran for 10 years, retiring in 2000 and coming with his wife to New Zealand in 2005.

The following year he formed Gyrate NZ at Tauranga in 2006 and became the New Zealand agent for the German AutoGyro Europe range of machines which includes the open-cockpit tandem MTO and the enclosed tandem Calidus Fern and the side-by-side Cavalon. Gyrate NZ imported around 25 of these machines during 10 years and these now make up nearly a quarter of New Zealand’s autogyro fleet.

In 2015 the AutoGyro agency transferred to others, although Gyrate NZ still continues to operate as a gyro training school, also under new management. So Tony looked around for a new European autogyro and came up with the Kalithèa, manufactured by Niki Rotors Aviation, based in Pravets, Bulgaria. Kalithèa means “best view” in Greek and the Kalithèa gyro has huge fully glazed side doors which lift up for entry. This is made possible by the strength of carbon fibre, used for the entire fuselage pod.

The doors can be removed for flight, although in my opinion you wouldn’t need to as the view is unobstructed. The rear seat is also elevated, so even the forward view from there is good. Tony’s Kalithèa is fitted with a 100hp Rotax 912ULS engine, and its six-blade e-prop has been measured to give an 18 percent increase in thrust over the standard propeller, effectively giving Rotax 914 performance with 912 power. Although the e-prop is around twice as expensive as the standard propeller, it is a cheaper way of obtaining the effect of the extra horsepower of the 914 (but not of course at higher altitudes). The main rotors are from Trendak in Poland, 8.5m in diameter with flapping hinges and mounted on a foldable mast. The empty weight is around 285kg and in New Zealand
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Microlights & LSAs

the MAUW is 544kg. With mogas fuel capacity of 70lt and using around 20lt/hr at 75kt cruise speed, it has a practical cross-country range of around 250nm, and Tony flew his Kallithea from Tauranga to Parakai for our demonstration in 1hr 45min with two up.

In this country autogiros are flown on a microlight licence with an autogyro rating, and as I’m a low time microlight pilot it was time to go flying. Tony is a highly experienced autogyro instructor and took me through a thorough pre-flight inspection and start-up check list. Then it was time to start the Rotax, which needs some time to come up to temperatures and pressures.

When all was in the green we started taxiing which was very easy with the steerable nosewheel and ground brakes, and of course the forward and all-round visibility is great—so far so good.

But when we got to the end of the runway the particular requirements of the autogyro must be considered. If there is a crosswind we must turn into it and then begin the pre-rotation of the rotor blades, accomplished with a drive from the engine. With the stick forward, Tony pre-rotates the rotors up to around 100rpm.

Then the takeoff run is started, and as the forward speed builds up so does the rotor rpm until the nosewheel lifts off and we are flying. You then have to let the speed build up, flying along the runway without climbing until 60kt is reached, and then climb out as normal. When flying the rotor speed stabilises at around 350rpm and you don’t have to think about it as it takes care of itself. The rotor speed depends on the weight of the gyro and speeds up in turns when more G is pulled.

In the air the gyro flies in a similar manner to a fixed wing microlight with stick and rudder, but I found the lack of forward reference made flying straight and level a bit challenging and I had to refer to the VSI. There is also a fixed string on the windscreen, glider fashion, which helped to balance turns.

Tony demonstrated how the gyro can be made to descend at a high rate while still being in full control, a definite safety feature because in the event of an engine failure it can be put down in a very small area. A rule of thumb for gyros is that they can take off from a rugby field and land on a tennis court.

We did several circuits, including one with me flying from the front seat. I did manage a passable touchdown (with help from the rear seat), but when I was down I forgot about the still-spinning rotor, one big point of difference from flying a fixed wing microlight.

In fact the most potentially dangerous parts of an autogyro flight are on and near the ground—it must be flown until both the machine and the rotor have stopped.

So what are my conclusions from my introduction to autogyro flight? I enjoyed it. I reckon it is a great way to get around the country with spectacular views, especially from the Kallithea with its huge amount of glazing.

Tony Unwin is one of New Zealand’s most experienced autogyro pilots and instructors.

Tony Unwin is one of New Zealand’s most experienced autogyro pilots and instructors.
AeroJones is a Taiwan-based company founded in 2013 in Central Taiwan Science Park. While management and headquarters are in Taiwan, production is in Xiamen, China, with design and engineering support based in Berlin.

Take the two-seat CTLS (composite technology light sport) aircraft, for example—it is built using strong, lightweight modern materials with 8.5m span and 6.5m length, the CTLS includes modern navigation and safety equipment. Its high wing and spacious cabin afford a good view, and with its 100hp Rotax 912ULS engine, cruise is 130kt and VSO 160kt.

AeroJones’ standard CTLS avionics package includes 7in Dynon panels and autopilot. Optional avionics equipment includes Dynon 10ixin dual panels and touch panels. Advanced panels in the CTLSi give LSA pilots large glass panel displays available as well as buyers.

Musings from a new member of the microlight fraternity

After years of secretly harbouring the desire to fly, in mid-2017 the decision was made. Wanting my own aircraft eventually made microlighting the way to go in my mind, with the compliance/training requirements being reasonable and the aircraft more affordable.

I started training in the local club aero-plane, an Alpi Pioneer 200, which confirmed the desire was real and strong.

Training and paying to train in an aircraft that was not going to be the end game didn’t appeal for too long. I really wanted to gain my experience building hours in an aircraft that I would be flying exclusively. So started the hunt for the right machine.

I checked them all out and, having started in an Alpi, probably gave them the inside running. But from my research, the number of machines in NZ, their reliability and long-term local servicing (local for me anyway) made the decision reasonably straightforward.

After identifying two Alpis on the market with potential, I contacted Logan McLean at Alpi Aviation NZ to try and extract whatever information he was prepared to divulge on them. I got an honest, straightforward assessment of the merits of each of them and the things to be on the lookout for pre-purchase. A purchase was duly made.

As a new pilot in the consolidation phase after going solo, I have had the odd not-so-textbook touchdown. My aircraft suffered a collapsed nosewheel and damaged propeller (not to mention dented pride) as a result of one of these. Expecting to be out of action for a considerable number of weeks waiting for parts and the repairs to be carried out, I was very pleasantly surprised to arrive back from a preplanned holiday to find I was ready to go again in less than a month.

It seemed to me that they knew getting me back airborne as soon as possible was the best outcome and they set about making that happen.
Gyrocopter flying in New Zealand has been on the increase in recent years, with almost 80 machines now on the register in the gyroplane class. Many of these are modern European designs with Rotax engines giving a good level of reliability.

One of those European manufacturers is Magni Gyro from Italy which produces a range of tandem and side-by-side models, with 10 currently registered in New Zealand. And one of those Magnis is Peter Avery’s tandem M 16, ZK-RPA.

Peter Avery is a 30,000hr helicopter pilot who flies offshore and returns home to Taupo after each stint. He purchased his Magni in September 2016 from the local agent, Leo Levine. Peter says he has 300hr up in his gyrocopter and is really loving it, and he enjoys the gyro safety features.

He learned to fly a gyro with Rusty Russell at Whangarei. Rusty is a gyro guru and possibly the most active gyrocopter pilot in the country.

Peter purchased his gyro with adventure in mind. It came with the standard tyres but he has fitted 26in Alaskan bush tyres and a larger front wheel and suspension assembly. These tyres are completely self-contained and can be run as low as 6psi.

The complete modification added 16kg to the empty weight but has little effect on the cruise speed. Peter says you have to be careful when adding extra weight low down on a gyrocopter as it lowers the centre of mass further below the thrust line, but his modification works well and he now has more than 200hr in the new configuration. The added weight is more than compensated for by the improved rough and soft ground capabilities.

There is a reason for all this—Peter uses his gyro for flying in the back country of Westland and Fiordland, landing on riverbeds, beaches and other remote areas. He has an airstrip at Jackson Bay at the road end south of Haast and trailers his Magni from Taupo about every three months.

His enclosed trailer does the job well, and he has a set of rotor blades at each end. Being able to trailer his gyro means that he is independent of the weather for cross-country travel, and he can then enjoy flying on lovely days when he is at Jackson Bay. (Another plus for a gyrocopter is cheaper hangarage or even no hangarage if you have a good weathertight trailer).

Peter says he’s well prepared and has a full set of heated flying gear, an immersion suit, a life raft and a satellite phone as well as two PLBs—all good equipment to have for flying in the deep south in an open cockpit.

He usually flies his Magni solo and can be airborne in some 60m at around 30kt after pre-rotating the rotor to 250rpm before starting his takeoff roll, and climbs out at 55kt. An auxiliary tank gives him an endurance of about six hours at his cruise speed of 73kt.

A gyrocopter can land in a much shorter distance than its takeoff roll, so the takeoff distance dictates the landing area. Peter uses his big tyres to land on gravel riverbeds and river flats, with a DoC concession for landing on South Westland riverbeds. He also carries out beach landings below the high tide level all around the Fiordland coast, and he flies as far south as Preservation Inlet which is about as remote as it’s possible to get in this country.

Flying a gyrocopter over the spectacular scenery of South Westland and Fiordland must be about as good as it gets!
F or over a decade RNZAF helicopter crews and instructors have, when the opportunity presented itself, visited the Australian army’s helicopter training facility at Oakey, Queensland, to observe how the Australians train their helicopter crews. In more recent times the Australians have adopted simulators to provide basic and enhanced training. Two of their simulators emulate the S70A-9 Blackhawk and the NH90 helicopters to the RNZAF and required some very smart integration software as part of the A109 and future NH90 programmes. CATS was purchased in late December 2016 as part of the RNZAF’s requirements. Funded through Defence’s Capital Programme Minor in FY2016/2017, CATS was identified as the best solution to meet the RNZAF’s requirements. The hardware and software were delivered to Oakey in June 2017 and installed within the building housing the A109 simulator. Since then instructors and students have been using this simulator to provide loadmaster training in conjunction with real-time flying on both the A109 and the NH90.

The simulator cabin built by Australian company Virtual Simulator Systems (VSS) from recycled plastic bottles looks somewhat skeletal, with the main cabin area approximately the size of the NH90 forward cabin. The frame can be configured as a combination of the A109 interior (albeit with the floor area a little larger than the real machine) and the NH90 right-hand side of the cabin, including the winch.

Using new technology and representing the A109 is a 3D printed MAG86 machine gun on the left-hand side of the cabin, while the right-hand side includes winch operating hand-held remotes, one each for both the A109 and NH90, again using 3D printing technology. A simulated winch system is mounted in the right-hand door with a continuous looped cable replicating downward and upward movements of the winch. The simulator software was developed by Titan Vanguard.

The most impressive simulation experience is provided by the use of virtual reality headsets (VRH) for the two loadmaster trainees. Once it’s donned and activated, the wearer sees a virtual interior cabin related to whatever type of helicopter is being trained. The virtual exterior views coordinated to the respective viewing position taken by the trainee.

From the instructor’s desk, the advantage of the skeletal frame of the simulator cabin allows the instructor at the console (foreground) to watch all movements but has no effect on the trainee’s viewing virtual reality. The size of the skeletal frame allows the instructor to observe all the trainee’s movements, and in addition a large monitor shows the instructor real-time data being using his VRH. Software developers in the A109 simulator support team have developed algorithms which now in high-fidelity emulates operating areas used for training, along with selected operational sites at Waiouru and other locations.

The simulator can program a helicopter in any flying or on-ground configuration, and this can be run either as a pre-programmed mode or flown live by the instructor using a joystick at the instructor console. The instructor plays the role of a pilot during the missions to emulate crew management operations.

All aspects of helicopter operations can be flown in the simulator, including dry and wet winching, underslung loads, troop carrying embarking and disembarking, and in addition a large monitor shows the instructor real-time data being used, with exterior views coordinated to the respective viewing position taken by the trainee.

The instructor can halt the simulation at any time during a simulated mission.

The electrical wire harness in the right-hand door is also connected to a complete remote winch system, including winch operating hand-held remotes. One each for both the A109 and NH90, again using 3D printing technology. A simulated winch system is mounted in the right-hand door with a continuous looped cable replicating downward and upward movements of the winch. The simulator software was developed by Titan Vanguard.

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Modern aircraft cabin interiors are included in the RNZAF NH90 simulator, and the VH90 exterior is in a large monitor, along with a range of other features.

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Don’t know Errol Martyn well and have met him only once, but I have followed his career with interest and with increasing admiration for his research and writing on New Zealand aviation and New Zealand aviators, all the more impressive in that it is a labour of love and mostly self-funded.

One evening a long time ago I came across several of Errol’s books and decided that he had similar interests to my own and would be interesting to talk to. I phoned, introduced myself and we ended up talking for almost three hours.

Soon afterwards I went to Invercargill and talked with him while inspecting an impressive library of aviation books. Errol had decided to write a series to document every New Zealander killed flying with the RNZAF and Allied Air Services (Fates 1915–1942) was published in 1998. A second volume followed, covering 1943–1998, and the third volume with biographies and appendices was published in 2008.

The trilogy impressed me for three reasons. The first was the mindboggling amount of research that must have been done. The second was their value for future researchers. The third is how interest- ing each entry is. It covers the aircraft, the crew and the circumstances of the loss.

In 2010 Errol’s A passion for flight: New Zealand Aviation Before the Great War, Volume 1, Ideas, first flight attempts and the aeronauts 1868–1909, came out and was followed by two more volumes. The trilogy is a detailed record of aviation in New Zealand from its beginnings down to the outbreak of WWI and is a work that is unlikely to be surpassed.

Last year it occurred to me that Errol’s contribution to aviation history should be recognised by a Royal Honour and got my permission to make submissions in support. When you set out to persuade the Queen to do something, you must cross your Ts and dot your Is.

David Gamby, Adam Classen, Richard Waugh and Max Lambert contributed glowing references. By the time these were added to my submission and a large sample of positive reviews there was a thick wad of paper. I went down to the corner store on the morning the Honours List was published in the Otago Daily Times and there it was: Errol Walter Martyn was awarded the Queen’s Service Medal for services to aviation history. Well done Errol.
Jim Bergman continues his memoirs of a long flying career

At this time Leslie said she was returning to Australia! I flew only the Tasman and Pacific routes which now included Tahiti. Captains I flew with included Ken Chappell, John Wilson, Keith Walsh of NAC and SPANZ days complete the list of captained I had flown with by the end of 1974. With senior captains moving on to the new DC-10 in the next few years I flew with a couple more, including Laurence ex-SPANZ, Derrick Stubbs whom I had sent first solo in the 1960s, Rex Ford and Tony Lynch.

On 28 July 1974 I was assigned as first officer with Bob Harman as captain on a Sydney–Hong Kong–Brisbane flight. I guess Bob must have been the qualified navigator for I had instructed him in NAC and SPANZ. Bob Harman (“the world is my ashtray”), Brian Russell, Alan McGreevy, Peter Brown and Keith Walsh of NAC and SPANZ days complete the list of captains I had flown with by the end of 1974.

With eight different competitions being transferred to Omaka from Woodbourne and return and the actual competitions started after lunch. With the eight different competitions being another Maule, a Cessna 172K Skyhawk, a Piper PA-32 and an Aerotech G.200. With everybody arrived, it was time for a briefing by Rodney Maas, main organiser of the day and Flying NZ Cook Strait Region representative, followed by a local update by David Harman. All the pilots were given a 90 min practice session before the actual competitions started after lunch. The Maule Aventure Club must be thanked as always for allowing, the use of its premises to run the events and making the visiting aero club members very welcome.

At the appointed day of 5 September there rose an initial little doubt as to the event going ahead, but all was fine and clear albeit with a rather strong wind forecast for later in the day. The visiting Wellington Aero Club aircraft started to arrive from 0.00am onwards with three PA-38-120 Tomahawks, one Cessna 172 and one Piper PA-28 Cherokee.

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ellington International Airport spokesman Greg Thomas says, “Following the Supreme Court decision on the rules regarding safety lengths, Wellington Airport was granted a further adjournment by the Environment Court until October 2018 to reapply to the CAA for a determination on the appropriate length of the runway’s safety area.”

The Wellington Airport Corporation (WAC) prepared an updated application to the CAA on the runway end safety area (RESA) length using the Supreme Court guidelines, and a copy was provided to the Environment Court as directed.

Using the guidance, Wellington Airport’s assessment was that a 90m RESA was the most practicable. A possible option to maximise the existing land by squaring off the bank at the northern end of the runway would, however, enable the RESA to be 150–140m with this end of the runway effectively becoming a flat and not requiring a tunnel over Coham Drive.

The assessment shows that a RESA longer than 140m would not be practicable, taking into account a range of criteria including environmental considerations as a result of a longer extension into the coastal marine environment at the southern end of the runway, safety benefits and wider economic parameters.

This statement means Wellington Airport is facing up to the problem of its short runway, a matter of importance if the airport is to retain its international status. For example, long-haul flights are not able to continue to operate with a 90m RESA—the minimum allowed under international aviation law—if the runway were extended. This situation was upset in late 2017 when the Supreme Court instructed the Director of Civil Aviation to review the decision after a challenge to it was filed by the Wellington NZC, said the formal opening on 23 August, “Our air traffic control towers are icons of New Zealand’s aviation industry, and one of our most distinctive.”

Tim Boyle, general manager Air Traffic Services for Airways, told the gathering that Wellington’s air traffic control tower was the second to last conventional tower to be built, and the new Nelson tower (opened two weeks after Wellington’s) was the last. Digital towers will eventually replace the conventional towers, with the first of them to be commissioned at Invercargill in around three years’ time.

“The old [Wellington] tower will be commissioned over the next three months, and then a decision on how to dispose of the site,” said Boyle, who said the building will be “re-purposed”.

Paul EP for Rongotai, said that the significance of the new tower cemented his view that the long-term plans for Wellington Airport were very positive, and that while there were ongoing discussions at local and central government on how to better improve transport access from the city to the airport, the airport company had committed itself to expansion over the next few decades.

“We are very proud of our new building,” said Judy Kirk, Airways board chair, “and I wish to acknowledge Peter Jackson, kaumataua from Taranaki, who blessed the building this morning. It is not often that the chair of the board can publicly offer their thanks to all of those who have contributed to this project.”

“I wish to thank our air traffic controllers for the amazing job they do; they keep our skies safe. I now have much pleasure in declaring our leasing Wellington control tower open.”

The first operations from the new tower began at 6.06am on 26 August.

A new angle on control towers

Three prominent people speaking at the new tower’s official opening are Tim Boyle (left), Airways NZ general manager for Air Traffic Services, Judy Kirk, Airways board chair, and Rongotai MP Paul Eagle.

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On Sunday 2 September more than 400 people packed New Zealand's largest airfield to bid farewell to a moreau for the New Zealand premier screening of Spitfire: The Feature Documentary, which had made its UK premiere, for one night only, in July.

The evening was a fundraiser for Warbirds which suffered a blow with the cancellation of its June Open Day thanks to Auckland's fickle weather.

The evening was a fundraiser for the well-established Wanaka attraction. A trust is now set up to bring the two organisations together.

The centrepiece of the hangar was Doug Brooker's TR 9 MH367 under lights. Before the film started, pilots Doug Brooker, Gavin Trethewey and ve Wilde were issued a pair of Austers instead, to continue flying in support of the army.

After interviewing various personnel at the Wanaka airfield to talk to NASA.

Some time ago this writer was at the Otago region booming and with the massive and unique collection of National Transport and Toy Museum is well set up to look after the waka that brought the first Maori to our shores—they are the modern-day equivalent of these nominated aircraft are returned to the pristine state in which they flew in the British-ruled Arab country. WWII illegal Jewish immigrant boat people landing on the waka that brought the first Maori to our shores—they are the modern-day equivalent of the tropics and valley, their exhausts glowing.

A trust is also seeking to return to New Zealand several other aircraft with strong links to this country—a Boeing 737, a Boeing 747 and a Lockheed Electra, all of which were delivered new to New Zealand and served the travelling public of this country for many years.

The charitable trust's only source of income is from donations, and Mr Brennan hopes that this will grow to the stage where the entire project may be crowd funded. The same time, Paul Brennan will be discussing the matter of the return on behalf of the trust with the Cuban ambassador to New Zealand.

In his RAF's centenary year, Spitfire: The Feature Documentary explores the history of the fighter, arguably the most famous (and beautiful) type ever seen in service—although the Americans claim that for the Mustang. Paul Brennan speaks to the camera in the excavation for the extension to the Wanaka museum.

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John Wall was born in London in 1923 and joined the RAF when he turned 17. Following basic training in England, he was posted to Australia where he flew the P-40 War- mans and Harvards (Texans). Returning to Britain, he flew Miles Masters before being posted to Iraq, Egypt, where he finally achieved his dream of flying fighters—initially Hurricanes and then Spitfires. At first flying Hurricanes as a PR1 pilot, he joined 39 Spitfire) Squadron as part of the Balkans Air Force, based in Italy but regularly crossing the Adriatic Sea to attack German targets in Yugoslavia.
Queenstown debate never ends

by Peter Owens

It would take more than the combined wisdom of Solomon and NASA to find a solution to one of New Zealand’s biggest aviation industry in Central Otago. No matter what someone plans, someone else will negate it and make another plan.

At present the Queenstown Airport Corporation (QAC) believes its plan to develop Queenstown and Wanaka Airports to handle a forecast massive increase in visitors to the resort is the best option for the future. It bases this plan on a current spectacular increase in visitor numbers, international visitors and domestic traffic.

Queenstown Airport chief executive Colin Keel says the airport will reach its maximum numbers in three to four years and so must expand its noise boundaries. To this end, QAC has applied to the Queenstown Lakes District Council for an extension of those noise boundaries, but this is being strongly opposed by the residents of areas that would be affected by such a change.

She says Air New Zealand encourages Queenstown Airport to work with central Otago local government and airlines on options, regardless of the outcome of noise boundary changes which have been strongly opposed by affected residents. The submission is supported by statistics from Air New Zealand, which reveals its passengers spent almost $2bn in Otago last year, and a new airport for the region is imperative.

Queenstown Airport’s 2017 master plan looked at 20 possible alternative sites but ruled out relocation and a new site because of cost, accessibility issues and environmental impacts. There has been no public reaction from QAC to the Air NZ submission in support of its application for an expansion of its noise boundaries, but there has been a reaction from the Business Council of Otago, who lost his application to the Environment Court to use land in northern Southland at Castle Rock as an international airport serving Queenstown, is about to apply for a resource management consent to site an airport on the Castle Rock land.

The board’s executive director, Justin Tighe-Umbers, says the organisation is focused on being able to meet growth in the nearest term, while Air New Zealand was looking for long-term solutions to airport capacity issues in the Central Otago-Lakes region.
Qantas profit up amid social chaos

Qantas’ stellar results were almost eclipsed during the same week as the well-publicised dogfight in Canberra that saw the LNP coalition chew itself to pieces, with PM Malcolm Turnbull deposed and successor Scott Morrison emerging from the murky stall that still has many punters mystified regarding its precise machinations.

No matter—the flagship airline recorded a $A1.1bn strong domestic result, recording a record net profit of $A980m ($1.07bn), up 28 percent from $A790m the year before. Things are bright and sunny for the Australian flag carrier but far from it for the country’s politics. Things are bright and sunny for the Australian flag carrier but far from it for the country’s politics.

Qantas’ subsidiary budget airline Jetstar had sold 24m seats for less than $A100 each. When pressed on whether such deals could continue, given the trend in rising oil prices and less flexibility with the airline’s fuel-hedging provisions, the CEO conceded that while such deals would continue, perhaps fewer seats would be on offer from now on, but the airline still had “many levers to pull” at its disposal.

The CEO declined to comment on the cacophony emanating from Canberra. Qantas has now used up its previous business-loss provisions carried over from previous years and will resume paying tax in the second half of this financial year.

Apart from the ongoing trepidation of all airlines regarding the volatility of oil affecting their profits and operations (with Tapis crude recently surpassing $US86 a barrel), and coupled with Australia’s falling dollar—72c to the US dollar at the time of writing—a climate has been created that is leading to a jittery market, reflected in a relentless sawtooth pattern of losses and gains in the country’s stock market trends. As if the en masse brawl in Canberra were not enough—and it would not be hyperbole to observe that the unedifying spectacle gobble up a week of media space and parliamentary sitting time, leaving many in the nation bemused and disenchant.

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Qantas’ near-parallel rise of 3.7 percent, can be attributed mainly to the rise in oil prices being manipulated by the US and OPEC, the creation of low-paying jobs in both countries and to banks again indulging in risky lending practices. Then there is the house of cards that is destined to eventually fall and lead to further malaise and misery.

Qantas, the airline’s success in the 1982 Falklands War. Even members of the Royal British family have flown them exclusively since the collapse of Lehman Brothers in the US (and its $US600bn loss) that sparked the GFC, which in turn continues to reverberate and afflict many countries and businesses. Some experts who specialise in the esoteric financial activity of “attrition analysis” have concluded that little has been learnt from the GFC and that the apparent strong growth in the US of 4 percent, and Australi-a’s near-parallel rise of 3.7 percent, can be attributed mainly to the rise in oil prices being manipulated by the US and OPEC, the creation of low-paying jobs in both countries and to banks again indulging in risky lending practices.

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An ongoing Royal Commission into malpractices within its banking sector and other financial services—financial advice, superannuation and insurance—thus far has revealed significant amounts of necrotic material identified for exinction, and with yet more to come. At present this has many analysts deeply concerned, especially as the world marks its 70th anniversary since the collapse of Lehman Brothers in the US (and

by Peter Gamble

Things are bright and sunny for the Australian flag carrier but far from it for the country’s politics.

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Why five? One will become a permanent exhibit and the others will be cleaned and presented for sale or as swaps with museums anywhere in the world that would like one. Better still, they might have some thing Classic Flyers would like to add to its exhibits. Before any of them depart, their individual histories will be researched.

These examples entered RAF service around the late 1960s and were retired in the late 1990s to enter storage. The type played a major role in SAR duties and some served in the 1982 Falklands War. Even members of the Royal British family have flown them exclusively since the collapse of Lehman Brothers in the US (and its $US600bn loss) that sparked the GFC, which in turn continues to reverberate and afflict many countries and businesses.

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Aircraft Perlan Mission II, the initiative to soar an engineless aircraft to the edge of space, set a new record last month from El Calafate, Argentina, by soaring in the stratosphere to 76,124 ft, in the process collecting vital data on flight performance, weather and the atmosphere. This incurred delays in interpretation of the data as the intention was to review and interpret data as a complete set rather than piecemeal.

Data from the aeromagnetic survey and its analysis was not a definitive exercise by itself in locating underground water supplies but it was a tool that could assist towards that endeavour.

“We needed, as part of this exercise, to understand the nature of the soils on the surface and also wanted to know where there was faulting within and around the city (Invercargill),” he said.

In December 2014 central government announced its intention to acquire new aeromagnetic data to develop the understanding of the subsurface geological structures, seismic faults, geological hazards, mineral and petroleum potential and location of water resources.

At the time the government announced it was planning to invest $8m to acquire new aeromagnetic data, $6m of this being set aside for data acquisition in Southland, Otago and Marlborough. This was aimed at developing a clear understanding of geological structures in specific areas within these regions.

Representatives from New Zealand Petroleum and Minerals visited Southland in February 2015 to discuss the planned work and the potential for the survey coverage to be extended through local involvement. The government-funded survey areas included a significant proportion of the Clutha and Gore Districts as well as parts of western and northern Southland.

Venture Southland, on behalf of the Invercargill City Council’s Infrastructure and Services Committee, negotiated and facilitated the extension of the survey to cover a 5357km² area of southern Southland for an additional cost of $686,000, covered by the local authorities.

The aero-magnetic and radiometric survey of Southland was conducted from the air by fixed wing aircraft and helicopter and was completed ahead of schedule during the summer of 2016–2017. The survey also came in $686,000, covered by the local authorities.

Steve Cann said there had been very positive benefits from the aeromagnetic survey including:

- Better quality natural hazards information was able to be obtained, particularly in relation to geological hazards such as fault lines and areas of potential geological slipping which could be avoided and/or mitigated when considering potential future developments.
- Southland’s water resources were identified, which will be of significant value to the region’s community, industry and agricultural water supplies in the future.
- When the survey data is combined with the top climate information, Southland will have comprehensive climate, soil, and geological mapping. This will enhance regional economic prosperity by assisting in making better land use and water allocation decisions.
- Council submissions to central government into the future will be informed of issues such as earthquake-prone building legislation and natural hazards management.
- Venture Southland has committed $100,000 to interpret the data of the aeromagnetic and radiometric survey. This is currently in process and will be made available once completed.

A closed-loop rebreather system ensures the only oxygen used is what the crew metabolises. It is the lightest and most efficient system for a sealed cabin, and its design has applications for other high-altitude aircraft.

An onboard wave visualisation system graphically displays areas of rising and sinking air. For commercial flights, following lines of rising air would allow faster climbs and save fuel while also helping aircraft avoid dangerous phenomena such as wind shear and severe downdraughts.

Unlike powered research aircraft, Perlan 2 does not affect the temperature or chemistry of the air around it, making it a suitable platform for studying the atmosphere. The experiments carried aloft in its instrument bay are yielding new discoveries related to high-altitude flight, weather and climate change.

Southland’s aerial survey

Peter Owens reports

The southern regions of New Zealand have long been noted for their mineral resources and a consequent tradition of mining for gold, coal and other minerals. Local authorities in the southern region currently fear a shortage of water in the future and have been discussing ways of finding more of it among these resources.

In southland, the promotional organisation for the region, has been responsible for delivering an aeromagnetic and aeroradiometric survey. This includes managing the service contract of New Zealand Petroleum and Minerals for the work.

210s and PAC 750XLs as well as helicopters, which has specialised in aerial geophysical surveys to identify petroleum potential and location of water resources.

Stephen Cann gave a recent update on the survey at the Invercargill City Council’s Infrastructure and Services Committee meeting.

He said there were delays in completing the aerial survey due to bad weather and limitations of flying restrictions within the Queenstown Airport controlled airspace. This incurred delays in interpretation of the data as the intention was to review and interpret data as a complete set rather than piecemeal.

Photographs via Airbus Perlan 2

October 2018 www.aviationnews.co.nz Aviation News 29

Airbus Perlan 2 crosses Armstrong Line

Stephen Cann
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October 2018

by Brian Mackle of the GAA

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30 Aviation News

www.aviationnews.co.nz

October 2018

anyone following the progress of ADS-B’s introduction to New Zealand will have noticed one Great Big Official Unknown: how it’s going to be paid for.

We all know (and officialdom has formally acknowledged) that the big financial win from ADS-B in New Zealand will be in the form of millions of dollars in lessened airspace and airport costs for us as taxpayers. We also know that for this country to fully enjoy all the same operational benefits as its developed peers, everyone in the aviation system will have to join the party. Just one unequipped (and therefore unseen) aeroplane flitting about in any kind of airspace could pose an obstacle in the path of other traffic.

Perhaps that’s what motivated Graeme Hansen, GAA director, and the Ministry of Transport to urge everyone in the system to crack on with installation of ADS-B in their aircraft. Both also cited possible queues arising for late adopters as a reason to get in early.

The GAA is not fully persuaded.

We write with interest the leading article in the latest Vector magazine, and a supporting report, about ADS-B’s introduction. Making the case for ADS-B, however, was the matter of expense. We know from the ADS-B seminars, and from many aviators, that the cost of this new technology is of major concern.

We also know that on many occasions the question of some form of assistance to recreational aviation has been raised with the CAA. The answer has always been that the Authority is considering the matter.

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The GAA is not fully persuaded.

We write with interest the leading article in the latest Vector magazine, and a supporting report, about ADS-B’s introduction. Making the case for ADS-B, however, was the matter of expense. We know from the ADS-B seminars, and from many aviators, that the cost of this new technology is of major concern.

We also know that on many occasions the question of some form of assistance to recreational aviation has been raised with the CAA. The answer has always been that the Authority is considering the matter.

We met with the director to tell him everyone in the aviation system will have to join the party. Just one unequipped (and therefore unseen) aeroplane flitting about in any kind of airspace could pose an obstacle in the path of other traffic.
In the July issue of Aviation News (page 25) I was inter-
ested to read Terry Moyle’s article headed “A National Aviation Day”. Terry’s research into the Walsh Brothers’
flights revealed the true date of the first powered flight in New
Zealand in their aircraft named Manurewa, which took
place in Glenmore Park, Papakura/Takanini on 5 February
1911.
I was present on 5 February 1986 at the commemora-
tion of the 75th anniversary of this event where a large
stone with plaque attached was erected on the site, with
the date of the first controlled flight noted as being 5 Feb-
uary 1911. Many dignitaries were present and Sir Richard
Bolt was there.
As I knew very little of the background to this mon-
ument I turned to an acquaintance of mine, Nev Hay,
Captain Ret’d, FRAeS, whom I knew had been involved
with the erection of the monument. Nev informed me that
the stone with plaque attached was installed by the New
Zealand Aeronautical Trust (NZAT), in association with the
RAeS (NZ) Branch.
Since then the site has been purchased by Addison
Developments which has been very supportive of re-
trying to prevent the monument from being lost and the
CAA has asked for its return to the people. The new prop-
erty owner now has a new lease on life.
Terry Moyle’s article concludes with the suggestion
that it would be appropriate if 5 February became New
Zealand’s National Aviation Day.
As a member (and immediate past president: Ed) of a
nationwide sport flying organisation, the Sheep Mother
Club of New Zealand, I am all in favour of further promotion of
Terry Moyle’s proposal that we make 5 February New
Zealand’s National Aviation Day, and I call on like organi-
sations to get behind a drive to accomplish this.
Jim Lawson
Wattle Downs, Manukau

October 2018
www.aviationsnews.co.nz
Aviation News 31

National Aviation Day

Really the last?

A lot has been said recently about New Zealand’s last
Spitfire pilot dying.
This last week, we have Ralph Brown. He’s from
Oamaru and flew Spitfires bombers over Ger-
many and to the Gesto HQ in Copenhagen. He flew
with the Indian Mysore Squadron.
The Royal Air Force and can still read the news-
paper without spectacles. I have been giving him my cop-
ies of your Aviation News every month and he thoroughly
enjoys reading them.
He’s very alert and goes shopping on his mobility
scooter during the week. A very nice bloke!
The Nelson Mail had a very good photo of him in the
10 September edition.

Name and address withheld
for fear of embarrassment

Remarkably, they got away with it, not
least because the CAA failed to carry out
the required consultation with interested parties.
Civil Aviation Rule 71.9 requires the CAA
director to consult with affected persons,
organisations and representative groups
within the aviation industry before making a
designation of restricted airspace.
This was a very serious lapse in govern-
ance, for which the CAA almost immediately
caused me to resign my CAA seat.
We’re waiting for the outcome of a
request to have the term of this airspace
restriction extended. Incredible Skies has
applied for a restriction to be removed from
the surface to 3000ft AMSL. But now
more trouble is brewing, and the Group
has been informed that it cannot
unoccupied airspace during the course of
a commercial advantage (especially if the
company applying for this restricted airspace
was acting for a "controlled landing.

The CAA has a policy document “Guide
to airspace restrict

The CAA’s initial assessment has iden-
tified the following VFR operations that
would be directly affected:

• Gliders and tugs circuit at Alexandra
drome.

• Standard overhead join procedure at
Alexandra aerodrome.

• Low flying zone NZL970, Galloway, is
almost entirely within one of the proposed
restricted areas. As per the advice from
Skybase, agricultural aerial operations would be
able to continue, but not tourist flying. However, it is
unknown if, or how many, uncharted aero-
dromes or heliports are within the proposed
areas.

The CAA says a full picture of the likely
impact to aircraft is not yet available and
that it is reliant on feedback from users
in.

The CAA has a policy document “Guide-
lines for the establishment of temporary
restricted airspace”:
https://www.caa.
.govt.nz/assets/legacy/airspace/Guide-
lines_Temp_Restr_Airspace.pdf

A statement from this 2013 document reads: “CAAs are designed to
limit airspace where an applicant may gain
a commercial advantage (especially if the
applicant is flying the aircraft to enter
and operate within the area), unless
there are compelling safety reasons.”

Interestingly, another section of the
2013 document reads: “CAAs are
designed to require the director to ensure
that each portion of special use airspace designated is as small
as possible using the consistent with the activities
for which the area is required. The need for
restricted airspace must be justified and, if
necessary, a lesser volume of airspace than
that requested could be designated if the
request is not supported by evidence.

The CAA considers that there is a con-
siderable public risk. The basis of this is
the assumptions concerning the possibility
of lithium ion and lithium polymer batteries.
in the event of substantial damage occurring
to the batteries due to electrical, mechanical,
or thermal issues, the batteries may emit
biological or chemical gases that may irritate
the interior of the battery to around 80degC,
cuasing gas and steam to appear in the
air.

Thermal runway, normally caused by an
electronic error or mechanical damage, is a
typical fire scenario for Li-ion batteries
and accumulators. It starts in relatively unspec-
fashion, with a rise in temperature, which
heats the interior of the battery to around
80degC, cuasing gas and steam to appear in the
air.

If this process is not stopped, it triggers
a chain reaction. At around 120degC the
separator between the anode and cathode
melts. This causes a short circuit and the
thermal decomposition of the cathode. This
releases oxygen, which combined with the
hydrogen in the electrolyte, could ignite
the battery. The largest known battery
caused by thermal runaway is known as
the Goodyear Air Force Base failure.

Lithium ion and lithium polymer batteries.

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Lithium ion and lithium polymer batteries.
struts replacing the tubular version in December that year. This obtained its JAR/VLA certification in 2001. The cabin size remained the same but the fuselage became known as the Ca9. Next came the nosewheel model as requested by flying schools. This became the Ca9Gn and was first flown in 2004 and approved for training by the Swiss Giesha, but production ceased in 1998, following which the US family tree ends up with Just Aircraft.

So our second SEB SE2 Gn was to become ZK-CRB on 9 August 2018 with Randy Beier, now of Hawera. It was first registered with Tom Keats of Gisborne, Cloncurry, Queensland as VH-JGP, on 14 May 1997, and, after a string of owners and transfer to the Australian recreational regi- ster as 24-8634 it ended up with Randolp Beier. Randy never flew it and advertised it for sale with 225 hours. Looks like it did not sell as it is still with Randy but here in NZ. The first ZK-CRB was an Imco B-1 Callair topdresser from the mid-60s.

The mention of Just Aircraft leads to the listing of the new Just SuperSTOL XL ZK-DIB, for Donald Gray of Te Awamutu. The first ZK-DIB was a well-equipped Piper PA-23-250 Aztec which later became ZK-JEL.

Starting with Cessna changes, we note that C180A ZK-CGG had a single Rowlett 300 two-cylinder engine and Chas Pigott of Rangiora had a 1964 and served as a topdresser and sprayer with Rural Aviation where it picked up the name Sea Horse and carried a small seahorse decal on its engine cowling. This came over from its registration letters of “C” “GG”. It moved to John Harding of Taihape mid-1968 and then to Central Aviation 28 July 2016.

An exciting new species of helicopter has arrived for the An exciting new species of helicopter has arrived for the Auckland Rescue Helicopter Trust (ARHT) in the form of Leonardo AW169 ZK-HLI. This Leonardo name is in the earlier AgustaWestland Snappal (hence the AW model designation) which become Finsme- canna SpA on 1 January 2016 and then Leonardo SpA from 28 July 2016.

The AW169 is a twin-engine P&K Canada PW210A powered 4.81 helicopter designed to use a high degree of comodity with the larger AW139 and AW169 was first unveiled at Farnborough in 2010 with the first AW169 flying in May 2012 and with production rolling off the Italian Vergine line from January 2015. Two have been ordered by ARHT to replace its two current Kawasa- ki BK117 ZK-HLN and ZK-HKZ. The previous ZK-HLN allocations covered a Bell 206 JetRanger, a Hughes 369D and a Eurocopter EC 135 P2.

Flying went through the propeller arc. It joins three other WWI replications covered a Bell 206 JetRanger, a Hughes 369D and a Eurocopter EC 135 P2. This is a wire-braced monoplane and was the first type to be test flown over 50 years ago and it is now part of the special- ist Aviation Services Group (SAS Gp) which now focuses on re-registration.

The late Earl Hagaman owned Cessna 182P Skylane named “Gisela aeroplanes based on the field. The first ZK-EII allocation was to a Piper PA-36-375 Pawnee Brave agricultural aircraft. This was to a Piper PA-36-375 Pawnee Brave agricultural aircraft. This was to a Piper PA-36-375 Pawnee Brave agricultural aircraft.

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Cessna 885F Skywagon ZK-FNQ was used by Dennis Thompson in March 2007 and re-regis- tered for sale. It then went to Bob McRae of Gore. It was sold to Dougal of Whangarei after some 13 years with the Lawsons. Cessna 185F Skywagon ZK-FNQ was used by Dennis Thompson in March 2007 and re-regis- tered for sale. It then went to Bob McRae of Gore. It was sold to Dougal of Whangarei after some 13 years with the Lawsons.

Cessna 182P Skylane ZK-EKJ in November 2010. It is now with Michael Reed, still of New Plymouth and with the Scenic Circle Hotels Group. After disposing of Cessna 172 ZK-DHV and ZK-EK a few years ago, another Cessna is now on the register as ZK-BZH. It is basically a Cessna 172 and it is now with Michael Reed, still of New Plymouth and with the Scenic Circle Hotels Group. After disposing of Cessna 172 ZK-DHV and ZK-EK a few years ago, another Cessna is now on the register as ZK-BZH. It is basically a Cessna 172 and it is now with Michael Reed, still of New Plymouth and with the Scenic Circle Hotels Group. After disposing of Cessna 172 ZK-DHV and ZK-EK a few years ago, another Cessna is now on the register as ZK-BZH. It is basically a Cessna 172 and it is now with Michael Reed, still of New Plymouth and with the Scenic Circle Hotels Group. After disposing of Cessna 172 ZK-DHV and ZK-EK a few years ago, another Cessna is now on the register as ZK-BZH. It is basically a Cessna 172 and it is now with Michael Reed, still of New Plymouth and with the Scenic Circle Hotels Group.
Fletcher PU24-950 ZK-EGK has up now spent itself working the South Island since April 1977, following the company changes all the way up to Ravensdown Aerowork from September 2012. It has now joined Fletcher 950 ZK-DEQ with Murray Hargreaves at Manukau Airport, Auckland.

South Pacific Helicopters recently took over the Wings Over Whakatane operation at Kaiwhata, offering Cessna 208B Grand Caravan ZK-FFL to their fleet.

ZK-FFL is a single-engine turboprop aircraft, a common sight in New Zealand, operated by various airlines and companies across the country. It's known for its capability in challenging terrain, making it a popular choice for aerial surveys, medical evacuations, and cargo transport.

The Helipal Eagle 4000D ZK-KDZ has been sold to the Scarecrow Aviation of Raglan. This model is known for its reliability and maneuverability in complex terrains, making it a preferred choice for helicopter pilots.

On the fixed-wing side, a significant change is the transfer of the de Havilland Canada DHC-2 Beaver ZK-BOH from Auckland to Palmerston North. This aircraft has a long history in New Zealand, serving various roles from utility work to aerial photography, and its survival is a testament to its endurance and adaptability.

For those interested in aviation heritage, the de Havilland Tiger Moth ZK-AMI, a classic biplane, has been relocated to the Christchurch Museum. This aircraft, with registration marks ZK-AMI, is part of the museum's collection, preserving the rich history of New Zealand's aviation past.

The Beechcraft BE-86A ZK-IEQ, known for its versatility in various flight operations, has been sold to the New Zealand Air Force. This transfer signifies the aircraft's continued service and importance in defense and training missions.

In the helicopter sector, the Hughes 269C-1 ZK-IBK has been sold to the New Zealand Police Force. The Hughes 269C-1 is a formidable aircraft with its dual role as an armed and medical air ambulance.

The Robinson R44 Raven II ZK-IGR at Helicopters Auckland has now been sold to the Robinson R44 Raven II ZK-IBO of Power Helicopters, Auckland. This sale reflects the ongoing demand for this versatile helicopter model, known for its reliability and ease of operation.

The Astronics Astor CS77 ZK-ZFX, a small multi-rotor helicopter, has been sold to a private owner in the South Island. This sale highlights the small but significant market for such aviation equipment.

The Cessna 172SP Skyhawk II ZK-CAU, operated by Aeromotive of Hamilton from Australia in March this year, has now been sold in New Zealand. This aircraft has a broad range of uses, from flight training to personal transport, showcasing the diverse roles of aircraft in New Zealand.

What was not mentioned is that this had been sold in October 2017 and has been sitting dismantled in the back of a Hastings hangar ever since. It has now been cancelled from the register as destroyed—although all is not lost as it is now at Tauranga where it will undergo a rebuild with the help of a variety of special interest groups.

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The last Delta II

by Grant Newman

Thor missile has been a successful first stage within the Cold War Gallery at the RAF Museum Cosford in Telford, Shropshire. Aside from its role as a nuclear warhead booster, the Thor missile has been a successful first stage booster for commercial satellites in the Delta rocket programme.

O n 15 September the last United Launch Alliance (ULA) Delta II rocket blasted off from Vandenberg, California, bringing to a close one of the most consistently successful rocket booster programmes in history, following 100 consecutive successful launches.

Carrying the ICESat-2 (ice, cloud and land elevation satellite) safely into orbit, the final Delta II to be launched burned up in earth’s atmosphere, bringing its chapter in space exploration history to a close.

A direct development of the Douglas Thor medium range ballistic missile, the Delta II was conceived as an interim replacement for the Space Transportation System (STS) after the 1986 destruction of the shuttle Challenger disaster, the Delta II became NASA’s standard and thus most utilised commercial and scientific space payload launcher, responsible for boosting into space such successful operations as the Deep Impact probe, which flew into the surface of the comet Tempel 1, and the Mars exploration rovers Spirit and Opportunity.

The Delta II rocket was a twin-chamber motors, are currently being investigated. With relations souring between the two countries, the interim missile-boosted launches, to become the most successful consecutive booster.

With the advent of SpaceX and its reusable Falcon 9 and eventually its Big Falcon Rocket and the continuation of the ULA Delta IV and Atlas V legacy programmes, the Delta II has become surplus to requirements, hence its retirement following the launch of ICESat-2.

Uniquely, the only instance of an individual being hit by space debris was from a Delta II rocket that had burned up in the atmosphere. On 22 January 1997 in Tulsa, Oklahoma, Lottie Williams was struck on the shoulder by a 6in piece of blackened metal. On the reporting of the incident and the delivery of the piece to NASA, it was confirmed that it was indeed from a Delta II rocket.

ULA is a joint project between the Lockheed Martin Space Systems and Boeing Defense, Space and Security, and it held the monop- oly on US government payload launches until the USAF awarded SpaceX a contract to deploy GPS satellites in 2016.

Elon Musk’s enterprising commercial rocketry firm’s novel approach to reusable rocket boosters, swift turnaround times and consecutive success is gaining confidence amongst space payload providers, which is impacting ULA’s ability to provide a cost-effec- tive platform.

Replacements for legacy programmes such as the Atlas V, a descendant of the original Delta II rocket, essentially a Thor first stage booster, the 1986 destruction of the shuttle Challenger disaster, the Delta II became NASA’s standard and thus most utilised commercial and scientific space payload launcher, responsible for boosting into space such successful operations as the Deep Impact probe, which flew into the surface of the comet Tempel 1, and the Mars exploration rovers Spirit and Opportunity.

The Delta II’s second stage was the Delta K powered by an Aerojet AJ-118K restartable motor with Aerogel-50 and nitrous oxide as propellant. Aerogel-50 is unsymmetrical di-methyl hydrazine (UDMH), specifically developed for the Titan intercontinental ballistic missile (ICBM) and hypergolic as the mixture ignites on contact with each other without a catalyst.

Delta II’s first launch took place 14 February 1989, boosting the first GPS block II satellite into orbit. Because of the decision by NASA to deny the STS the ability to launch payload launches following the Challenger disaster, the Delta II became NASA’s standard and thus most utilised commercial and scientific space payload launcher, responsible for boosting into space such successful operations as the Deep Impact probe, which flew into the surface of the comet Tempel 1, and the Mars exploration rovers Spirit and Opportunity.

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Replacements for legacy programmes such as the Atlas V, a descendant of the original Convair Atlas ICBM that uses the Russian-designed and -supplied RD-180 twin-chamber motors, are currently being investigated. With relations souring between the two countries, the interim measure of a US-supplied motor has been taken, but a successor to Atlas V, the Vulcan booster, is under construction.

The retirement of the Delta II was brought to an end one of ULA’s most successful leg- acies programmes, but with the trend toward cheaper reusable systems exemplified by SpaceX’s operational model, ULA’s expensive expendable rockets could be left behind in the commercially lucrative heavy payload booster market of the future.
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