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AUSTRALIAN

No. 355 December 2017

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bizjet operators?

Operation Okra

Three years on



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These aircraft are made for Qantas.

GARETH EVANS P24

COVER PHOTO: *Great Southern Land*, the first Qantas Boeing 787-9, is photographed from a helicopter while taxiing at Sydney Airport. SETH JAWORSKI

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LOCKED ON



November 6 2017

Final flight

Outgoing CO 88SQN
WGCDR Ray 'Homer'
Simpson passes Tomaree
Head Summit during his
final flight as a RAAF fast
jet pilot. 🇺🇦


PHOTOGRAPHER: MARK JESSOP

LOCKED ON



November 10 2017

First flight

Airbus's A330neo poses for the camera during its (belated) first flight. The neo (for 'new engine option') is a re-engined development of the popular A330 twin. 

PHOTOGRAPH: AIRBUS



Hello Dreamliner, pharewell Phantom

12 years is a long time in aviation, and aviation publishing

It's a funny little coincidence. In this issue of *Australian Aviation* we report on the delivery of Qantas's first Boeing 787 Dreamliner, 12 years after the airline first placed its order for the type in late 2005.

Of course the Qantas Group took delivery of its first 787 in 2011, when the first of 11 787-8s was handed over to low-cost carrier subsidiary Jetstar.

But for the parent airline, it's been a very long time coming. The Australian aviation industry, Qantas and Boeing have changed enormously in those 12 years.

Back then Jetstar was a nascent budget airline flying a dozen or so Boeing 717s and Airbus A320s under the leadership of a young Alan Joyce.

Back then the troubled gestation of the 787, including its delayed first flight, supply chain and production headaches, and a grounding due to smoking batteries, were still in the future.

And back then, Qantas was on the cusp of a run of record profits, before the global financial crisis, record fuel prices, the QF32 uncontained engine failure, a grounding during a bitter industrial dispute and a record financial loss all buffeted, and helped reshape Qantas to the airline business it is today.

Under a still fairly young

Alan Joyce today's Qantas is a business transformed, one that again is enjoying robust profits, is innovating in its use of digital technologies, and is enjoying a significantly improved reputation for service delivery. On top of all that, Qantas is again reclaiming its crown as an innovator in long-haul flying, with its plans to begin nonstop flights between Perth and London with the 787 next year, not to mention the planned 'Project Sunrise' nonstop flights from the east coast of Australia to London and New York from 2022.

There's little doubt that Qantas has, to use Alan Joyce's own words, got its "mojo" back.

And I'm really confident that at *Australian Aviation* we too are rediscovering our mojo. This edition is a milestone issue in not only reporting on Qantas's long-awaited first 787 delivery, but for also being the last *Australian Aviation* to be published by Phantom Media.

The first issue of *Australian Aviation* published by Phantom Media hit the streets just over 12 years ago in early 2005, around the time that Qantas was contemplating its 787 order. Since that March 2005 edition a further 140 issues of the magazine have been published by Phantom Media, the small business set up by myself, Lee-Anne Simm and

Andrew McLaughlin to take the reins at *Australian Aviation* from founding editor Jim Thorn.

But from the January-February 2018 issue it is time to hand over the reins for *Australian Aviation* to new owners, Aviator Media.

The driving force behind Aviator Media is Christian 'Boo' Boucousis, a former RAAF Hornet pilot who since leaving the military has enjoyed a successful business career.

Boo is an entrepreneur with the energy, ideas and enthusiasm to take *Australian Aviation* to new heights.

Change ahead won't be too dramatic. Indeed I am excited to be staying on as managing editor of *Australian Aviation*, and I'll still remain invested in the brand, both emotionally – as I have been for 25 years now since I started with the magazine as a cadet journalist in 1992! – and financially, as a minor shareholder in Aviator Media.

Under Aviator Media's stewardship I know that *Australian Aviation* will hit new heights by delivering more of what our readers love – more stories and pages in the magazine, more content on our website, and more and deeper engagement on our social media channels.

I haven't been this excited about the future of *Australian Aviation* for, I'd say, 12 years! 🚀

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was named after McDonnell's legendary
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Preflight

News from
across Australian
aviation



Blue skies ahead?

Virgin Australia posts second consecutive quarterly profit, provides upbeat outlook, confirms management changes

Virgin Australia has posted a second consecutive quarter of underlying profit and expects further improvement over the next six months as its transformation program supports an improved bottom line.

The airline Group achieved underlying profit before tax (PBT) in the vicinity of \$14.4 million for the three months to September 30 2017, a turnaround of \$18 million from an underlying before tax loss of \$3.6 million in the prior corresponding period.

The positive result for the first quarter of 2017/18 announced in a trading update to the Australian Securities Exchange (ASX) on November 8 followed a profitable fourth quarter of 2016/17, again at

the underlying PBT level.

And in terms of the outlook, the company has guided the market to expecting an improved performance in the second and third quarters of 2017/18, compared with the prior corresponding quarters in 2016/17.

"This would represent four consecutive quarters of underlying performance improvement for the group," Virgin Australia chief executive John Borghetti told shareholders at the company's annual general meeting in Brisbane.

In August, Virgin Australia reported a statutory after tax loss of \$220.3 million for the 12 months to June 30 2017. The airline Group said at the time the

result was impacted by a subdued domestic market and one-off charges as it withdrew 18 Embraer E190 regional jets and eight ATR turboprops from the fleet.

Virgin Australia is in the middle of its three-year transformation program (dubbed "Better Business") that is targeting \$350 million in annual savings by the end of 2018/19 through fleet simplification, operational efficiencies and other measures.

The company has also sought to bolster its balance sheet through paying down debt and boosting free cash flow.

"The Better Business program continues to track ahead of schedule," Borghetti said.

Virgin Australia's trading

update said revenue improved 5.7 per cent in the first quarter, compared with the prior corresponding period.

Meanwhile, Virgin Australia's domestic network grew revenue per available seat kilometre (RASK) 8.8 per cent, while load factors rose 3.8 percentage points to 81.4 per cent as capacity, measured by available seat kilometres (ASKs), fell 3.3 per cent.

"We are managing capacity prudently," Borghetti told reporters during a conference call following the conclusion of the AGM.

On the international front, Virgin Australia's overseas flying experienced a 17.7 per cent jump in ASKs as new Airbus A330-200 flights between Melbourne

Virgin Australia is enjoying smoother flying. ROB FINLAYSON

and Hong Kong and five times weekly Melbourne-Los Angeles services with Boeing 777-300ERs outweighed the end of three times weekly Sydney-Abu Dhabi services.

The capacity increase was not quite matched with demand, with revenue passenger kilometres (RPK) rising 14.2 per cent. As a result, load factors eased 2.5 percentage points to 82.3 per cent.

Borghetti said Virgin Australia's Hong Kong service – which increased from five times weekly to daily in late November – was performing well, particularly with passengers from China travelling to Australia via Hong Kong as part of the partnership with Hong Kong Airlines.

“Our loads are good, I'm very happy with the way our Hong Kong services are going,” Borghetti said.

Asked when Virgin Australia would announce more flights to Hong Kong or begin previously

mooted nonstop services from Australia to mainland China, Borghetti said: “The best answer I can give you is next year.”

“We are working hard in getting additional slots in a couple of cities,” Borghetti said.

“I would like to think that by this time next year we will have slots. Now I won't say which city that will be but we will have slots.”

Borghetti said any additional flying to Hong Kong or mainland China would be undertaken by Virgin Australia's fleet of six A330-200s, which are currently being used on Melbourne-Hong Kong as well as on trans-continental services between Perth and Australia's east coast capitals.

Meanwhile, Virgin Australia has made Rob Sharp's move from Tigerair Australia to head office a permanent one.

On November 16, Sharp was named group executive for Virgin Australia airlines, having held the post in an acting capacity since June following the sudden departure of John Thomas.

Borghetti said in a note to staff that Sharp had been chosen to run the day-to-day operations of the airline following an extensive internal and global search.

“Rob is an experienced senior aviation executive, having held a number of executive positions in the Australian airline industry over the past 20 years,” Borghetti said.

“Rob has a wealth of commercial expertise including specialist experience in operating in a multi-brand environment, he is backed by strong operational credentials and has a track record of innovation.”

Sharp began as chief executive of Tigerair Australia in May 2013.

Tigerair Australia executive manager flight operations Peter Wilson would remain as the LCC's acting chief executive while the search for Sharp's permanent replacement was ongoing.

And Virgin Australia has also given Danielle Keighery an expanded role as group executive for brand, marketing and public affairs.

The new position adds customer and partner marketing, customer and relationship management and business marketing, and strategy to Keighery's existing responsibilities for public affairs. **A**

Qantas profit growth on upward trajectory

Qantas expects to return to profit growth in the first half of the current financial year amid what chief executive Alan Joyce describes as a “mixed market”.

The airline group said in a trading update on October 26 underlying profit before tax (PBT), which excludes one-off items and which it regarded as the best indication of financial performance, is forecast to be in the range of \$900-950 million for the six months to December 31 2017.

If the result is in line with guidance, it would represent an improvement of up to 11 per cent from underlying PBT of \$852 million in the first half of 2016/17. Qantas posted an 8.4 per cent decline in full-year underlying PBT in 2016/17.

Qantas's market update said revenue across the airline group for the three months to September 30 was \$4.19 billion, up 5.1 per cent from the prior corresponding period.

Meanwhile, revenue per available seat kilometre (RASK), which is a measure of demand, was up 3.1 per cent.

“We're pleased to see continued strong performance across our portfolio of flying and loyalty businesses in what is a mixed market,” Joyce said.

“We're making good progress towards our annual target of \$400 million in cost and revenue improvements, with the Dreamliner and domestic Wi-Fi two examples of projects that will make us more efficient and deliver a revenue premium.

“Overall, despite an uptick in fuel costs and the challenges from competitor capacity growth on the international side, the Group remains on track for another strong underlying first half and a successful full year.”

The company's latest traffic figures showed the airline cut capacity, measured by available seat kilometres (ASK), in the

domestic market across its Qantas and Jetstar units by 2.7 per cent in the first quarter of 2017/18.

It has guided the market to a 2-3 per cent reduction in group domestic capacity for the first half, an increase from the forecast one per cent reduction at the company's full year results presentation in August.

Joyce said the domestic market was healthy but remained very competitive.

“The high rate of revenue growth we've seen so far this year is likely to slow when compared with what was a strong second half last year,” Joyce said.

Qantas's international network reported a 10.8 per cent improvement in total passengers carried, with capacity up 5.4 per cent thanks to recently launched new services such as the return to Beijing in January and the upgauging of some Sydney-Auckland flights to widebodied Airbus A330s that began in July. Average load factors improved 2.2 percentage points to 84.2 per cent.

The airline is also adding more trans-Tasman flights from Brisbane and Melbourne to Auckland from March 2018 as Emirates withdraws from those two routes.

Overall, Qantas said its international ASKs would increase about five per cent in the first half, in line with previous guidance, and three per cent in the second half of 2017/18.

This compares with international competitor capacity growth of about three per cent in the first half and 6-7 per cent in the second half, Qantas said.

“There's been a welcome easing of capacity growth in the international market but the indications are that it is likely to pick up pace again in the second half,” Joyce said.

Qantas said the total fuel cost for the airline group was forecast to be \$1.55 billion for the first half, up from \$1.49 billion in the prior corresponding period. **A**

Cathay Pacific not waiting for Hong Kong's third runway to grow

Cathay Pacific chief executive Rupert Hogg says there are still opportunities for growth at the busy Hong Kong Airport while the new runway is being built.

Although slot restrictions at Chep Lap Kok are well documented, Hogg says Cathay is aiming to grow annual capacity each year until the third runway was completed and ready for operations in late 2024.

This would be achieved through new long-haul destinations, as well as upgauging of existing services with larger aircraft.

"From our point of view as the hub-based carrier it is important that the hub continues to grow," Hogg said during a panel discussion at the Association of Asia Pacific Airlines (AAPA) Assembly of Presidents in Taipei on October 25.

"We have a plan to grow through that period. Our plan has us growing at about four to five per cent a year off a very big base up until the point that the third runway is open.

"We are doing that essentially by introducing more new long-haul destinations, by upgauging or using bigger aircraft types."

In a continuing trend of airlines operating larger aircraft, earlier in 2017 Cathay ordered 32 single aisle A321neos to replace Cathay Dragon's current in-service fleet of 15 A320s and eight A321s, which will allow the airline group's regional-focused operation to grow capacity on existing services.

And the trend of upgauging was particularly evident of Cathay's Australian routes, where the oneworld alliance member has replaced 251-seat A330-300s with a combination of 280-seat A350-900s and 340-seat Boeing 777-300ERs to the likes of Brisbane, Melbourne, Perth and Sydney.

Hogg, who began as chief executive on May 1, noted 65 per cent of all aircraft movements at Hong Kong Airport currently were on widebody aircraft. Increasing the number to 70 per cent would be the



equivalent of adding an extra 1.5 million passengers a year.

Although the new runway was still seven years away, Hogg said the Hong Kong government, airport authority and civil aviation regulator were all working hard to get more out of the current

setup through new air traffic control processes, increased terminal space and aircraft parking facilities.

"The challenge now is to make sure that Hong Kong, which is the largest international hub in Asia with 70 million plus passengers a

year, can continue to grow," Hogg said.

"You can see that there are collectively a whole lot of things that can be done to keep the hub functioning effectively when you know what the current state is and where you need to get to in terms of the next generation of infrastructure."

The difficulty of securing slots at Hong Kong Airport is not lost on Australian carriers, with Virgin Australia forced to operate a split schedule when it commenced Melbourne-Hong Kong flights for a number of months before it managed to pick up some more slots to offer a daily service and more consistent departure times.

Qantas too has been seeking to grow services to Hong Kong with limited success.

In other Cathay news, it emerged in early November Qatar Airways has bought a 9.61 per cent stake in the Hong Kong-based carrier, saying the airline had "massive potential" for the future.

The Doha-headquartered airline acquired the 378,188,000 shares in Cathay Pacific from Kingboard Chemical Holdings Ltd, which is listed on the Hong Kong stock exchange, for HK\$5,162,266,000 (A\$865.3 million).

The transaction is Qatar Airways' fourth investment in a foreign airline group. It holds 20 per cent in International Airlines Group (the parent company of Aer Lingus, British Airways, Iberia and Vueling), 10 per cent of LATAM Airlines Group and 49 per cent in Italian carrier Meridiana.

Earlier in 2017, Qatar had planned to buy into American Airlines, but the idea was dropped after the US carrier expressed little enthusiasm for the deal.

Qatar would be the third-largest shareholder in Cathay Pacific once the transaction is completed. The bulk of Cathay Pacific stock is held by two major shareholders – Swire Pacific Ltd owns about 45 per cent, while Chinese flag carrier Air China owns about 30 per cent. **A**

information

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SALE OF IMPOUNDED ARTICLE (AIRCRAFT)
(Under the Provisions of the Impounding Act 1993)

Quotations for the purchase of the abandoned/unregistered/un-airworthy Aircraft listed below will be received up until **12 NOON Tuesday 16 January 2018.**

- PA-31-350 Navajo Chieftain Aircraft (Registration – N5BU)



Two aircraft inspection dates have been arranged at Albury Airport for:

- Thursday 07 December 2017 from 1230hrs to 1430hrs
- Monday 18 December 2017 from 1230hrs to 1430hrs

The highest or any quotation will not necessarily be accepted.

The above item is required to be removed from the Albury Airport within 30 days after the successful purchaser has been notified and following the closure of sale. Please note the aircraft does not have flight log books, is currently not airworthy and likely to require dismantling prior to transport from the airport.

Inquiries for further information and inspection should be directed to AlburyCity Group Leader Commercial Businesses/Mark Munday on (02) 60238111 or online at www.alburycity.nsw.gov.au/navajoircraft.

All Quotations to be forwarded to the Attention: Mark Munday – Engineering Department, Albury City Council via info@alburycity.nsw.gov.au or mailed to PO Box 323 Albury NSW 2640 and received at Albury City by 12 noon Tuesday 16 January 2018.

China Airlines prepares to join Kangaroo Route

China Airlines says its upcoming move to offer double daily services between Sydney and its Taipei hub is part of efforts to support new services to London Gatwick.

The Skyteam alliance member will join the plethora of carriers on the so-called Kangaroo Route linking Australia and the United Kingdom when its new four times weekly Taipei-London Gatwick flights kick off on December 1 with Airbus A350-900s featuring the airline's latest cabin products.

On the same day, China Airlines is increasing its Taipei-Sydney schedule from four times a week with Airbus A330s currently to twice daily. The route will also be operated by the A350-900, offering passengers a consistent product all the way from Sydney to London Gatwick.

China Airlines' A350-900s are configured with 306 seats comprising 32 in business with direct aisle access for every passenger, 31 in premium economy in a 2-3-2 layout and 243 in economy at nine-abreast.



China Airlines is due to begin flying the A350 to Sydney from December 1. ROBB FINLAYSON

By contrast, the A330-300s currently used to Sydney have either 307 or 313 seats in a two-class format, with business class an angled-lie flat seat in a 2-2-2 layout that does not offer direct aisle access for every passenger.

China Airlines general manager, strategic planning department, corporate development office James Chung said the Taiwanese flag carrier had been heavily promoting its wider Asian and Australian market in the UK ahead of the London Gatwick service kicking off.

"From December we will also have the new London route, so yes,

China Airlines from this December we are joining the Kangaroo competition," Chung told reporters at the Association of Asia Pacific Airlines (AAPA) Assembly of Presidents in Taipei on October 25. "We know there is much competition. But at China Airlines we believe we can try to target some niche markets."

The schedule change for Sydney will be the latest in a series of recent tweaks to its Oceania route network, with China Airlines recently ending its Sydney-Auckland and Sydney-Christchurch tag flights.

On a more positive note, Chung

confirmed China Airlines would boost its Taipei-Brisbane-Auckland service from five times a week currently to daily by the start of December with the A350-900, replacing A330-300 equipment on the route.

And as more A350-900s get delivered, the A330-300s used on Melbourne-Taipei were also expected to be replaced with the next generation Airbus widebody.

"In the next year we have another four A350s that will be coming, so gradually we will be changing A330 services for this route to the A350," Chung said.

Qantas codeshares on China Airlines' Australia-Taiwan services. Australia and Taiwan have an open skies air services agreement.

Asked about the prospects of bringing in more feed for the London flight by offering a nonstop flight to Auckland, compared with the one-stop options via Australia being offered now, Chung said New Zealand was challenging from an aircraft utilisation perspective.

"It's not easy to handle even a daily flight to Auckland," Chung said. **A**

Boeing forecasts 930 new aircraft for Oceania

➔ Boeing has downgraded its forecasts for new orders in Oceania over the next two decades, with the bulk of the reduction coming in the single-aisle segment featuring aircraft such as its own 737 and Airbus's A320.

The manufacturer's outlook is for airlines in the region - Australia, New Zealand and the nations of the South Pacific - to order 930 new aircraft worth \$US140 billion over the next 20 years.

The estimate is a decrease of 90 aircraft from the 1,020 expected for Oceania in the 2016-2035 Current Market Outlook (CMO).

The Oceania figures from Boeing's CMO for 2017-2036 were shown during a presentation to media attending Qantas's delivery events for its

first 787-9 at Boeing's Everett facility on October 16.

The single-aisle category was cut from 800 in the prior year's CMO to 680 aircraft, a reduction of 15 per cent.

By contrast, there was an increase in the small widebody segment (between 200-300 seats) from 130 aircraft to 150 aircraft.

There was also an increase in the regional jets segment, which Boeing does not compete in but offers a forecast for, from zero aircraft in the prior year's CMO to 10 in the current outlook.

The medium/large widebody segment was unchanged from the previous year.

Boeing Commercial Airplanes managing director for product marketing and analysis Jim Freitas said the emergence of next generation aircraft such

as the 787 enabled airlines to launch more point-to-point routes with smaller gauge, lower cost equipment.

Airlines were also able to grow through adding new frequencies on existing routes and opening new markets rather than flying larger aircraft.

Freitas was also upbeat about the budget end of the market in Oceania.

"We do see strong growth in LCCs and the low-cost long-haul carriers," Freitas said.

Boeing expected the Oceania fleet to increase from about 580 aircraft today to 970 over the next 20 years, with some 540 aircraft replaced and 390 new aircraft joining the fleet for growth. Just 40 aircraft flying today will still be in the skies in two decades' time, according to Boeing estimates.

"That indicates you have a fairly mature market in Oceania today," Freitas said.

The bulk of the growth in passenger traffic for Oceania was likely to be for travel within the region, as well as to and from the key markets of the Middle East, China and South-East Asia.

"We see the Oceania market has huge potential growth," Qantas chief executive Alan Joyce said.

The forecast reduction in single-aisle orders comes as the Australian domestic market has experienced almost no growth over the past two years as Qantas and Virgin Australia have cut capacity in an effort to improve the bottom line, and better match the number of seats in the market with demand, amid the slowdown in the mining and resources sectors. **A**

Samoa Airways to ensure country able to determine its own destiny – PM

Prime Minister Tuilaepa Sailele Malielegaoi says Samoa's newly established airline ensures the country will be able to determine its own destiny.

Samoa Airways' maiden flight took off on November 14, when leased Boeing 737-800 I-NEOS departed Apia as OL731 bound for Auckland. The airline is offering six weekly flights on the Apia-Auckland route and two flights a week between Apia and Sydney.

Speaking at the airline's formal launch at Apia's Faleolo International Airport the day before the inaugural service, Prime Minister Tuilaepa said Samoa Airways was something the country should have set up a long time ago.

"Samoa can no longer rely on others to determine our destiny in terms of air travel, we can no longer sit back and let others dictate to us what's best for our people and this country," the Prime Minister said in a speech posted on the Samoa government's Facebook page.

"Having our own airline ensures that we will be able to determine our destiny.

"Having our own airline will create jobs and will contribute to the economic growth of our country through increased exports and also contribute to increasing tourists to our country. Something that was not done under past arrangements."

Prime Minister Tuilaepa said the government "has not given the airline any funds to start the airline", telling Samoa Airways employees they had to "run it as a business".

"To our airline management and staff, this is the time to work as professionals, to act as professionals, to put your best foot forward, to showcase Samoa and its airline to the world," he said.

"Do it right, do it properly and make the airline profitable."

The Samoa government said on its Facebook page the aircraft, which landed in Apia on Saturday after its ferry flight from Milan via Muscat, Singapore and Cairns, was wet leased from Icelandair, with the arrangement to switch to a dry lease in six months' time.

Some 20 cabin crew were undergoing training to work on the 737.

Prime Minister Tuilaepa's comments appear to be a veiled swipe at Virgin Australia, following the Samoa government's decision in May to terminate its Virgin Samoa joint venture with the Australian carrier that was established in 2005 and set up Samoa Airways. Media reports at the time said the decision to ditch the JV was due to concerns over high fares.

A memorandum of understanding with Fiji Airways was signed in July to help establish Samoa Airways, with the current domestic carrier Polynesian Airlines to be part of the new venture.

Prime Minister Tuilaepa said the decision to set up Samoa Airways was "based on sound and well researched studies".

"No one else will look after our country's needs but us," he said. "If we do not do it now, it will never be done."

"If you look around our region, from Vanuatu to the Solomons, Nauru to Kiribati and Tahiti to Fiji, our neighbours have their own national airlines and they have maintained their airlines successfully and profitably.

"If others can do it why can't we. The answer is we can."

The Prime Minister said the partnership with Fiji Airways would offer connectivity to Asia and the United States via codeshares.

Samoa Airways and Air New Zealand will be the only two airlines flying nonstop between Apia and Auckland, after the Samoa government knocked back Virgin Australia's application to stay on the route following the end of the JV.

While flights from Brisbane and Sydney to Apia launched on November 13 as previously planned, Virgin Australia was forced to cancel its proposed five times weekly Apia-Auckland service with 737-800s.

The airline said it had removed the Auckland flights from sale, describing the Samoa government's decision as "out of our control".

"We are disappointed by this decision and at this stage are working in conjunction with the Australian Government to explore options to encourage the Samoan Government to reconsider its decision," Virgin Australia said on October 30. 

New rules for recreational drone users

Australia's Civil Aviation Safety Authority (CASA) has introduced new rules for recreational users of remotely piloted aircraft systems (RPAS).

Under the new rules, recreational users are prohibited from flying these aircraft, commonly known as drones, within 5.5km of any controlled aerodrome, which covers all capital city airports and some at regional centres.

Drones, which have surged in popularity in recent times, are also prohibited to be flown within 5.5km of non-controlled aerodromes or helicopter landing sites when it is clear aircraft are operating there.

Further, drones must be kept below 400ft and not get any closer than 30m from people not involved with the operation of the drone. Also, recreational users can only fly one drone at a time, CASA said on October 20.

"The new rules will better protect people and aircraft from drones. They focus on the operation of recreational drones," CASA said in a statement.

"The drone safety rules have been tightened in response to community concerns about the safety of drones and the rapid growth in drone numbers."

CASA said those holding a remote pilot licence (RePL) and

operating drones according to a remotely piloted aircraft operator certificate (ReOC) or those with an authorisation from CASA, would be exempt from the new measures.

The new rules also prohibit all drones – both recreational and non-recreational – from being used where fire, police or other emergency operations are underway, unless there was approval from the person in charge of the emergency operation.


The regulator also reaffirmed existing rules that do not allow drones to fly over and above crowds and groups of people, as well as regulations that only allow flights during the day and within visual

line of sight.

CASA chief executive and director of aviation safety Shane Carmody said the new rules still offered plenty of opportunities for those who fly drones for fun.

"We certainly don't want to ban recreational drones but we do have to make sure public safety is properly protected," Carmody said.

"CASA identified some areas in the drone rules that needed strengthening and clarifying to better manage the risks associated with flying drones.

"The changes make the safety requirements clearer for people flying drones and will make the rules easier to enforce." 



Northrop Grumman awarded RAAF C-27J sustainment contract

Northrop Grumman Australia has been awarded a performance-based contract to maintain the RAAF's fleet of Leonardo/L-3 C-27J Spartan battlefield airlifters.

The contract is for an initial five-year period, and will renew annually for up to 22 years under a "rolling wave" arrangement, should Northrop Grumman continue to meet performance targets.

Ten C-27Js are on order for the RAAF, with the type being introduced into service with 35 Squadron at RAAF Base Richmond, west of Sydney.

The award announcement

comes some six months after the contract was awarded, and builds on Northrop Grumman's growing transport aircraft maintenance work in Australia which also includes sustainment of the RAAF's KC-30A MRTT at RAAF Amberley and Brisbane Airport, and the Canberra-based Boeing 737BBJ and Bombardier 604 SPA fleet.

"This program represents the strategic foundation for Northrop Grumman upon which we can build sovereign Australian capabilities to sustain and modernise the 5th Generation Air Force of the future," Ian Irving, chief executive, Northrop Grumman Australia said

in a statement.

"It allows us to deliver on our commitment to establish and grow a uniquely Australian defence capability while leveraging our world-class defence technologies and global infrastructure."

Northrop Grumman has teamed with Leonardo, the C-27J's original manufacturer, in order to "reduce primary risks to data access, design engineering support and supply chain management."

Work on the C-27J will initially take place at RAAF Base Richmond, before moving to Amberley in the medium-term when 35 Squadron relocates there. **A**

Australia signs up to Next Generation Jammer development

+ The RAAF and the US Navy have signed a memorandum of understanding (MOU) to jointly develop the ALQ-249 Next Generation Jammer Mid-band (NGJ-MB) capability.

Next Generation Jammer is an external jamming pod that will replace the ALQ-99 Tactical Jamming System on EA-18G Growler airborne electronic attack aircraft.

The jammer technology will be cooperatively matured by the RAAF and the Airborne Electronic Attack Systems and EA-6B Program Office (PMA-234). The MOU provides the framework for communication, coordination and cooperation during engineering and manufacturing development.

"This is a very important milestone for both nations, one that took four years of communication and collaboration to successfully achieve," Chief of Air Force AIRMSHL Leo Davies said on November 2.

"As this is a rapidly evolving area, we will work in partnership with the US Navy to develop the next-generation jamming capability, which will ensure that our aircraft remain at the technological forefront throughout their service life."

AVM Cath Roberts, Head Aerospace Systems Division within the Capability Acquisition and Sustainment Group (CASG), attended the signing, which was held on October 18 in Hawaii.

Minister for Defence Senator Marise Payne announced in March that Australia would be partnering with the US to develop a next generation radar and radio jammer for the Growler at a cost of \$250 million. **A**

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SriLankan arrives in Melbourne

SriLankan Airlines has returned to Australia for the first time since 2001 with the start of nonstop flights between Melbourne and Colombo.

The inaugural service, operated by Airbus A330-300 4R-ALM, touched down at Melbourne Airport at about 1515 on October 31, following its 10-hour journey from Colombo.

The aircraft was on the ground for about two hours before operating the return flight back to Colombo's Bandaranaike Airport.

SriLankan last flew to Australia in 2001, when it ended flights between Colombo and Sydney. AirLanka, which preceded what is now SriLankan, operated Colombo-Sydney-Melbourne-Colombo services with Lockheed L1011 Tristars in the early 1990s.



SriLankan Airlines A330-300 4R-ALM lands at Melbourne on October 31. VICTOR PODY

SriLankan chief executive Captain Suren Ratwatte, chairman Ajith Dias and Sri Lankan State Minister of Public Enterprise Development Lakshman Yapa

Abeywardena also travelled to Melbourne on the first flight. "We're incredibly excited to be connecting Melbourne and Colombo like never before,"

Captain Ratwatte said.

"We look forward to providing our award-winning service, delivered with world-renowned Sri Lankan warmth and hospitality, as Australians travel to Sri Lanka, India, the Maldives and beyond."

Melbourne is the oneworld alliance member's second-longest route behind its Colombo-London Heathrow flight, and Captain Ratwatte noted Australia was home to one of the largest Sri Lankan expatriate communities, many of whom lived in Melbourne.

SriLankan is hoping its new flight will attract Australians travelling not just to Sri Lanka but also beyond to countries such as India and the Maldives.

While the inaugural flight was operated by an A330-300, the smaller A330-200 will operate the route on an on-going basis. **A**

IATA boss says airport privatisation a failure

International Air Transport Association (IATA) chief executive and director general Alexandre de Juniac says the privatisation of airports around the world by governments often seeking a short-term boost to the budget has proven to be a failure.

Speaking to the Association of Asia Pacific Airlines (AAPA) assembly of presidents in Taipei, de Juniac said airports performed better in public hands.

"That is the conclusion of three decades of largely disappointing experiences with airport privatisation," he said in his speech on October 25.

"The primary focus of airports should be to support local and national prosperity as an economic catalyst.

"But in private hands, shareholder returns take top priority. And we struggle with costs at privatised airports as far flung as Paris, Sydney and Santiago."

His comments come as the aviation industry tries to cope with the growing demand for air travel, with the number of passengers in the Asia Pacific alone expected

to more than double to about 2.1 billion annually over the next two decades.

Infrastructure looms as the major bottleneck, with many airports in the region at or above design capacity, air traffic management constrained by a lack of inter-government cooperation regarding airspace, and slot restrictions acting as a handbrake on growth.

While de Juniac said privatisation was "not by itself negative", the regulation of those airports – both the regulatory framework and the regulatory body – lacked efficiency.

"What we have seen is that regulating privatised airports is difficult, to be polite, and has been a failure, to be impolite," de Juniac told reporters on the sidelines of the AAPA conference after his speech.

"We haven't found any government or any country that has been able to regulate efficiently privatised airports. So we have seen in countries in which airports are privatised an increase in airport charges, in whatever we pay to land and to park our aircraft. At the same time the airfares have decreased.

The gap is significant."

Further, de Juniac noted those airports that regularly topped the list of the world's best airports, citing Amsterdam, Dubai, Hong Kong, Seoul Incheon and Singapore Changi as examples, were all in government hands.

He said the move to sell off airports was often not triggered by aviation interests but pressures on government budgets.

"It is because the state needs money," he said.

"When they are privatised, the public entities, whether it is local governments or states, they wash their hands about this infrastructure which is absolutely monstrous because when you talk about hubs it is national interest infrastructure."

In Australia, the major capital airports are either publicly-listed companies or held by large investment or superannuation funds.

And the industry group representing the nation's airports, the Australian Airports Association (AAA), has previously talked up the benefits of privatisation, noting the "billions of dollars of private investment that would have

otherwise come from the pockets of taxpayers under a government ownership model".

AAA chief executive Caroline Wilkie, writing in the August edition of *Australian Aviation*, said the privatisation of the nation's airports that began with Brisbane, Melbourne and Perth two decades ago had "arguably been one of the most successful and transformative infrastructure privatisation processes this country has ever seen".

"It's also worth remembering that our major airports remain over 85 per cent Australian-owned by Australian superannuation funds, so the investment in our critical infrastructure and the benefits it delivers helps drive our economy," Wilkie said.

"While we observe the challenges currently facing several other infrastructure sectors as they begin the transition to private ownership, perhaps there are some valuable lessons that can be learned from our major airports."

IATA has conducted an extensive study on airports, the details of which de Juniac said would be released soon. **A**

Revised OneSky tender price under evaluation

Defence has revealed that a new tender price for Australia's ambitious OneSky program to acquire a joint civil and military air traffic management system is currently under evaluation.

Thales was announced as the successful supplier for the Airservices Australia-led OneSky project at the Avalon Airshow in February 2015. However, negotiations between Airservices and the French-headquartered aerospace and defence company have become increasingly protracted, and an Australian National Audit Office (ANAO) report published in April questioned OneSky's value for money, suggesting Australia could end up paying too much for the project.

"In June last year they [Thales] submitted an offer based on their

original tendered offer that had gone through a further negotiation phase," Rear Admiral Tony Dalton told the Senate's Foreign Affairs, Defence and Trade committee on October 25.

"The assessment of that offer in June last year was it didn't represent value for money.

"There has been a degree of work done on that offer with Thales in the intervening period that culminated with a revised price being offered by Thales last month. That is currently under assessment."

RADM Dalton is now general manager ships at Defence's Capability Acquisition and Sustainment Group (CASG), but retains responsibility for Defence's portion of the OneSky program.

Defence's share of the OneSky program is known as "Project AIR 5431 Phase 3 Civil Military Air

Traffic Management System", and was added to the government's Projects of Concern list of Defence acquisition programs requiring special remediation in August, a near unprecedented move for a program yet to be contracted.

RADM Dalton explained that the delay in signing contracts was one reason OneSky was added to the Projects of Concern list, and that further delays might force Defence to seek an alternative supplier to replace its existing Australian Defence Air Traffic System (ADATS).

"Well certainly the timeframe has slipped. That's been part of the issue and that's why it's been elevated to a Project of Concern," RADM Dalton said.

"But inside our budget, we have some allowances to cater for the obsolescence emerging in

the current defence system. That clearly is a concern for us and there is a finite amount of time that the process can go on before we have to look at alternatives."

Further, RADM Dalton confirmed the cost of Defence's share of the program could be higher than first expected.

"Our contribution to the overall OneSky program may need to increase. We have made some allowances in the revised Integrated Investment Program to accommodate for that increase. Our negotiations with Airservices have said that there's a finite amount of money that we're prepared to increase," he said.

"Part of the discussions that we've had with Thales, through the Projects of Concern process, has made that abundantly clear to Thales." **A**

Remembering Ben Sandilands

• Tributes have flowed for veteran aviation journalist Ben Sandilands, who died in late October after battling cancer.

Fellow journalists and "adversaries" from the world of PR said Sandilands' deep knowledge of and passion for aviation shone brightly in a career that spanned close to 60 years.

While his peers read his work with much admiration, the public relations staff at the airlines and companies Sandilands had in the crosshairs faced a persistent, determined journalist unrelenting in his pursuit to get to the bottom of every story.

And he was never shy in expressing his opinions, regardless of whether it was in casual conversation or when questioning an airline chief executive at a media conference.

As Justin Dubon from the Airbus media team explained in a message of tribute on the *Australian Aviation* website: "Ben's passion for aviation was infectious and his 24hrs a day

coverage was legendary. Never one to shy away from an opinion, he kept us PRs dancing on our toes. He was always available at all hours and grew to become a dear friend and sparring partner. Dear Ben - one of the great aviation journalists - we remember you fondly and will miss you. Your friends at Airbus."

Heather Jeffery, who led the PR team at Virgin Blue for many years, recalled in her tribute on *Australian Aviation* meeting Sandilands for the first time.

"Ben was terrifying - an encyclopaedic font of aviation knowledge waiting to be aired. But quickly and over the years I understood him to be irrepressibly passionate about the industry, extremely fond of his family, colleagues and competitors, a gentleman (even when he was almost yelling at me - probably deserved) and above all a truly kind human being."

And former Australian and International Pilots Association president Captain Barry Jackson, noted Sandilands "did not mind ruffling a few feathers"

and always went "beyond the spin".

Sandilands covered aviation at Fairfax Media's *The Australian Financial Review* and *The Sydney Morning Herald* mastheads through a period where Australian Airlines and Qantas became one, Ansett folded, Virgin Blue emerged and then morphed into Virgin Australia, as well as the arrival on the local scene of low-cost carriers in the form of Jetstar and Tigerair Australia.

For the past decade, Sandilands wrote on aviation for the Crikey online blog *Plane Talking*, where his combination of analysis, opinion and news often provoked much comment from readers.

Even Qantas chief executive Alan Joyce was prompted to respond to one of Sandilands' *Plane Talking* posts in June 2011.

Most recently, Sandilands had written extensively on the search for missing Malaysia Airlines flight MH370.

He had also written for *The Bulletin*, *Guardian Australia* and the ABC.



This body of work was recognised with a lifetime achievement award in 2015 from the National Aviation Press Club.

Aviation journalists and industry figures also took to Twitter to pay tribute to their colleague.

Long-time aviation editor at *The Australian* and now editor/Asia Pacific bureau chief for *Airline Ratings* Steve Creedy said Sandilands was a larger-than-life colleague whose sharp observations would be sorely missed.

Reuters Asia aviation and defence correspondent Jamie Freed, who previously covered aviation for Fairfax Media in Australia, said Sandilands was an "industry legend".

Qantas pilot Captain Richard de Crespigny expressed similar sentiments in farewelling a "legendary aviation journalist and friend".

Australian Aviation contributor John Walton perhaps put it best, saying "how fortunate we truly are to have known Ben and to have read his work".

Australian Aviation extends its deepest condolences to the Sandilands family. **A**



A smooth transition

MAS looks for leadership stability with new local CEO

When the heads of Asia's major airlines gathered in Taiwan's capital Taipei in late October for their annual talkfest, the Association of Asia Pacific Airlines (AAPA) Assembly of Presidents, there was one notable absentee.

With good reason. The now former chief of Malaysia Airlines (MAS) Peter Bellew was instead heading back to his Irish homeland to take up a new job as chief operating officer of budgeteer Ryanair after accepting what everyone is convinced was an offer he couldn't refuse.

From an AAPA point of view he was sorely missed. Not only was Bellew supposed to have participated in a panel session discussing "Evolving Business Models" in the airline industry, during his brief tenure at MAS he had become a favourite speaker at meetings and conferences because of his deep industry knowledge and Irish wit. (He was more than a raconteur. At the assembly a year earlier in Manila he delighted delegates at the traditional event-ending gala dinner by getting on stage and rocking the audience with a few songs delivered in a more than professional manner.)

The question now is: where does Malaysia Airlines go after his departure? This is the only airline in the world that has had four chief executives in three years. It is in the middle of a major restructure aiming to get it from bankruptcy to profit by next year.

Surprisingly, since it is a process that usually takes months, the airline's board moved quickly to appoint a replacement. He is Captain Izham Ismail, a long-time employee of the carrier with 38 years of experience. He started with MAS as a pilot and rose through the ranks to be director of operations, later chief executive of subsidiary MAS Wings and until now, chief operating officer of MAS.

Not so surprisingly, he is a local.

“There is, however, some reason to hope the future still looks reasonably bright.”

Malaysia Airlines is now under the command of former pilot Izham Ismail. **ROB FINLAYSON**

After losing German Christoph Mueller – a turnaround specialist known as “The Terminator” – prematurely in 2016 just a year into his much-vaunted plan to bring MAS back to financial health, Bellew hit the road after only 18 months in charge.

With two foreign chief executives departing surprisingly early there was no way the carrier was going to look overseas for a replacement. Many insiders believe these repeated changes in leadership bode ill for an airline that has a financial record that would give any self-respecting business owner nightmares. It has, with stunning regularity, plunged from record profits to bankruptcy over the years, hardly helped by the twin air disasters in 2014, the mysterious disappearance of MH370 in the Indian Ocean and the shoot-down of MH17 over Ukraine.

There is, however, some reason to hope the future still looks reasonably bright. While Mueller (now with Emirates Airline) and Bellew have gone to greener pastures, they have left in place a solid transformation plan. Bellew especially has instilled a new

culture of optimism amongst staff.

“Bellew's departure, if anything, has merely accelerated our plans to localise the leadership of Malaysia Airlines group,” MAS chairman Nor Yusof said in an email to the entire workforce.

Indeed, the 12-point MAS Recovery Plan (MRP) envisioned a return to leadership by local talent eventually. Besides, Izham has been deeply involved in the restructure from the beginning and will certainly be able to power on with what needs to be done with little interruption or change.

Nevertheless, the airline's board is well aware some local chiefs have had problems in the past gaining the confidence of all sections of the workforce. Chairman Nor has urged the staff to rally support for the new group CEO, saying MAS flights must continue to take off and land on time, and continue to provide sincere and genuine Malaysian hospitality across every customer touch point.

“We have weathered many storms together as a family and we will come back stronger and better than ever...it is critical now more than ever that you all continue to focus and deliver what is required of each of you. The nation is counting on us all to make this airline the pride of the nation once again. We should not allow anything to derail us from achieving this,” he said.

To ensure a smooth transition, a board executive committee will be in place for up to six months. It will be led by Nor and two other directors. Bellew himself took to social media to give his successor some backing.

He used Instagram to congratulate Izham with an emotional tribute: “My friend Izham is new group CEO of MAS. A proud dad and granddad. Aviation professional. Technical geek. Outstanding pilot. But most important – a wonderful man. He will be a great leader of this special airline. I am very proud of you Izham. I'll pray for your success. I hope you still have me on speed dial. God Bless You,” he wrote. **A**





Life in the balance

The fast-paced existence of the professional pilot

The best part of an airline career is the relaxing layovers at destinations, only to return home to find your comfortable chair and slippers waiting. And if you believe that, then I might just have a bridge I can sell you.

The truth is that a career in aviation has moved a long way from the stereotype featured on the travel posters of decades past. The family waiting on the doorstep for the returning aviator is not the reality of the current age, but then again, the current age is a vastly different place in many ways.

Aviation, like many other fields, is no longer an exclusively male domain. Women strive equally to reach their goal of the flightdeck and, like their corporate sisters, most face the 'career versus children' conundrum at some point. The issue is complicated somewhat by another element of modern society that virtually demands that both parents work to meet the burden of ever-rising mortgages and school fees. Aviators are far from alone in this, but the juggling act of rosters and absence make the equation even more challenging.

Furthermore, our society has become a place of instant gratification, where everyone seems to need everything yesterday. Although time travel may still elude us, the time it takes us to travel continues to shrink, even in our subsonic airliners. Seemingly ever-increasing range bypasses ports that were once stopovers between continents, while transit times domestically are increasingly compressed.

Additionally, the increased frequency of services has meant that the once luxurious layovers at outports have been replaced by just enough time to eat and rest before the journey begins to the next destination.

This is what the modern marketplace calls for and accordingly the airlines strive to meet their passengers' needs while remaining a step ahead of the competition.

Caught in the congestion is the human element, the flightcrew.

The balance between life and work in our society continually surfaces as one of life's greatest challenges, and a career in aviation is no different. And this is more than a bleeding-heart perspective for a profession that many still consider to be a privilege, this is a genuine concern for an industry that continues to grow while the number of those choosing to fly seems to be on the decline.

For the first time in recent memory, it is not uncommon to hear pilots say that they are actively discouraging their offspring from following in their footsteps. They are not playing a passive role and letting their children find their own feet, they are proactively telling them to look elsewhere. For an industry that has been accused of nepotism, this is a new turn of events. But why?

The reasons are many, as are the pressures on any modern household. Undoubtedly, the cost of training for a career with no guarantees of success is a deterrent for many who can find a more straightforward path through tertiary education or a trade. However, it would seem to be more

than that, frustrating many current pilots.

As customer demand has increased with tighter schedules in close pursuit, workload and time away have necessarily increased, but it is the persistent clash of life and work that ultimately creates the most tension. Rather than missing some family occasions, it now seems to be the norm and a weekend off with the family is golden. Leave during school holidays is of a premium as that is when the demand for crew is often at a peak.

This is now set to a backdrop of two working parents, where once most couples had one warrior holding the fort and usually that was everybody's hero – Mum. However, even when children aren't involved, starting and maintaining a relationship in these circumstances comes with additional challenges in a world spinning at a breakneck pace. Time together as a family unit seems to be shrinking for the population in general, and rosters for those that crew our aircraft have an extra ingredient in the mix.

A common lament is for rostering to be improved to find the balance. Inefficient pairings where long tours of duty generate minimal hours of actual flying and more days at work rankle most pilots and cabin crew. A good many pilots have expressed that they rate the work-life balance as their priority and would rather that any

future enterprise bargaining process address rostering and flexibility as a prime goal ahead of any pay increase.

To their credit, a good many airlines are addressing the issues and offer options for carers, flexilines, part-time rosters and so on. Even so, the nature of the business makes this difficult for them as an employer too and the best of these schemes can still be hobbled despite everyone's honourable intentions.

On the part of the pilots, there are those who no longer seek to ascend the linear path of promotion or seek to fly the latest and greatest in the fleet. Route structures, time off, time zone changes and multiple other factors are emerging for many crew as the considerations that they rate more highly over status and dollars. The era of the breadwinner being defined by gender or the like are gone and all working relationships these days are more a co-op than a boardroom. At home, the cockpit gradient is not as steep as it once was, and few would not agree that is a good thing.

Mental health continues to be an issue drawing attention these days, and there is no doubt that a content home life is a key component of everyone's general well-being. The outback Cessna pilot may not have climbed the aviation ladder in some people's eyes (not mine), but with a rewarding home life, they are still a happy individual. Conversely, you can put a pilot at the helm of the Space Shuttle, but if their life at home is strained then odds-on they'll be a miserable person to be around, or sit next to on the flightdeck. And that affects everyone's performance.

Even in aviation, at its core, human contentment is about the heart and not the hardware. Or more to the point, it's about finding the balance between the two. **A**

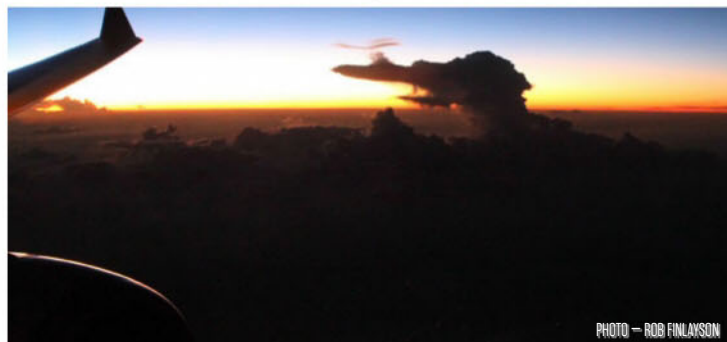


PHOTO - ROB FINLAYSON



Function over geography

Combat power through organisation, part 3

The October and November On Target columns outlined the evolution of RAAF organisational policy up to 1986, with the observation that although the RAAF proclaimed to organise itself on a functional basis, that organisational functionality was disrupted by the reality that 'RAAF Formation Officers Commanding' were geographically limited 'RAAF Base Officers Commanding'. So unless all the assets of an air capability were co-located, such as the maritime patrol units at RAAF Base Edinburgh, the singular oversighting of an air force capability by a dedicated commander was difficult.

For instance, when Mirage squadrons were resident at Williamstown, Butterworth and Darwin, the three squadrons reported through different command chains, through their respective OCs at Williamstown, Butterworth and Darwin. Similarly, the RAAF air support squadrons of Chinook, Iroquois and Caribou were spread across Fairbairn, Richmond, Amberley and Townsville with command chains through four different OCs. These command arrangements meant there was no single appointment responsible for the oversight of either the tactical fighter force or the tactical transport force until the various command chains came together at the level of the AOC, Operational Command.

This was a serious organisational deficiency and it took some years to carry the argument that 'unity of command' over all the assets of a specific air capability was more important than 'unity of command' over all the units located on a particular base.

After some years of discussion, especially at the tactical and operational levels, the Chief of Air Staff (as the Chief of Air Force was then known) Air Marshal 'Jake' Newham decided

to transition the Air Force to a fully functional operational organisation. He determined, with effect from February 2 1987, that RAAF operational units would be organised into 'force element groups' (or FEGs). Newham, with his strong operational background, including tours as staff officer operations and senior air staff officer at Operational Command, was well placed to decide this issue, although initially he introduced the new arrangements on a 'trial basis', to give time to win over doubters. But it was obvious there would be no going back, and the FEG structure was formalised in June 1988.

In brief, like-roled operational units would be grouped together under one commander. For the fighter capability, all fighter units together with the operational fighter training units were grouped into the Tactical Fighter Group (TFG), and with air defence and air superiority operations being dependent on air surveillance and direction, the supporting air surveillance/direction units of the Air Defence Ground Environment (ADGE) were also included in the TFG. OC RAAF Williamstown became CDR TFG, commanding units located at Williamstown, Tindal, Darwin, Amberley and Pearce.

The Strike Reconnaissance Group (SRG) incorporated the strike/reconnaissance F-111C

squadrons, together with F-111C operational training. The Maritime Patrol Group (MPG) incorporated the maritime P-3C Orion squadrons together with the P-3C operational training units. OC RAAF Amberley and OC RAAF Edinburgh became CDR SRG and CDR MPG respectively.

OC RAAF Richmond became CDR Air Lift Group (ALG), gaining authority over the Fairbairn-based VIP squadron while losing command of the Richmond-based Caribou tactical transport squadron. Critical to the 24/7 operations of the ALG, was the Air Movement Coordination Centre and the RAAF high frequency radio network through which command and control of deployed air lift and maritime patrol aircraft was effected.

A significant change was the establishment of the Tactical Transport Group (TTG) comprising the Iroquois/Black Hawk, Chinook and Caribou squadrons, resident at Fairbairn, Richmond, Amberley and Townsville. In hindsight, as all these units were in the business of 'air support', especially air support of the Army, this FEG might have been better titled the Air Support Group, with its command elevated to an air commodore, rather than a group captain. Both measures would have emphasised the importance the RAAF placed on air support operations.

The FEG commanders

also gained command over the operational/intermediate level maintenance units, such as the 400 series maintenance wings, supporting each FEG; and the reorganisation resolved the ambiguity about the authority of the Air Staff Officer by abolishing the appointment, and returning to the practice of grouping some squadrons into wings under the command of an 'OC', generally of group captain rank. Two of these wings, No 81 Wing (F/A-18A) and No 82 Wing (F-111C), were also given roles as deployable tactical headquarters which provided the Air Force with options for the command and control of deployed air operations.

The 1987/1988 FEG reorganisation, heralded by the formation of No 1 Operational Group in 1943, was a seminal event in RAAF history, and while the FEGs have since been reshaped as the capabilities of the Air Force evolved, the Air Force became a more capable combat force because of its more focused, accountable and effective operational organisation. [A](#)

Air-Vice Marshal Brian Weston (ret'd) was CO Base Squadron Richmond in 1986, OC Base Support Wing Richmond in 1987, and CDR Tactical Fighter Group from July 1990 to July 1993.



A retired F-111C is towed to be placed on display at the RAAF Wagga Heritage Centre last year. Nearly 30 years ago command for the jet became the responsibility of the Strike Reconnaissance Group. [DEFENCE](#)



Suite new A380, but is it the business?

Singapore Airlines unveils new superjumbo seats and layout

As the first details of Singapore Airlines' new Airbus A380 configuration leaked out in November, your author wondered where the classic SQ wow factor has gone. Ten years ago, the carrier launched the A380 (remember "first to fly"?) and introduced the first doored suites. With suites now flying in business class as Qatar Airways' Q Suite and on Delta Air Lines' new Airbus A350, Singapore Airlines finds itself playing catchup.

Let's look at the numbers. Singapore Airlines' A380 refit is the second major second-generation A380 cabin refit, after Qantas (see Cabin Pressure, October 2017). Where Qantas offers 14 first class seats, 70 in business, 60 in premium economy, and 341 economy seats, Singapore Airlines' A380s will have six of the new first class suites, 78 of the new business seats, 44 in premium economy and 343 in economy.

The suites will move upstairs, creating a single-aisle front cabin and displacing business class seats backwards in the upper deck. Premium economy will take over the space where first class currently sits at the front of the main deck, with economy remaining at the rear of the main deck. Notably, all A380s will be outfitted in the same layout rather than some having economy in the rear portion of the upper deck.

Singapore Airlines' suites are a new take on the single-aisle upstairs A380 product, which was first introduced by Etihad as its Apartment product. There are fewer than Etihad's nine seats, and no Residence taking up one of the spaces and a "forehead" lavatory. There aren't showers either, with those forehead zones turned into a pair of large loos with powder room seating.

Inside the suite, a fold-up bed sits along one wall, with a large inflight entertainment monitor that swings along the aisle wall of the suite. The seating is comprised of a single swivelling chair on the window side of the suite opposite the bed, with a table folding out from an angled console between the chair and the aisle. Beneath the windows sits a set of consoles and storage, and there's an option to combine two suites into one larger double bed.

The swivel thing has been tried before, most recently by American Airlines on its Boeing 777-300ER first class product. It hasn't been universally successful, with the benefits of the swivel outweighed by the compromises around knee space in desk mode and the fiddliness of the mechanism. With manufacturer Zodiac Seats UK – a company that has not recently covered itself in glory on timely delivery of quality products to customer specification and user delight – producing the suites, this will be something to watch.

There's a lot of space in the

suite, but is it ideally used? There's no sofa hiding underneath the bed, so it's unclear what passengers are expected to use all the space for, other than sitting and looking at it. The table, too, sits between the swivel chair and the door, so passengers will be expected to face away from the windows towards the aisle while dining. The positioning of the seats and the lack of any other seating also means that passengers travelling in pairs are unable to dine together.

Given the amount of space in the suite with the bed folded up would allow a flight attendant to walk around to serve food at a window position – perhaps with a pop-up screen to allow movie fans to watch something while eating – this seems like a missed trick, as does the relative narrowness of the bed, which is a common complaint in both the Etihad and first-generation Suites product.

In business, there are new forward-facing fully flat beds from Japanese seatmaker Jamco, which also produced the current Boeing 777 product for the airline, after the

current A380 seats manufactured by disgraced seatmaker Koito, which falsified safety testing, were understandably discontinued. The big news is that the three pairs of bulkhead business class seats will convert into a double bed, although a chunky divider from waist level down will discourage hanky-panky. The seats seem a little small, though, and retain SQ's signature angled sleeping function that isn't universally loved. Apart from an updated design language (likely to match the imminent regional business class refresh) there's little innovation here.

Premium economy will be the same seat as on existing aircraft, while economy will see new seats in the usual 3-4-3 layout rather than the 3-5-3 configuration Airbus has been pushing.

All in all, many (including your columnist) are wondering where the old SQ magic is. Instead of gazing in wonder at the new Singapore Airlines product, all eyes are turned to the unveiling of Emirates' new first class suites as this issue of *Australian Aviation* goes to press. **A**



There's a lot of space in the suite, but is it ideally used?



Beyond the hype

Will Qantas realise the 787's full potential?

Question is, does Qantas really understand the Boeing 787 and its game changing potential?

Perhaps it's a silly question to ask after all the extraordinary media coverage surrounding the aircraft's arrival in Sydney late in October.

But there are some signs that the airline does not.

The most obvious is the very slow pace of delivery of four by March and four more in the second half of 2018.

Just a paltry eight on order with Qantas management saying it has to prove [to the markets] the business case of point to point flying.

The next batch of four from the 45 options and price rights will not be delivered till late 2019 according to Qantas executives.

But the Australian markets have already given it an enormous tick of approval.

When Qantas finally received approval in December from Perth Airport to base its Perth-London non-stop from its domestic terminal for a hub operation, the airline's share price was just \$3.37.

On the news there was an uptick and the shares rose to \$4.10 in April when Bank of America Merrill Lynch upgraded its recommendation from neutral to buy solely on the economics (fuel savings) of the 787.

This is the first time in recent history that a stock market analyst has changed a rating for an airline solely on

“There are so many routes begging for the Qantas 787 non-stop capability.”

Qantas's first Boeing 787-9 visits Melbourne. ROB FINLAYSON

the basis of a new aircraft.

Qantas shares shot up and peaked at \$6.45 before settling back to \$5.90 on a more modest outlook forecast from the airline.

The Merrill Lynch report said that “the Dreamliner could make a material impact to International, which we see as a structurally difficult market for QAN.”

“We think the aircraft range should help QAN compete with hub airlines, and turn around loss making routes like Melb/London and LA/New York.”

Qantas is a conservative company, which is important in aviation, but is it being too conservative?

The 787 is not new and Qantas has the advantage of all the other operators' experience and route developments.

Ticket sales on the Melbourne-Perth-London route are said to be “very strong” and there are so many routes begging for the Qantas 787 non-stop capability.

And most are not the ultra long-haul like Perth to London.

Adelaide-Los Angeles, Sydney-Seattle, Cairns-Los Angeles, Melbourne-San Francisco, Sydney to Chicago and the list goes on and on with Perth to Paris, Berlin and Rome all no brainers.

The 787 – and A350 – are a new breed of aircraft. Total game changers and the market is convinced of the business case.

Another sign that Qantas doesn't quite get the 787's potential is the size of the premium economy cabin, which

only has 28 seats.

This was based on the take-up on A380 but an ultra long-range flight begs more PY seats as the value case becomes more compelling.

Air New Zealand is now deploying its 787s on Houston and it's fitting 33 PY seats, although it has fewer business beds than on the QF 787.

But the pioneers of premium economy, British Airways and Virgin Atlantic, have the mix right in their 787-9s with 39 and 35 seats respectively.

PY is the future of air travel for legacy carriers because of the huge number of baby boomers who want to continue to travel in retirement – but not in economy.

While the population grows in height and width, airlines are being forced to reduce the personal space for passengers to meet the price points set by an ever-increasing number of low-cost airlines.

And the move by airlines like Scoot and Norwegian onto long-haul routes adds further pressure on traditional airlines' offerings.

Qantas chief executive Alan Joyce and his management team have done a superb job turning Qantas around, and the 787 has arrived at the right time with the airline in great shape financially and importantly, culturally.

Staff are onboard, the markets are onboard and the 787's credentials are top of class.

There never has been a more ideally suited aircraft – except the 777 – for Qantas.

If Qantas can't convince the markets of its true potential then there is something very wrong.

And if Boeing was to build Qantas's perfect aircraft from scratch, they would have built the 787 or the 777-8.

So, is Qantas going to switch 787 options and price rights for the 777-8 and -9?

Either way these types of aircraft are its future and the sooner the better. [A](#)



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READ BEFORE FLIGHT



GREAT SOUTHERN LANDS

Qantas takes delivery of its first 787 Dreamliner

WRITER: GERARD FRAWLEY

It's been a long time coming. When the first Qantas 787-9 touched down in Sydney at the end of its delivery flight from Boeing's Everett factory on October 20, almost 12 years had passed since the airline first placed its order for the 787 in 2005.

Qantas and Boeing have changed dramatically since the airline first announced its original order for 65 787s in December 2005, which at the time was the largest order placed to date for the aircraft. The 787 program itself suffered from a series of tumultuous development and production delays, while Qantas has

ridden the highs and lows of record profits and record losses.

In all more than 600 787s have already been delivered to airlines around the world – including Qantas's own Jetstar low-cost carrier subsidiary, which has been operating the shorter 787-8 variant since late 2013.

"I'm very proud," Qantas Group chief executive Alan Joyce told *Australian Aviation* onboard the newly-accepted 787-9, registered VH-ZNA and named *Great Southern Land*, shortly after formally accepting the aircraft in a ceremony at the Future of Flight Aviation Center adjacent to

Boeing's Everett facility on October 16.

"You think of all the work and effort from the entire Qantas team that went into this, and seeing how good it looks in reality – I've seen the drawings, I've seen the designs – but seeing it in real life is just amazing."

Acceptance of the aircraft marked a milestone day for Joyce, and a milestone day for Qantas, which, after a series of delays and deferrals, is only now taking delivery of its first 787, 10 years after the first 787 development aircraft was rolled out and six years after the first customer 787 delivery, to ANA, in September 2011.



“Everything went so smoothly today, having Iva Davies with us performing that song [*Great Southern Land*], seeing the new name on the aircraft, that was just so emotional and I think anybody that was in that room would have felt a bit of a tear coming on because it was amazing,” Joyce said.

“We’ve only changed the logo five times, and we’ve only done it when we think there’s a game-changing aircraft coming, and this one for us was a big occasion.”

But it is how Qantas will operate the aircraft, pioneering nonstop flights between Australia and the UK from

March next year, that will differentiate it from other operators of Boeing’s composite widebody twin.

“That range is special, and the reaction around the globe that that last frontier of aviation of linking these two continents together has got huge coverage, we’re seeing coverage everywhere and that shows you it has grabbed people’s imaginations,” Joyce said.

And even bigger things are to come for Qantas, which has announced Project Sunrise to acquire either the Boeing 777-8X or Airbus A350-900ULR to operate nonstop

✦ **VH-ZNA taxis in at a wet Sydney Airport on October 20.**

JAMES MORGAN/QANTAS

flights from the east coast of Australia to both New York and London.

“When we announced Project Sunrise in head office we had 3,000 people there, and you could see the excitement, the buzz that that created, because it does show that Qantas is back at the top of its game,” Joyce said.

“It’s got its mojo back, I think, and this [the 787] is an example of that.”

That was a theme that Joyce reiterated on the ground in Sydney shortly after VH-ZNA had landed on Australian soil for the first time.

“This in some way to me is a bit about the rebirth of Qantas,” Joyce

told the 1,500 Qantas staff, industry guests and media who were inside the airline's Hangar 96 at Sydney Airport on October 20.

"We can look so much forward to our second century stronger and more determined to be a world leader than we have ever been."

VH-ZNA had departed Paine Field, Everett on the morning of Tuesday October 17, with Qantas chief technical pilot Captain Alex Passerini, manager 787-9 introduction Captain Lisa Norman and project pilot – training First Officer Jim Eaglen on the flightdeck, landing in Honolulu five hours later.

The aircraft then spent the night in Honolulu before departing on the second leg of the journey to Australia just before midnight (local time) on Wednesday, touching down in a very wet Sydney 10 hours later.

VH-ZNA will be quickly followed by the next seven aircraft over the next 12 months through to November 2018. The second 787-9 is set for delivery to the airline in early December (allowing Qantas to begin Melbourne-LA flights), and it will be followed by aircraft three in January and aircraft four in mid-March, then Qantas International chief executive Gareth Evans confirmed ahead of VH-ZNA's formal handover.

Those four aircraft will allow Qantas to launch its Perth-London flights, pioneering nonstop commercial airline services between Australia and Europe for the first time.

"The four aircraft are actually patterned together so that the aircraft run Los Angeles-Melbourne-Perth-London in a sort of smile pattern," Evans told media at Boeing's Everett plant on October 15.

"It starts to help us build a western hub, and potentially we can add additional services to Europe through that hub in the future, potentially a Brisbane-Perth-Paris or a Sydney-Perth-Paris, building a hub and hitting those key European hubs directly."

But Qantas has already announced that its next four 787s will be based in Brisbane, two of which will be used to replace Boeing 747-400s on the airline's current Brisbane-LA-New York rotation. That will then leave the remaining two aircraft for future route opportunities.

"The range capability that this technology delivers will enable us to hit new destinations, potentially things like Brisbane-Chicago," Evans said.

"This new technology, and the technology potentially to come, will



“
These are
aircraft that
are made for
Qantas.”

GARETH EVANS

revolutionise our international network. These are aircraft that are made for Qantas and we can do unique things with these aircraft that other airlines, because of their geography, perhaps will not, or don't need to.

"Because of their size, these aircraft are going to be great for our Asian network as well – point-to-point travel into Asia, 236 seats so there's great opportunity and potential going forward for us to use this wonderfully flexible and efficient aircraft right around our network."

And future 787 orders could be for the largest 787-10, or, probably less likely, the shorter 787-8, joining the 11 -8s that are already in service with Jetstar.

"This is a flexible order stream, so with appropriate notice we could move from a -9 to an -8 to a -10 and so it's a great level of flexibility that we have to manage our fleet plan together with Boeing," Evans said.

In all the first eight 787s will allow Qantas to replace its five oldest 747s.

Beyond that Qantas holds options and purchase rights on a further 45 787s, but Joyce says a decision on exercising some of those options won't be taken until some point next year after seeing how the first aircraft perform in service.

"There will be a gap, we do need to bed down the [787] operation, make sure that everything is working," Joyce said. "We do have flexibility with Boeing and there is availability [of delivery slots] at the end of 2019, 2020 onwards."

It's a relatively conservative approach to introducing the aircraft into service, but nonetheless it seems likely the ultimate Qantas fleet will end up as much larger than eight units.

Boeing's latest Current Market Outlook forecasts airlines in Oceania (Australia and New Zealand) will require 150 medium-category



widebody airliners of the 787 size over the next 20 years. Given Qantas is by far the largest of the three major airline groups in Australasia, that suggests a much larger Qantas 787 fleet in the longer term.

Joyce hinted a 787 fleet in the “teens” was likely at the minimum.

“We’ve always said that the eight aircraft that we have as an example of the 787s is a minimum,” he said. “We’d like to have a lot more than that. You actually do have to get in the teens, I think, for the aircraft to have a minimum flyable level of operation. Eventually, we will be ordering more of the 787s because we think it’s a great aircraft. It’s just at what pace of time that we do that.”

How and where Qantas deploys the 787 will also determine how many 787s it eventually acquires. One point Joyce stressed was that it was unlikely the 787-9 would be deployed on domestic routes – at least after VH-ZNA finishes

its domestic flying in November and December while crews build currency and experience on the type.

For the domestic mission, especially on east coast trunk routes, the 787, like the A330, is too heavy, Joyce said.

“With the 787s, as with the 330s, we find that they are pretty powerful over-specced aircraft for flying Melbourne to Sydney, so the economics do not work on those legs. What we have done is we’ve added more and more frequencies, which the market likes with 737s, and that has dramatically improved the economics of our domestic operation.

Instead Joyce revealed Qantas is looking very closely at Boeing’s proposed New Mid-sized Airplane (NMA) project to develop a new small widebody airliner.

“That’s why this mid-range aircraft is actually very interesting, because while there are slots at Sydney today, [over time it will be] completely full.

We know that. But I think our forecast has by 2023, we’re thinking we’ll be full and therefore having bigger aircraft that can do those routes, I think is going to be key.”

Qantas is “very keen” on the prospects of the NMA, which the Qantas boss described as “a fantastic transcontinental and maybe [to] Asia aircraft”.

“The economics of that on paper look good,” Joyce said.

“We think there is a bit of gap... and Boeing thinks that as well,” Joyce said.

“This is where Qantas is probably unique because we want ultra long-range but we also have a huge domestic network, so you want an aircraft unlike the 787s and the A330s which are designed for long range and are heavier than what we want [for domestic flying] so the economics on domestic takes a hit, whereas this aircraft could be the perfect vehicle east-west, into South-East Asia and leveraging the [available] slots [at Sydney].

“And that is something that we are very keen on and are working through.”

And at the other end of the size scale, Qantas’s likely 787 order book is likely to be affected by the decision it makes for its ‘Project Sunrise’ requirement for an ultra long-range aircraft, a development of either Boeing’s 777-8X or the Airbus A350-900ULR, capable of operating nonstop between the east coast of Australia to London and New York.

Joyce says the existing Airbus and Boeing designs come close in terms of meeting the mission of a full passenger and cargo payload in both directions for London and New York from Australia’s east coast capitals of Brisbane, Melbourne and Sydney, as well as points in South America and South Africa.

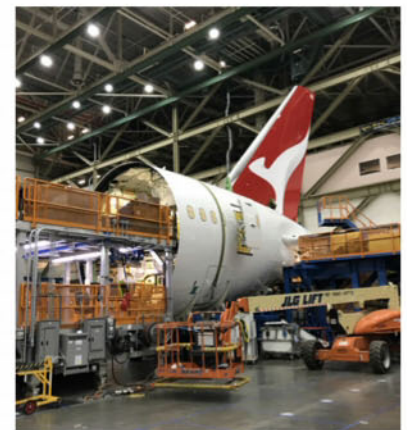
“We think this challenge is feasible,” Joyce said.

“From our perspective, the critical thing is to get it with full payload. We want the full capability of the 777-8X on those routes with full passenger payload and full freight payload.”

While most of the initial focus when Project Sunrise was publicly launched in August was on London Heathrow (9,188nm from Sydney) and New York JFK (8,647nm), Qantas has also earmarked Rio de Janeiro in Brazil (7,312nm) and Cape Town (5,946nm) in South Africa as new frontiers for nonstop service.

And Joyce has publicly stated a desire to mount nonstop flights to other

➤ VH-ZNA departs Paine Field on the first leg of its delivery flight to Sydney. SARAH COLLINS



European points beyond London, such as Paris and an unspecified city in Germany.

“We’d love to be able to fly directly into Brazil, into Rio and we’d love to be able to fly directly into Cape Town,” Joyce said.

“Existing technology doesn’t allow us to do that. While the aircraft is close, it’s not quite there.”

Currently, the world’s longest route by distance is Qatar Airways’ Doha-Auckland service at 7,848nm, operated by Boeing 777-200LR equipment.

While it is true the 777-8X and A350-900ULR are capable of operating those Project Sunrise routes, the range versus payload specifications were not quite where Qantas believed they needed to be for either airframes to ensure the routes were economically viable.

The Boeing website lists the 777-8X as having a range of 8,700nm and a passenger capacity of 350-375 passengers. The aircraft is expected to enter service in 2022.

However, the final specifications will only be known after further development of the aircraft design and an analysis of its General Electric GE9X engines.

Meanwhile, Airbus has not published specific technical data on the A350-900ULR, stating only the long-range variant was capable of flying 19 hours and carrying up to 165,000 litres of fuel. By comparison, the standard A350-900 has a range of 8,100nm and could take on 141,000 litres of fuel.

Although Qantas has not spelled out its specific requirements for passenger count and cargo, preferring only to say

⌚ Clockwise from top left – star of the show at the formal delivery dinner at Everett on October 16; greeted by traditional dancers at Honolulu; Icehouse performs in Hangar 96; the tail of the second Qantas 787 on the Boeing final assembly line; landing on 16 left at Sydney, and on the ground in Honolulu. GERARD FRAWLEY, LEE GATLAND, SETH JAWORSKI

a full payload was the target, Joyce did offer one little detail about the potential cabin layout.

“Our ideal is to have all of our classes on board the aircraft,” he said.

“We know there is a certain demand for business, we know there is a certain demand for premium economy. And we know we have to have economy on the aircraft to make the economics work. The prices will be competitive.”

It’s likely Qantas will look to acquire more than the half-a-dozen or so ultra long-haul jets it would need for daily Sydney-London and Sydney-New York flights, as both aircraft types would open up a range of other nonstop options – Melbourne and Brisbane to London nonstops, Sydney nonstop to Chicago, Toronto and even Rio de Janeiro. (Sydney-Rio is ‘only’

7,312nm, but the great circle route crosses over the top of Antarctica.)

And beyond that, whichever new type Qantas selects under Project Sunrise – the name is a nod to the ‘Double Sunrise’ flights Qantas operated nonstop between Perth and Sri Lanka using Catalinas in WW2 – it seems likely to form part of a larger subfleet.

Both the A350 and 777X families present interesting options for Qantas as it looks to replace its widebody fleet, the 777-9X could replace A380s and 747-400ERs for example, the A350-900 could replace A330s, if the 787-9 is not already pencilled in for that.

So with major fleet decisions looming at the top and bottom ends of the 787’s range and seating capacities it’s hard to see Qantas taking up all 45 orders, options and purchase rights. But CAPA – Centre for Aviation’s senior analyst Will Horton makes the point that the original Qantas Group 787 operator, Jetstar, could be the natural home for more of the type.

“Jetstar operates 11 787-8s and would benefit from a larger fleet, including -9s, to allow it to finally seize opportunities it has had to wait on while competitors – notably Scoot and AirAsia X have grown their widebody fleets,” Horton wrote in late October.

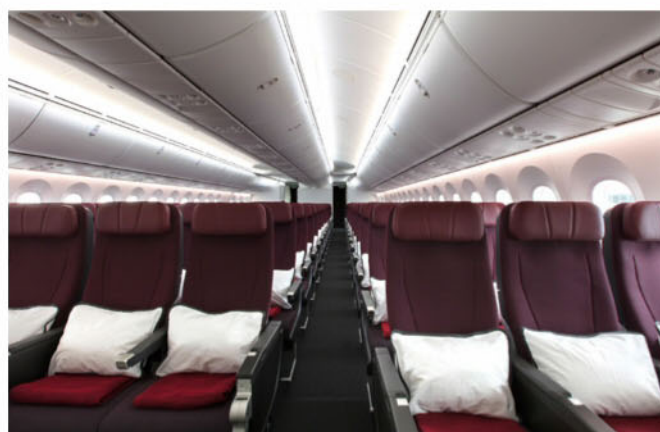
But, notes Horton, the Qantas Group’s target of a return of 10 per cent on invested capital would “significantly restrict” the capital outlays available for any Jetstar (or indeed Qantas mainline) 787 follow-up order.

Nonetheless, there is a small window of opportunity between when the last of the current eight 787-9s on order for Qantas are delivered in 2019 and the first Project Sunrise aircraft enters service in 2022 for capital allocation for new 787 orders, Horton wrote.

“Additional 787s offer substantial benefits for the new operator Qantas and original group operator Jetstar,” he concluded.

One of those tasked with maximising the benefits that the 787 brings to “new operator” Qantas is Phillip Capps, head of customer product and service development. As such Capps had carriage for designing the Qantas 787’s cabin configuration.

“For us the challenge was a multiple one, was to really get the configuration right so we need to get a mix of the different cabins that maximises our profit,” Capps said in an interview during VH-ZNA’s delivery flight.



“Once we’re clear on that then a big consideration was to try and fit as many seats in while still delivering on the core elements the customers need, so space, privacy, seat width, seat comfort and it ends up being quite a mathematical process to try and optimise both of those different profit maximising and also customer elements.”

✦ Qantas is configuring its 787-9s to seat 42 in business class (top), 28 in premium economy (middle) and 166 in economy (above). QANTAS

The configuration Qantas landed upon to maximise profitability was a premium-heavy 236-seat layout, seating 42 in business class in a 1-2-1 configuration offering direct aisle access for every passenger, 28 in premium economy laid out 2-3-2 across and 166 in economy in a 3-3-3 layout with 32in seat pitch and 17.2in seat width.

“Then the other really big important thing for us was to minimise weight and so we’ve looked at everything from seat structures through to seat cushioning, the materials we make the seat out of and the fabrics on the backs to the leathers on the headrest, the style of seat belts ... the type of lift flaps, sort of seat belt mechanisms that we use, to maximise safety but also minimise weight.”

Weight is critical in any aircraft design, but especially so when you’re planning to operate nonstop between Australia and the UK.

“The target that we had across all the different areas that have worked on the aircraft was to make sure that we could operate maximum passenger load ... Perth to London and also Melbourne to Dallas non-stop, Melbourne to Dallas being a route that we don’t currently fly but we could theoretically in the future. I want to make sure that we’re future-proofed for that.”

Indeed in many ways the 787 itself, and what follows it under Project Sunrise, are about future-proofing Qantas’s international operations.

As Qantas looks to its future it is clearly planning to go the distance. **A**



The focus for the first 12 months has been operational test and evaluation.

WGCDR DAVE TITHERIDGE

The Royal Australian Air Force's maritime warfare capabilities are undergoing generational change with the introduction into service of Boeing's P-8A Poseidon.

Named for the Greek god of the sea, and based on Boeing's ubiquitous 737 commercial airliner, the P-8A is replacing the much-loved and much-upgraded AP-3C Orion as the RAAF's primary maritime warfare asset. The first five of an eventual planned fleet

of 15 P-8As are now in service with the RAAF's 11 Squadron, based at RAAF Base Edinburgh, which is on a path towards achieving initial operating capability (IOC) with the aircraft in early 2018.

It is a time of transformation for 11 Squadron and its parent wing, 92 Wing, which also comprises 10 Squadron, which will operate the AP-3C through until the end of 2018, and 292 Squadron, which is soon to take on the P-8A aircrew training role.

Not only does the P-8 represent a generational change in capabilities, its entry into service comes at a time when the RAAF is looking to renew its focus on anti-submarine warfare after more than a decade where overland ISR in the Middle East and border protection surveillance as part of Operation Resolute has been 92 Wing's primary focus.

Almost a year on from the milestone of the first aircraft's delivery, 11 Squadron now has five of the 12

GOD OF THE SEA

11 Squadron introduces the P-8A Poseidon into RAAF service

WRITER: GERARD FRAWLEY



P-8s on order for the RAAF in service, with deliveries continuing through to 2022. (A further batch of three is slated to be acquired for service entry in the late 2020s, according to Defence's current capability acquisition roadmap, the Integrated Investment Program.) The unit has conducted a number of operational test and evaluation tasks, and the P-8 has deployed to Malaysia, Singapore, completed its first Operation Resolute rotation, and participated in its first multinational exercise,

Talisman Saber.

"The focus for the first 12 months has been operational test and evaluation (OT&E) of the platform," 11 Squadron commanding officer Wing Commander David Titheridge tells *Australian Aviation*.

"We bought a tested product from the US, but there are role and environment differences operating in Australia."

Some of the environment differences related to flying the aircraft in Australia

compared to the US. RAAF crews have been training on the P-8 at US Naval Air Station Jacksonville, Florida since early 2015 (first on USN aircraft, ahead of the first RAAF P-8, A47-001, being delivered to Jacksonville – or 'Jax' – in late September 2016). Most US airspace is radar-controlled for example, unlike much of Australia.

Another key difference is maintenance support from remote operating locations.

"When we deploy to operate out

➤ The RAAF's first P-8A, A47-001, arrived in Australia in November 2016. DEFENCE



of forward operating bases, such as RAAF Learmonth, or RAAF Curtin, or RAAF Scherger, it's a very different concept to the Americans when they're deployed, because they go to Kadena (Japan) and fully-established, functional bases with mature supply lines.

"So, the OT&E was about operating in our environment. It was about picking up any differences in the training from what we received in the US. And it was about how can we ensure that from the maintenance, as well as a logistics and supply perspective, we can function effectively prior to initial operating capability being declared because once that happens then it will be a case of, 'right, go and do Resolute, go and operate in the South China Sea and so on.'"

11SQN is working towards achieving IOC early in 2018.

"Effectively come January next year, we'll have four crews, we'll have five aircraft, we'll have enough maintainers to generate a level of mission assurance for a limited period of time," says WGCDR Titheridge.

"But there's also the unwritten aspects to IOC, which are, do we think we're mature enough in terms of experience? Our publications, for example, is this system at the right level to meet that gate? We're on track for that, which is good."

Central to achieving IOC is maturing the logistics and sustainment systems to support the aircraft.

"Every day we're learning about the complexity of our logistics priority, our support and our sustainment. That's probably where the most learning is happening."

Transferring all AP-3C operations to 10SQN has allowed 11SQN to focus on introducing the P-8A into service. DEFENCE

“There's also the unwritten aspects to IOC ... do we think we're mature enough in terms of experience?**”**

WGCDR DAVE TITHERIDGE

And key events such as the participation in Talisman Saber and the Butterworth and Resolute deployments have helped the unit build experience in operating the aircraft, and supporting it away from home base.

"We deployed to the South China Sea in May, in support of Operation Gateway," recalls WGCDR Titheridge of the first international deployment by a RAAF P-8.

"The focus was, can we effectively operate in that environment? What are the differences in the data we collect, getting it off the aircraft and, you know, can we operate from that runway with a bigger jet, and a short runway, compared to what we were used to on the P-3? And that was very successful."

Then the deployment of a P-8 to take part in Talisman Saber proved "another good test".

"That was for about five weeks in July up in Townsville. And that was a fantastic opportunity to test the aircraft in its core roles of anti-submarine warfare and anti-surface warfare."

But, says the 11SQN CO, "it was less about training for those roles, or testing the aircraft's capabilities in those roles, because that was a given. It was more about, instead of sending a maintenance workforce of 34 to cover off in a day shift and a night shift, what about 12? What about six for day and six for night? How does that work with a modern aircraft? And what sort of rate of effort can we sustain with one jet? How does that allow us to do more concurrent tasks?"

Talisman Saber also saw the RAAF successfully deploy a mobile tactical operations centre, or MTOC, which

allows the full capabilities of the P-8 to be exploited.

"We set it up in a series of four high-tech tents which allowed all the mission planning, mission support, communication with the aircraft, as well as the post-mission analysis and dissemination of data."

An MTOC isn't necessary for lower intensity, less "dynamic" operations like Operation Gateway missions, where mission planning can largely be completed before the aircraft leaves Edinburgh.

"Not having an MTOC is fine for the maritime intelligence surveillance reconnaissance role. The more high-end roles, like a Talisman Saber, those sorts of deployments you're best off having that support. Not just for tailoring mission media for the task, but also when you get home, if you want to do that deep analysis on the acoustic data that you've collected against submarines, or ships. That requires an MTOC to do the analysis on that, and then pass it off to the different agencies that receive the data."

A permanent tactical operations centre (TOC) for the P-8 has been established at Edinburgh, with a second permanent TOC to be located at RAAF Base Darwin. A second mobile TOC is also being acquired, this one containerised and able to be deployed by C-17 airlifter.

Another key enabler to help realise the P-8's full potential, and full operational capability (FOC), are the four simulators due to come online at Edinburgh next year, two full-flight simulators for the pilots and two mission simulators for the 'back-end'

crew. The simulators, which can be linked together, will be operated by 292 Squadron (the current Orion aircrew training squadron), and will significantly simplify the P-8 training pipeline.

“For the last 12 months, we haven’t had any simulators to train on, so we’ve been sending people back to the United States every six months [for currency training], and across to the E-7 [Wedgetail] sim every three months for the pilots. The E-7 is a like platform from a performance perspective – it’s a bit different at the front, but it’s similar enough that we can do some of the emergency training.”

Not having easy access to simulators has been a “significant drain on our limited instructor resources”, WGCDR Titheridge notes.

Nonetheless, while not having access to a local simulator has strained resources, overall the P-8 introduction into service has been well resourced and well planned from a personnel perspective, thanks in part to the RAAF’s extensive experience in bringing new aircraft and capabilities into service over the past decade.

“The reason we’ve been so successful in bringing the aircraft in, is because of the maintenance workforce. So, 50 per cent of my maintenance team came from a P-3 background and the other 50 per cent were there when the Super Hornet, the C-17, the E-7 turned up. So, it’s those guys who’ve seen the dangers of doing things the old way, but also the dangers of everything being new,” says WGCDR Titheridge.

“And while we bought a tested system, some things are lost in translation. I think that’s been our biggest strength, is how we’ve moved our technical workforce around to make sure that we’re keeping the aircraft and the crews that fly them safe.”

Having a mix of backgrounds and experiences also applies to the aircrew as well.

The CO himself was an “early pick” to lead the squadron, selected in 2015 so he could undergo P-8 conversion training in the US in 2016 before assuming command of 11SQN as it brought the aircraft into service late that year.

“Last year was about me training, and because I was on the first push, I was there learning alongside the instructors. So, I’ve got the background in some of the issues,” says WGCDR Titheridge, who has over 4,000 hours of experience flying and instructing on

the AP-3C and a tour instructing ADF ab initio student pilots at the Basic Flying Training School (BFTS) at Tamworth.

That instructor experience also helps the squadron and wing mitigate any risks of introducing the P-8 into service without easy access to simulators, reflects WGCDR Titheridge’s boss, officer commanding (OC) 92 Wing Group Captain Darren Goldie.

“As always, there’s all sorts of levels in project planning. But there’s always those informal aspects, too. We think about, what are our real risks? Introducing a new twin-engined jet to a four-engined propeller workforce introduces a range of potential flying risks. And the biggest thing that could go wrong in the next couple of years would be a fundamental mistake from a pilot, to do with automation,” GPCAPT Goldie tells *Australian Aviation*.

“The first CO needs to be really alert and aware of that risk, before we start to shift the focus to understanding how the system fights and drawing on the weapons experience the ACO (Air Combat Officer) workforce brings.” That is for the future, but for now GPCAPT Goldie is certainly happy with how the P-8 transition is progressing to date.

“I think if we went back five years and looked at where we would hope to be sitting in mid-2017, or late-2017, I think it’s as good as it could be,” he says.

“The P-8 is obviously proven, to a certain extent, with the United States Navy, and it’s transferral to our configuration, role, and environment has been smooth. And our test and evaluation across the different mission types hasn’t given us any surprises on the down side.

“Then in terms of the big things, the other inputs to capability like facilities and training equipment, they’re all on schedule, which is great.”

One key to maintaining schedule integrity was transferring almost all



CO 11SQN WGCDR Dave ‘Tithi’ Titheridge. PAUL SADLER

the RAAF’s maritime surveillance load to 10 Squadron, which is continuing to operate the AP-3C, for a two-year period while 11SQN focuses on introducing the P-8A into service.

“The recent deployment of a P-3 on operations in Marawi Province in the Southern Philippines has reminded us that operations come when they come, and you don’t have control over that. And it’s our job to be ready. And if we didn’t have a P-3, and we were forced to deploy the P-8 in the middle of our test and evaluation, then the program would, despite the billions of dollars, end up right of schedule. There was no way around it. Whereas, this is giving us the ability to slowly grow that.”

And despite having the P-8 on the flightline, organisational discipline is required to avoid over-committing the aircraft too early in its service career.

“A lot of the patience is seeing the platform, understanding what it could do, but just trying to hold the desire to get it out the door flying, and let it run through its test, let it run through crew development. Because that will pay dividends in three or five years’ time,” GPCAPT Goldie notes.

Managing the transition from the P-3 to the P-8 then, is a delicate balancing act.

“The capability withdrawal of the P-3 steps down in six-monthly increments in part to align with careers. At the same time the P-8 is stepping up loosely in six-monthly increments, based on conversion courses. Where they cross over is around April next year, depending on your measure, and there’s so many different ways to measure it.”

On current planning six AP-3Cs will be in service when the type retires in late 2018, while final operating capability (FOC) for the P-8A is planned for when 12 aircraft are in service and 12 crews are trained.

“That’s tied to getting the final jets, and getting the final crews up and running,” WGCDR Titheridge explains.

Two of the five P-8s now on strength at 11SQN on the ramp at RAAF Base Edinburgh.

GERARD FRAWLEY





“But, probably the bigger milestone prior to FOC is where we need to be when the P-3 planned withdrawal date hits, which is the end of next year when the P-3 stops flying.”

Achieving key capability milestones will be important from here.

“Between January and December next year is when we need to have developed a competency across all roles, particularly those more advanced, traditional roles for maritime strike, such as ASW and anti-surface warfare.”

The P-8’s entry into service coincides with the anti-submarine warfare (ASW) mission increasing in importance to the ADF, and ASW, along with maritime strike, was a core mission requirement for the aircraft as specified by the US Navy. Whereas the P-3 in RAAF service has been something of a jack-of-all-trades carrying out overland and maritime ISR and search and rescue roles as well. Further, the USN plans to soon complement the P-8 with the unmanned MQ-4C Triton for the maritime ISR role, but that platform won’t enter RAAF service until mid next decade.

“At the moment, the P-8 is very much designed for anti-submarine warfare and anti-surface warfare, and is less the strategic ISR platform that the organisation is used to in the P-3. Nonetheless, the sensors that are part of those two core roles give it great utility in the Resolute space and in the Gateway space,” says WGCDR Titheridge.

“And over the next three years as we move towards increment three, which brings a whole range of other capabilities, such as network-enabled

Initially the P-8 is being delivered with five operator stations on the ‘rac’ rail, but a sixth station will be added.

PAUL SADLER

weapons and high-altitude anti-submarine warfare, some of the other sensor upgrades that happen as part of that process will lend itself to even better strategic ISR.”

In time Triton would take on much of the P-8’s maritime ISR work, allowing it to focus more on maritime strike and ASW. But even as the P-8 prepares to assume the P-3’s maritime surveillance burden, training for high-end warfighting will be increasingly important.

“Sticking with that emphasis, and the systems that support it, as we introduce Triton will be pretty important. If we just revert and commit 90 per cent of our effort to maritime ISR, we won’t be postured correctly when Triton comes along.”

At the wing level much thought has already been put into planning for the Triton’s eventual arrival.

“Whenever we think about a future P-8 force, we’ve got to think about its interaction as part of the family of systems with Triton. And therefore, acknowledging the roles that Triton’s going to be far better than a P-8 at,” says GPCAPT Goldie.

“Once our Tritons are there, spinning around Australia, giving awareness, and they’re up located up in South-East Asia doing whatever the hotspot is of the day, once that’s all taken care of, well, now, what is that response?”

“So, you’ve got the persistence with the Triton, and the response with the P-8. But less that immediacy of response. Not a ‘leaving-in-an-hour’ response, but the response to the changing strategic environment. Let’s go and put a handful of P-8s in another

nation. Come up with some sort of basing arrangement. And then there can be 24-hour submarine surveillance over a particular strait, or a particular part of the world.

“We don’t really have that at the moment.”

But in the here and now, P-8s are on the ramp at Edinburgh, and comparisons with the much-loved, and much-understood, P-3 are inevitable.

“We have nearly 50 years of people understanding what a P-3 can do. And it’s really hard to explain to someone, the P-8 offers all of this, but you need to use a traditional set of metrics, in fact, in some areas it’s more limiting. And a good example would be runways. So, a P-3 can obviously operate into a far shorter runway, a P-8 is a big, heavy 190,000 pound 737. It needs a huge runway.

“So, by some measures it seems more limiting, but by more progressive measures such as connectivity, it is far, far in advance.”

WGCDR Titheridge says the P-8’s speed and ability to process information are some of the key performance improvements it brings compared to the AP-3C.

“I think it’s the speed at which you can get information on the aircraft, move it around the mission crew stations, and use that to re-tailor what you’re doing in the mission – whether it’s collecting or prosecuting a submarine – and then get that information off the aircraft to the operational decision-maker, is significantly enhanced.”

The P-8’s ASW capabilities are certainly significantly enhanced.

“Whether it’s 50 per cent more sonar buoys, advanced ASW weapons, or four times the processing power. Therefore, the system gives you better integrity in the way it tracks. It’s got more automation to ensure that the sonar buoys you have in the water are actually where they’re meant to be, so it’s less labour intensive to ensure that the picture you’re looking at is accurate for ocean drift, and a range of other factors,” WGCDR Titheridge says.

“Not having as many sonar buoys you can monitor and the veracity of the plot dictated a lot of how we did operations on P-3. With this aircraft, you can really stand-off, and that automation of the system does a hell of a lot for you. So, of all the roles, the easiest to learn how to do in this aircraft has been ASW because of this automation.”

“You’ve got the persistence with the Triton, and the response with the P-8.”

GPCAPT DARREN GOLDIE

Automation is a common theme when talking to 11SQN personnel about their new jet.

“Connectivity’s probably the main game that we have just off the bat. So, the comm suite’s fairly extensive, being able to send Link 16 and other real-time data back to home plate is a big game-changer for us,” P-8 tacco (tactical coordinator) Flight Lieutenant Michael Cuthbert says in comparing the P-8 to the P-3.

“The integration that we’ve got off the aircraft, back home and to other platforms, is outstanding. We can send stuff off in very near real-time. It takes away any vagaries [of voice communications] over a radio. You can send imagery and give someone a really quick snap in as to what’s going on.”

Another advantage is the P-8’s ability to process and filter data.

“It comes down to filtering. So there’s a lot of information there. You could very easily become overwhelmed, but if you want to focus on what you’re doing, you’ve got the ability to filter out just about everything. So, you can just tell the system, ‘Don’t put this on my screen’. So, that would mean that one guy might be displaying territorial waters but the rest of the crew won’t because that would be just clogging up their screen.”

Automation also means there is more flexibility in how the P-8 can be operated by its crews.

“The P-8 has currently got five workstations and they’re all flexible. You can sit anyone anywhere and they can do all of the roles from that seat,” explains FLTLT Cuthbert. “If we’re doing ASW, the tacco can sit with his acoustic operators and it’s much easier to interact. If we’re doing anti-surface he can sit with the radar and the EO (electro-optics) operator and keep an eye on what’s going on.”

As on the P-3, the tacco on the P-8 serves as the flight’s mission commander, leading a back-end crew of typically seven, which also comprises a co-tacco and five airborne electronic analysts – AEAs – comprising acoustic warfare officers (AWOs) who also look after the electro-optics (the retractable high definition camera mounted in the aircraft’s nose), and electronic warfare officers (EWOs) who operate the radar.

“Given the attention to detail that’s required when focusing on a sensor over an extended period of time, say a 10-hour sortie, we rotate the operators through seats. So, we always have a

spare operator to rotate through, to give guys a break,” notes FLTLT Cuthbert.

“We also need guys available to go down the back and load the rotary launchers if we’re spitting sono buoys.”

As a workplace the P-8 is also a much more comfortable, less fatiguing environment, by virtue of it being a more modern airframe, and the fact that it flies at higher altitudes than the P-3.

“It’s very smooth, the climb rate is incredible, it’s faster, noise cancelling headphones, there’s all the ergonomic things that have made it a lot more comfortable, which is a bonus.

You’d expect that it’s a quantum leap forward from the old turboprop P-3s,” says Warrant Officer Col Renton, an acoustics warfare officer.

Not everything about the P-8A is an advance on the AP-3C, with the upgraded Orion’s radar offering more automation, for example. But that reflects the USN’s initial emphasis on ASW, and the RAAF’s newly-delivered fifth aircraft, which arrived in mid-November, features upgraded radar processing, one of the upgrades under the US Navy’s ‘increment’ upgrade path.

But for ASW the P-8 offers more automation and is more user-friendly, says WOFF Renton.

“Being biased, being an acoustics

“
It’s very smooth, the climb rate is incredible, it’s faster.

WOFF COL RENTON

11SQN personnel load a Mk 54 training torpedo into a P-8’s weapons bay. DEFENCE



In the search and rescue role the P-8 can drop a UNI-PAC II store, which includes a single life raft, a reverse-osmosis pump, water and a radio, from its internal weapons bay. DEFENCE



operator, it is an ASW platform, so I think the US Navy really modelled it on tracking submarines as their primary means. So, from that perspective, it’s great, we love it.”

11SQN was able to put the P-8’s ability to track submarines to the test at Talisman Saber earlier this year.

“Talisman Saber was great for working with coalition nations. It’s busy, working radios, testing tactics, warships everywhere, simulating scenarios, so that was good. And, to actually drop buoys for real, and monitor the buoys, and go through that process, hoping to get a sniff of a submarine and prosecute, that’s gold for us.”

The P-8 also represents generational change for 11SQN’s maintenance personnel, combining the airframe reliability of the commercial 737 with an advanced mission system.

“It’s challenging, it’s new, it still has the new car smell,” notes 11SQN avionics technician Sergeant Marty George. “There’s big shifts in concepts of maintenance compared to how people have previously done maintenance in 11 Squadron and in the Air Force even, just due to its reliability and having less people to get the same job done.”

The P-8 requires fewer aircraft technicians (‘black handers’), but its complexity lies in its advanced mission system.

“The ‘green’ stuff that keeps it flying is pretty reliable,” says SGT George.

But, “a mission system’s a mission system, I don’t think it matters what platform it goes in, it’s probably going to have the same sorts of issues,” he says.

“It still breaks and we still use the same troubleshooting techniques, we just don’t have to use them as often. And like an older plane you get the curve balls a bit more.”

This time it's personal

Singapore Airlines' new cabin products highlight the carrier's commitment to its premium passengers and are the latest example of the carrier's willingness to embrace new ideas

WRITER: JORDAN CHONG



SIA flies the Airbus A380 on 12 routes, including to Sydney and Melbourne.

BOB FINLAYSON

Singapore Airlines' (SIA) US\$850 million investment to upgrade its Airbus A380 on-board products represents the carrier's latest salvo in the battle for supremacy in the skies and a timely improvement in the operating economics of the world's largest passenger aircraft.

Unveiled in Singapore in early November under the tagline "Space made personal, experience the difference", the updated cabins are aimed to reinforce SIA's standing as one of the world's leading full-service premium carriers.

The outcome of four years of design work and many hours of passenger feedback was highlighted by an enlarged first class Suite and a ground-up design new business class seat that does away with the flip-over bed, alongside improvements to the passenger experience in both premium economy and economy.

Beyond the headlines about leather seats that swivel up to 270 degrees in Suites, double beds in business class and a more personalised inflight entertainment system, the revamped A380 is also another example of SIA's willingness to think differently and embrace new ideas under chief executive Goh Choon Phong.

First, let's look at the details of what will be flying on the Singapore-Sydney route from the second half of December.

NEW CONCEPT FOR SUITES AND BUSINESS

The new fully-enclosed A380 Suites feature a separate fully flat bed, a leather seat that swivels up to 270 degrees, as well as adjustable mood lighting, a credenza with plenty of storage spaces, a 32in HD monitor and companion tablet.

The number of suites, which were designed by Pierrejean Design Studio and manufactured by Zodiac Seats UK, has been halved from 12 to six and the cabin moved to the upper deck of the A380.

Goh said the thinking behind the reduction in number of suites was a combination of wanting to give more space to customers – each individual suite has increased from about 2.8m² to about 4.6m² – and is based on "what we see as the demand pattern for A380 suites".

Just behind Suites on the upper deck is business class, where SIA has maintained its forward-facing 1-2-1 configuration for the 78-seat



Of the six suites, 1A and 2A, as well as 1F and 2F, can be converted into a double bed for passengers travelling together. Seats 3A and 3F are single suites. ANDREW WEST/SIA



cabin which offers every passenger unobstructed access to the aisle.

However, there have been some new elements introduced in what is a seat designed by JPA Design of the UK and manufactured by Japanese firm JAMCO Corporation, whose relationship with SIA stretches back close to four decades beginning with the supply of galleys and expanding into seats (including SIA's current Airbus A350-900 business class seat) about 10 years ago.

The biggest change is instead of passengers flipping over the seat to sleep – as is now the case – it reclines from an upright position to form the bed. A mattress topper is supplied, as well as a duvet. This design will offer passengers more reclining options when the seat is in upright mode. There is also a small fold-down arm rest on the inside of the seat.

Further, the use of carbon composite

materials has enabled the seat structure to be thinner, which has created enough space to store a roller bag in the seat area rather than in an overhead locker.

And couples travelling together in business class will be able to book a pair of middle seats that convert to a double bed. For solo travellers seated side-by-side in the middle seats, SIA has designed a new privacy screen that is certified to be fully deployed, at halfway, or completely retracted during all phases of flight including taxi, takeoff and landing.

"Many of our customers are telling us that when they travel, especially on business class, they would rather not have to lift the bag up and put it on top. They would rather have it close by," Goh explained.

Jamco Corporation chief technology officer Toshihisa Kasuya said finding a way to give passengers more space despite having to fit more seats in the available space was one of the challenges of the project.

The new business class bed is one-inch shorter at 78in, from 79in on the current product, and narrower at 25in compared with 28in. The seat pitch – the industry measure from one point on the seat to the same point in front – has also been trimmed slightly to 50in, from 51in.

"The seat pitch has been reduced but the same space has been provided. That was a challenge," Kasuya said at the official launch event.

Kasuya said there was also a lot of testing to ensure the padding of the seat

“Carbon composite materials has enabled the seat structure to be thinner.”

was comfortable for both sleeping and sitting.

“We have to design to fit both, comfortable for the seat and comfortable for the bed. We tried several different types of cushions and combinations of cushions.”

Some have quibbled at the lack of onboard amenities that feature on the A380s on other airlines such as bars, showers or even a duty free gallery.

In response, SIA senior vice president for products and services Marvin Tan said this latest iteration of SIA’s A380 cabin was the result of its customer research, where passengers rated factors such as the quality of the cabin crew ahead of these other features.

“It’s a bit of a tradeoff because on the one hand you have customers who say this is what they like but on the other hand you have customers say your crew give fantastic service and I don’t need that,” Tan explained when asked about the lack of a bar for passengers in business and Suites.

“It takes up space. I’d rather have a space to store my laptop, my iPad, my tablets etc.

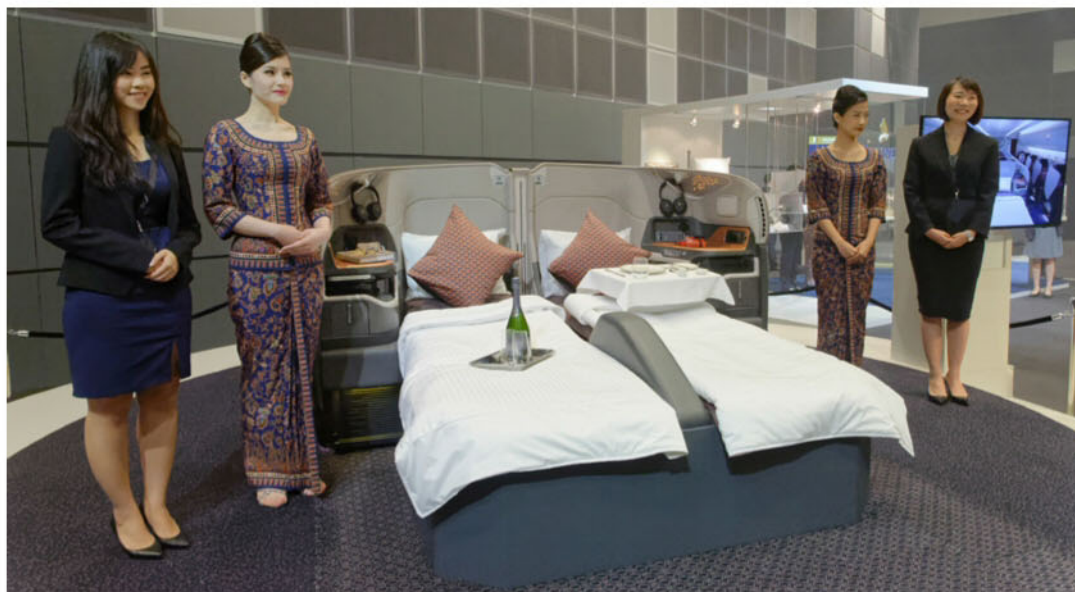
“We feel that because we are very confident about our cabin crew service in terms of anything that is food and beverage related we should let our crew do the hard work for our premium passengers.”

While suites and business class are on the upper deck, the lower deck will feature premium economy between Doors 1 and 2, with economy stretching from Door 2 through to the tail.

SIA will offer passengers in these two cabins, as well as those in business and suites, an enhanced inflight entertainment system “mykrisworld”, where members of the airline’s frequent flyer program Krisflyer will be able to “bookmark” where they finished watching one movie at the end of a flight in order to pick up from where they left off on their next flight.

Further, economy class passengers will have a touchscreen IFE monitor that eliminates the need for a separate handset. The monitor is also larger than what is flying on SIA’s A380s currently at 11.1in, compared with 10.6in. The seats, designed and built by Recaro, also have a six-way headrest that offers more neck support.

“Of course, we recognise to be competitive in the market there are certain space limitations that we have to work with to enable seat density but there are a lot of other areas of the product you can invest,” Tan said.



Premium economy is the only seat that will be the same on both the new and old A380 layout. It was manufactured by ZIM Flugsitz GmbH and customised by JPA Design.

FUTURE-PROOFING AT PLAY WITH NFC READER

SIA has also installed a near-field communicator (NFC) reader at all seats.

The technology will not be utilised when flights commence on December 18 between Sydney and Singapore. Instead, the airline is still mulling what is the best use for what is becoming an increasingly common form of contactless communication.

“We really don’t have a very concrete plan yet on what we want to use it for,” Tan said.

“Syncing, data transfer, things like that can be part of the functionality. But again, in those areas, it’s all just concepts, ideas, plans at this point in time.

“It takes a lot of time and it can be quite costly to do work on the plane. Once it starts flying, that’s it, you lose the opportunity unless you want to ground the plane which is not the best thing to do, so some of these decisions we have to make slightly ahead of the curve in a way.”

CHANGES MEAN CONSISTENT A380 CONFIGURATION

This new A380 configuration of 471 seats comprising six in Suites, 78 in business, 44 in premium economy and 343 in economy will appear on five new aircraft that were due to be delivered between November and the end of 2018. These five aircraft are replacing five A380s being returned to lessors.



● SIA has managed to fit more business class seats on its reconfigured A380s thanks to a more efficient design that eliminates the flip-down bed. It has also enabled those travelling together in business to have a double bed. ANDREW WEST/SIA

And the 471-seat configuration will also be retrofitted to 14 A380s, with the program starting in late 2018 and due to be completed in 2020.

This represents a capacity increase of between seven per cent and 24 per cent from SIA’s two A380 configurations currently flying.

SIA plans to maintain its fleet of A380s at 19 aircraft. However, it will operate with a reduced A380 fleet until 2020 as older aircraft are returned to lessors, new aircraft arrive and others head to the workshop for reconfiguration into the new layout.

At press time, SIA had eight A380s with 379 seats (12 Suites, 86 business, 36 premium economy and 245 economy) and nine with 441 seats (12 suites, 60 business, 36 premium economy and 333 economy).

The airline expects to have two A380s in the new 471-seat layout by the end of calendar 2017, while three of the five aircraft earmarked for withdrawal will have gone.

Chief analyst at aviation thinktank CAPA – Centre for Aviation Brendan Sobie said the move to add more seats should enable SIA to grow capacity, or available seat kilometres (ASK), and

“
This is really
just the
beginning.”

GOH CHOON PHONG

help improve the profitability of its A380 operations.

“SIA is obviously hoping the higher revenues generated by the A380 fleet offset the A380’s relatively high operating costs and the investments in the new products,” Sobie said in a research note dated November 6.

“SIA’s A380 operation should generate 14 per cent more available seat kilometres (ASK) once the retrofits are completed, driving a two per cent to three per cent increase in total ASKs for SIA.

“While this may not seem significant it will enable SIA to resume capacity growth after a period of capacity reductions.”

SIA’s A380s operate on 12 routes. While most are year-round, some destinations such as Melbourne, Osaka Kansai and Auckland are seasonal.

Further, there are a number of routes – Sydney and London Heathrow are two examples – that feature both the 379-seat and 441-seat variants.

Sobie said having one 471-seat layout across the entire fleet of A380s made sense given a fleet of just 19 aircraft.

Further, the new A380 layout was “much more efficient” than what is on board currently.

“Splitting the A380 fleet into two configurations has created challenges for SIA, particularly during periods of heavy maintenance and unexpected service disruptions,” Sobie said.

“The new cabin products on the A380 fleet reinforce SIA’s premium position and enable the airline to continue offering among the best premium products in the industry despite intensifying competition.

“However, the products are also practical and efficient, enabling SIA to make better use of space at a time profits are increasingly coming under pressure.”

Sensible though it may be, routes such as Singapore-Zurich and Singapore-Frankfurt-New York JFK will experience an increase in economy seats of about 40 per cent as they transition from 379-seat A380s to the new configuration.

Goh said the 379-seat layout was the result of “incremental changes in the cabin” such as the addition of premium economy and described the configuration as “not quite ideal”.

“It wasn’t optimised across the fleet so if you ask me, that was actually undersized,” Goh said.



➊ Economy class features an 11.1in touchscreen IFE monitor that removes the need for a separate handset. Note the rectangular NFC reader on the left side just above the table. ANDREW WEST/SIA

SIA MAKES PROGRESS ON TRANSFORMATION

The A380 cabin upgrades come at a time where SIA, and others, continue to battle the rapid international expansion of Chinese airlines and the ongoing threat from Middle East carriers offering long-haul to long-haul connections through their hubs which have bitten into previously lucrative markets. And in Asia, low-cost carriers (LCC) have won passengers happy to pay lower fares for a no-frills product on short- and medium-haul routes.

As part of efforts to adapt to this new environment, SIA established Scoot to capture a slice of the growing low-cost long-haul market. Scoot recently merged with short-haul LCC Tigerair Singapore and the combined entity now operates under the Scoot brand.

And earlier in 2017, SIA said it had established a transformation office to conduct a wide-ranging review of the airline group’s network, fleet, product and service, as well as organisational structure and processes.

While it is still early days, there are signs the Star Alliance member may be weathering the storm, with net profit for the six months to September 30 2017 up 32 per cent at S\$425 million (A\$407 million), compared with S\$321.5 million in the prior corresponding period.

The result was boosted by an improvement in operating profit from the Singapore Airlines operation, as well as from SIA’s cargo and engineering units.

Singapore Airlines’ revenue passenger kilometres (RPK) rose 3.4 per cent in the half, while capacity measured by available seat kilometres (ASK) eased 0.1 per cent. As a result, load factors improved 2.8 percentage points to 80.9 per cent. Yields, a measure of average airfares per

passenger, fell 1.9 per cent.

“Unfortunately, yields continue to decline,” SIA senior vice president for finance Stephen Barnes said during the company’s November 8 results briefing, according to a transcript of the presentation released to the Singapore stock exchange.

“To the extent that if there is any silver lining in that, the decline is at a slower pace than we’ve become accustomed to seeing.”

However, operating profit declined at regional wing SilkAir and low-cost carrier Scoot.

Goh said the airline’s transformation program, which involves more than 60 projects, had already achieved some early goals, including the move to a new revenue management (RM) system that has allowed the airline to be “more nimble” in its pricing.

“Some of the results are coming through, not in full yet, but some results are coming through,” Goh said.

“First time in, since 2013, we are actually seeing growth in terms of flown revenue for first half, not total revenue, but flown revenue, which is important because this is really the revenue you get from selling tickets to our customers.”

In terms of making the organisation more efficient in its day-to-day operations, Goh said the company on November 1 implemented an approvals process that required no more than three levels of review to get the final go-ahead.

“That would definitely cut down a lot of decision-making, bureaucratic processes and ensure that we are a lot more effective and prompt,” Goh said.

“This is really just the beginning,” he said of the transformation plan.

“It’s only about since May that we formally launched it. There is a lot more that we are doing.”

In terms of the outlook, SIA said in its results presentation there were still “headwinds” in the market as competitors mounted significant capacity in key markets, with yields continuing to be under pressure, despite some stabilisation in recent months.

“It’s fair to say that going forward, we are still seeing the demand, but we are also seeing more capacity being added,” Goh said at the results briefing.

“How that is going to balance out is something that we have to watch very closely, but we do now have a better tool in the form of the RM system. Plus also a more nimble organisation in response to pricing in the market.”

➋ SIA chief executive Goh Choon Phong chats with one of the 100-odd international journalists invited to the official launch in Singapore. Goh commenced as chief executive in January 2011. ANDREW WEST/SIA



OKRA

The RAAF's Air Task Group marks three years on operations in the fight against ISIS

WRITER: ANDREW MCLAUGHLIN



The ability to form and deploy the Air Task Group with two weeks' notice was an extraordinary effort.



It is now three years since the Royal Australian Air Force first deployed an Air Task Group (ATG) to the Middle East as part of Operation Okra, the ADF's contribution to an international force to oust Daesh or ISIS/ISIL from Iraq and Syria.

The government of Iraq invited Australia to participate in a US-led coalition of 10 countries, including the UK, France, Germany, Canada, Turkey, Italy, Poland and Denmark.

The first rotation of the RAAF's contribution to Operation Okra, comprising one KC-30A multi-role tanker transport (MRTT) from 33SQN, one E-7A Wedgetail airborne early warning and control (AEW&C) aircraft from 2SQN, and six F/A-18F Super Hornet fighters from 1SQN, departed Australia on September 21.

Led by AIRCDRE (now AVM) Steve Robertson, the ATG arrived at Al Minhad Air Base in the UAE two days later.

The ability to form and deploy the Air Task Group with two weeks' notice was an extraordinary effort.

"The large amount of preparation conducted to deploy such a potent and capable force in a relatively short time is testament to the professionalism and skill of our Air Force," then Chief of Air Force, AIRMSHL Geoff Brown said at the time.

Initially, about 310 personnel were assigned to support the ATG in theatre out of a total of nearly 800 assigned to the operation in total. Other elements of the Okra deployment include a Special Operations Task Group (SOTG) which conducts A3E (accompany, advise,

Members of the current RAAF Air Task Group assemble for a group photo to commemorate three years of operations. ATG Commander AIRCDRE Terry van Haren is at front. DEFENCE

assist and enable) tasks with Iraq's security forces, and Task Group Taji which is a combined Australian and New Zealand military training force based at the Taji Military Complex north-west of Baghdad.

INITIAL OPERATIONS

The RAAF ATG commenced operations on October 1 2014 when the Wedgetail and the KC-30A conducted support missions over central Iraq. The fighter force's first flight over Iraq with weapons occurred on October 5, and the first weapons employed by the RAAF were against "an ISIL facility" on October 8.

By early November, ATG aircraft had flown 144 sorties since commencing operations just five weeks earlier. Targets for the Super Hornets



during that time included command-and-control facilities, military equipment, vehicles, and logistics and training compounds.

During this time the KC-30A's reliability and large air-to-air refuelling capability was beginning to add real value to the coalition, with the single deployed aircraft having offloaded more than 2.5 million pounds of fuel to RAAF Super Hornets and coalition aircraft such as US Marine Corps AV-8B Harriers and French Dassault Rafales in the first seven weeks to November 16, 2014.

The former head of the Project AIR 5402 team (from 2007-2011) which brought the initially troubled KC-30A MRTT into RAAF service, AIRCDRE Noel Derwort, got to see the fruits of his team's labours first hand as the deputy commander of JTF633. "It was amazing to experience and see the product of everything we have done over all these years," he said in a November 2014 interview.

"Watching how the crew operated and just seeing their professionalism working with other aircraft was remarkable. The guys have done an exceptional job to make sure the aircraft is effective which is demonstrated by it being here."

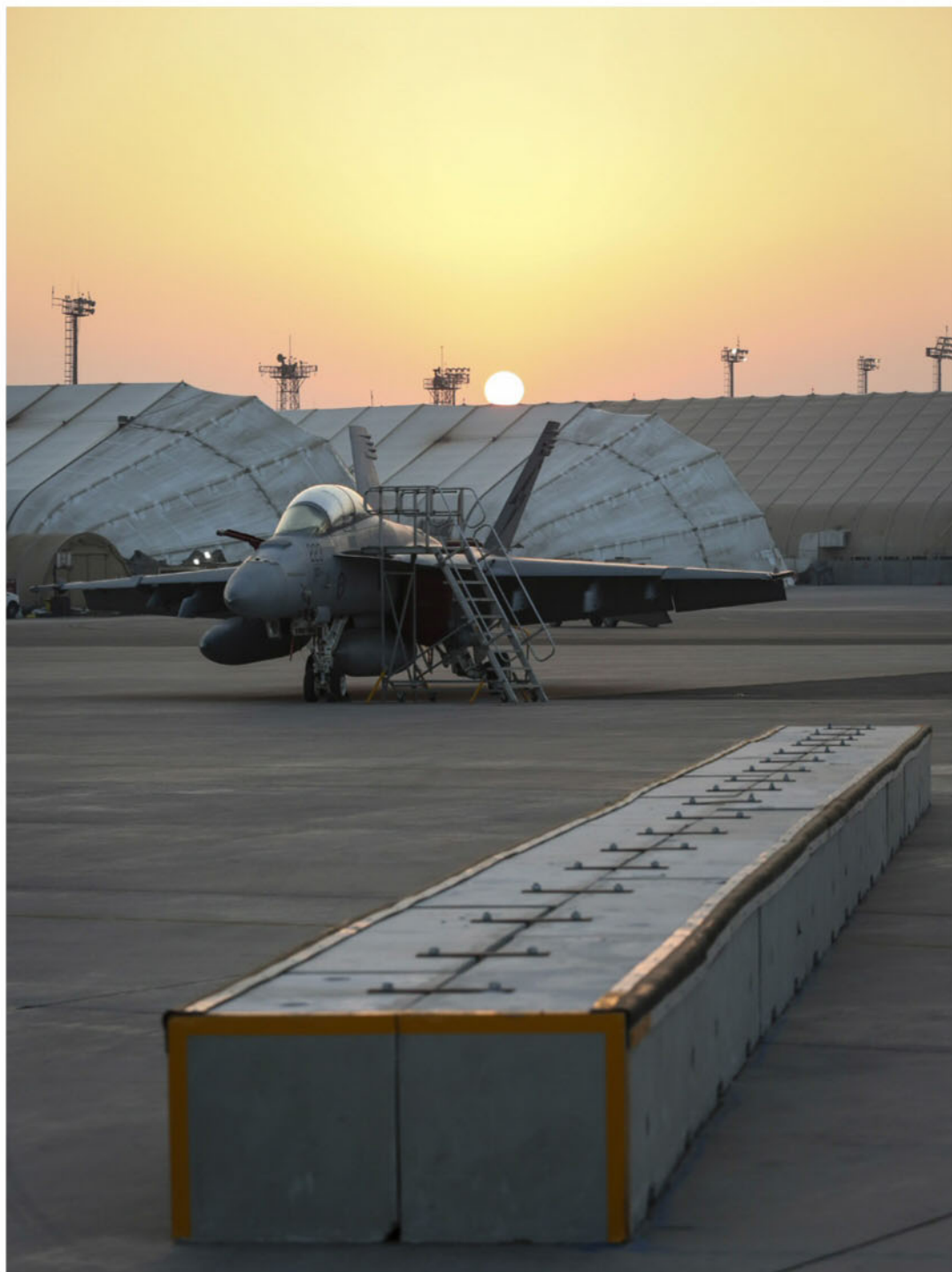
In the deployment's first three months to December 31, the Super Hornets flew 221 missions totalling 1,723 hours for an average mission length of seven hours and 48 minutes, and employed 135 precision munitions including 61 in December alone.

In the same timeframe the Wedgetail flew 53 missions totaling 624 hours for an average mission length of 11 hours and 48 minutes. The KC-30 had completed 105 missions totaling 811 hours for an average of seven hours and 42 minutes, and had offloaded an amazing 8,363,046 pounds of fuel for an average offload of 79,648 pounds per mission.

As 2015 opened, the first ATG contingent prepared to rotate out.

"You are handing over the air component in good shape for continued air strike, command-and-control and air-to-air refuelling operations into 2015," Chief of Defence Force ACM Mark Binskin said during a January 6 visit to Al Minhad.

"I believe our ATG is the best-equipped, best-trained and most-prepared air contingent Australia has ever sent on operations, and the tireless efforts and professionalism of our people is reflected in the results."



✶ Flightline maintenance at Al Minhad AB is mainly performed at night to avoid the worst of the extreme conditions. DEFENCE

The Super Hornets returned to Australia in late March 2015 and, after a transition and familiarisation period, were replaced by six classic Hornets and personnel from 75SQN.

"During the transition, having two outstanding fighter squadrons fly together in combat is a historic milestone for the RAAF," remarked the incoming ATG commander, AIRCDRE Glen Braz at the time.

The final tally of the Super Hornet's first six-month deployment stood at 418 sorties flown totalling 3,361 hours, and 278 weapons were employed.

AIRMSHL Geoff Brown remarked at the time that the plan was to rotate each of the RAAF's classic Hornet squadrons through the ATG at roughly six month intervals before the Super Hornets deployed again.

"In each of those six months they'll rotate aircrew through once so we don't lose a lot of the high-end skills," he said in an interview in the March 2015 issue of *Australian Aviation*.

"So we'll... rotate the classic Hornet squadrons through and then we'll go back to the Super Hornet. It's also to even out the hours on the jets too,



Classic Hornets taxi with 500lb GBU-54 and 1,000lb GBU-32 guided bombs on BRU-54 dual bomb racks, and Litening AT targeting pods on the centreline station 5. DEFENCE



because we are flying the jets about four times the peacetime rate.

“Strike operations are only one element of what strike fighters do,” he added. “So, while they’re getting very good at strike operations and collateral damage estimations, what atrophies over time is the pure fighter skills. So, if you leave them in theatre for three to four months, that’s almost like one of our normal training programs, and then you can bring them back so you haven’t lost any of that capability.”

Nearly three years on, the current ATG commander, AIRCDRE Terry van Haren, says the RAAF is still very conscious of efforts to avoid any potential ‘negative training’ aspects.

“This is very much a CAS and interdiction mission in a very permissive air environment,” he said. “While our doctrine is to do those types of missions in a permissive air environment, how we battle any... negative training is to keep rotating our aircrew back into the training cycles back home. In (the Middle East region)

➤ A closeup of some faded mission markings and a 75th anniversary marking on a 77SQN classic Hornet. DEFENCE

“
In training
you don’t
see Flankers,
you don’t see
Su-22s.”

AIRCDRE VAN HAREN

they’re not up against threats so they don’t have to train to those threats while they’re here, but they do that at home. Behind the scenes, Air Force is continuing to do its force generation activities so we remain prepared for the long term.”

WHO’S WHO IN THE ZOO

A major milestone for the E-7 Wedgetail, which like the KC-30 had also suffered from a prolonged and difficult development and service entry, was the achievement of final operational capability (FOC) in March 2015, a milestone no doubt expedited by the aircraft’s performance in Operation Okra.

“The E-7 has great coverage, and an ability to add to that is its air control system which is really helping the coalition navigate through the complexities of what is a congested airspace,” said AIRCDRE van Haren. “The battlespace is quite complex, and that’s not only because of our own efforts in the coalition airspace, but also because of what the Russians and the Syrians are doing in eastern Syria especially.

“The coalition is getting a lot of value out of their mission over here because you see things you don’t see in training. You don’t see Flankers, you don’t see Su-22s and all these different types of aircraft all converging and operating in what is a reasonably small battlespace. So the E-7 is not only adding a lot of value in navigating that complexity, but also the crews are getting some great exposure in looking at very complex air problems.”

With often 60 or more aircraft in the air in theatre at any one time, AIRCDRE van Haren said the Wedgetail is probably the most advanced of all AEW&C aircraft in theatre, and arguably anywhere in the world.

“The picture from the E-7 is a higher quality picture than other AWACS such as the USAF, RAF and French E-3s, and it can navigate through the picture better in terms of working out who’s who in the zoo, so to speak,” he said.

“We’re using all the systems aboard the E-7, every crew station is fully manned, and they’re all very busy using those systems to work out the picture as much as we can – who is in that picture and where they come from, and then controlling our fighters and our tankers and other coalition aircraft in what is a congested very close proximity to other forces. It’s something you could never replicate in training I would think, and we’re getting a lot of value out of it!”

EXTENSION INTO SYRIA

Almost a year after the ATG’s operations commenced, the federal government extended the mission by authorising RAAF aircraft to hit targets in Syria on September 9 2015.

At the same time the government also authorised an increase of the RAAF fighter force to eight F/A-18s to allow for sufficient redundancy for the longer missions into Syria, but this was not deemed tactically necessary.

“We are approved for up to eight aircraft at the moment,” ACM Binskin said at the time. “We do not envisage ➤



Classic v Super

• In comparing the RAAF's two frontline combat aircraft it should be noted up front that the F/A-18F Super Hornet drew upon two decades of lessons learnt on the generation older F/A-18A 'classic' Hornet, and that due to its better sensor and communications integration and low observable shaping and materials, it is more suited for high intensity operations in contested environments.

Operation Okra is not the RAAF's first operational deployment to the MER with the classic Hornet. In February 2003, 14 F/A-18As and personnel from 75SQN were augmented with personnel and aircraft drawn from other 81WG units, and successfully completed a four-month detachment at Al Udeid AB in Qatar during Operations Bastille and Falconer. These aircraft were initially tasked with the protection of unarmed 'high-value asset' aircraft such as coalition air-to-air tankers, AEW&C and Joint-STARs, but later switched to the close air support (CAS) and interdiction roles as air supremacy was gained.

But those Hornets had only been upgraded to the early AIR 5376 Hornet Upgrade (HUG) program Phase 2.1 standard, with a new combined

interrogator transponder (CIT), the APG-73 radar, and interim software upgrades. The later HUG Phase 2.2 which started in 2004 included new cockpit colour displays, a Link 16 MIDS datalink, and the joint helmet-mounted cueing system (JHMCS).

HUG 2.3 saw the addition of the ALR-67(V)3 radar warning receiver (RWR) and the IAI EL/L-8222 jammer pod to give the classic a high degree of self-protection.

Running in parallel with HUG 2.2/3 was Project AIR 5409 which saw the addition of GPS-guided weapons, the AIM-132 ASRAAM and the then latest AIM-120C5/7 AMRAAM air-to-air missiles added to the Hornet's load out, while Project AIR 5418 saw the integration of the 400km standoff JASSM land attack missile.

HUG Phase 2.4 saw the obsolete AN/AAS-38 NITE Hawk targeting pod replaced by the more advanced Litening AT pod as used by the US Marine Corps' classic Hornets, while HUG Phases 3.1 and 3.2 saw structural enhancements made to the classic Hornet's tiring airframe.

Compared to the classic, the Super Hornet's airframe is about 30 per cent larger, and its fuel capacity is similarly greater. The

Super has 11 external weapons stations to the classic's nine, and the F/A-18F is a two-seater versus the F/A-18A's single-seat. Conversely, the Super Hornet is less aerodynamic, heavier and slower than the classic.

Where the Super Hornet really excels is in its modern integrated sensor and communications suites. While its ASQ-228 ATFLIR targeting pod is not considered quite as good as the classic's Litening AT, the Super carries the AN/APG-79 AESA radar which gives it an order of magnitude greater range, targeting flexibility and system reliability than that of the classic, and a more advanced integrated electronic warfare suite. The two-crew Super also allows greater flexibility during combat, with the back-seater able to fly 'offence' by focusing solely on the sensors during CAS and interdiction mission.

"The differences between the (upgraded) classic and the Super are subtle as opposed to stark," said AIRCDRE Terry van Haren. "Both aircraft are well designed for and very capable in the role of interdiction and CAS. In terms of range and endurance, the Supers have more internal fuel so they have a little bit more endurance, so the number of revisits to the tanker are fewer. But the whole

mission is predicated on how much fuel is available from our tankers, so the difference is how many refuels the Super needs compared to the classic.

"The Super can carry more weapons because of the two extra pylons, so they'll typically carry five weapons each compared to the classic's three or four. But on the classic we have the BRU-54 (dual bomb rack) which allows it to carry two 500lb weapons on one station."

For the current operations in Iraq and Syria, both Hornet variants typically employ the GBU-38 GPS-guided or GBU-54 dual laser/GPS-guided weapons, both based on the Mark 82 500lb bomb. In the 2003 deployment, the classic Hornets employed GBU-10 2,000lb or GBU-12 500lb laser-guided weapons which required a laser spot to be trained on the target right through to impact, something which proved difficult in overcast or dusty conditions.

"Both Hornet types have very high mission completion rates, their reliability at all times has been very high, and the professionalism of all aircrew has been very highly rated," said AIRCDRE van Haren.

"They're doing a great job and doing everything very professionally." ■

that I will increase that number from six to eight, although I have the flexibility to do that depending on the tasking, and I can increase that at any time if I need to. For all intents and purposes they just take a 10-degree left turn when they go on task and end up over Syria, so there is no major change to be able to do these operations over eastern Syria.”

The first RAAF mission over Syria was conducted on September 15 by two classic Hornets which were supported by the Wedgetail and the KC-30, but no weapons were released on that mission.

“Daesh controls a large amount of territory in eastern Syria that serves as a source of recruitment and oil revenues, and as a base from which it continues to launch attacks into Iraq”, then ATG Commander AIRCDRE Stu Bellingham said.

“The Hornets were prepared for any short notice high priority tasking which could include surveillance and weapons release.”

The first RAAF strike in Syria was conducted the next day, when two Hornets identified an armoured personnel carrier that was hidden in a Daesh compound, and reported back to the CAOC via the supporting Wedgetail.

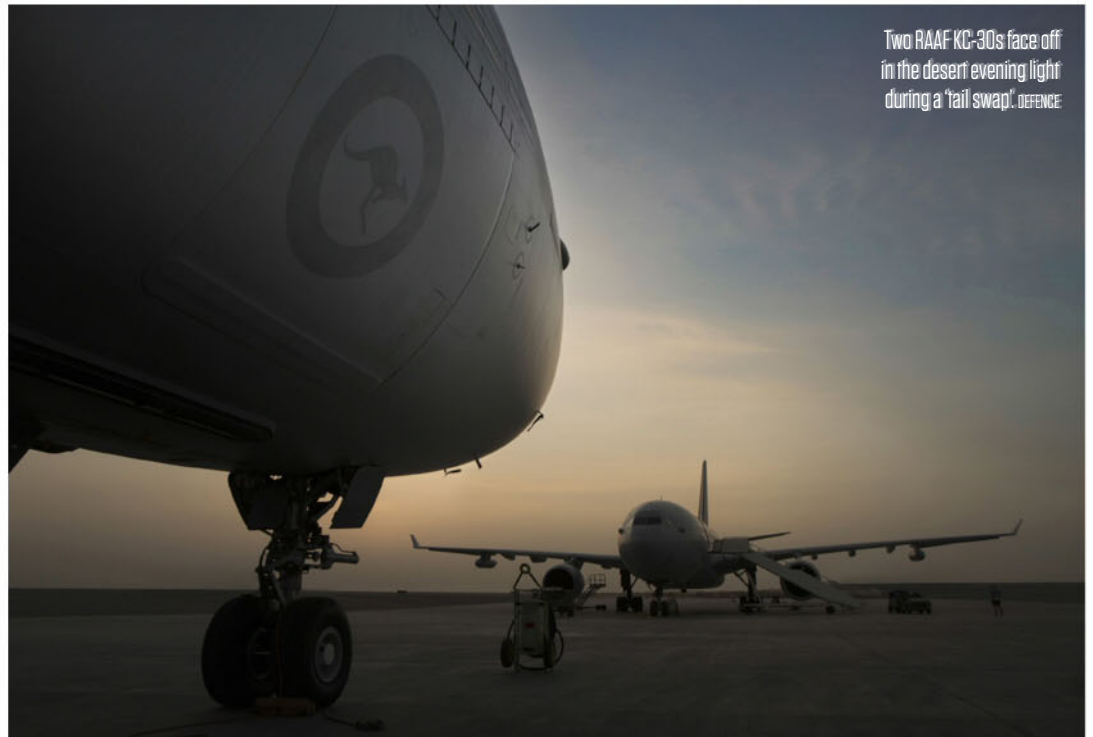
“Upon receiving authorisation to proceed, one of the Hornets employed a precision guided weapon to destroy the target,” then Defence Minister Kevin Andrews said in a September 16 update to parliament.

By the end of the first year of RAAF operations in the MER, the small ATG had recorded some impressive statistics.

A tally of the F/A-18F and F/A-18A fighter force sorties to the end of September 2015 showed they had flown a combined total of 868 combat missions totalling 6,681 hours for an average mission length of 7.7 hours, and had employed 536 weapons against Daesh targets.

In the same period, the E-7A Wedgetail had completed 143 missions including 10 missions over Syria for a total of 1,738 hours at an average mission length of 12.15 hours.

Perhaps most impressive are the figures recorded by the KC-30A. In 369 days the single deployed aircraft flew 416 missions totalling 3,287 hours for an average mission length of 7.9 hours, offloading 33,700,211 pounds of fuel to receiver aircraft, at an average of more than 81,000 pounds per mission – the rough



Two RAAF KC-30s face off in the desert evening light during a ‘tail swap’. DEFENCE



A KC-30 air refuelling operator focuses on an E-7 Wedgetail as it eases into the receiver position to take on fuel. DEFENCE

equivalent of nearly 2,000 complete classic Hornet refuels.

“The KC-30 is refuelling a whole bunch of different types of coalition aircraft nearly every day, whereas back home in our exercises they’re typically just refuelling Hornets,” said AIRCDRE van Haren.

“The KC-30 is getting a lot of variety in terms of the receiver types and getting a lot of value out of that. While there are a lot of other Hornets here with the (US) Marine Corps and carrier air groups, there are also RAF (Tornado) GR.4s, French Rafale fighters, Marine Corps EA-6Bs (Prowlers) and AV-8Bs, and quite a few boom receiver aircraft as well (including Wedgetail). Overall, there’s a lot more demand for the hose and drogue because the Americans already have a lot of boom refuellers.”

RAISE, TRAIN, SUSTAIN

Apart from the potential of negative training resulting from flying in such a permissive air environment, the RAAF is also very conscious of how such an extended deployment affects its regular ‘raise, train sustain’ cycle.

And it’s not just the eight airframes deployed, but being so far from home in a relatively harsh environment and operating such long missions requires a large number of experienced personnel, all of whom are drawn from operational units back home, some of which are in the process of relinquishing their Hornets and Super Hornets in favour of new types such as the EA-18G Growler and the F-35 Lightning II.

“Up to this point we’ve been able to navigate it because ACG (Air Combat Group) is at the start of these transitions, not amongst the middle of them,” explained AIRCDRE van Haren.

“If you look at the squadrons, over the years we’ve had four fighter squadrons all rotate through here, and a couple of the classic squadrons a couple of times. That obviously has been manageable with four squadrons, but will become more difficult I would think as we start to transition on to F-35s.

“In total there have been about 1,700 people come through the ATG in the three years, and that’s a big chunk of Air Force,” he added. “In fact you could probably say, especially in the KC-30 and E-7 crews and maintainers, ➔

some of those people are here now for their third tour – there’s a lot of ‘repeat offenders’ so to speak.”

AIRCDRE van Haren added that, for the normal operational tempo of exercises and other activities, all units have good support mechanisms in place for RAAF personnel and their families. But for extended operations such as Okra, Air Force is being a lot more proactive in the way it manages the health of deployed personnel.

“Especially for those involved in the kill chain, we have a very proactive way of managing that here,” he explained. “There are psychologists and chaplains in the task group regularly visiting the CAOC and the strike aircrew to establish a relationship and to ensure that any strains and stresses of combat are being discussed in real-time. The ADF also has processes to do screening of people going back home and then to do follow-ups with anyone who may be developing an issue.

“Obviously for the fighter force this is all fairly new for most, but the transport force and the P-3s have been doing these types of deployments to the Middle East since 2001, so it’s not completely new for Air Force,” he continued.

“There’s actually a very long history of looking after the air mobility and SRG forces, but it’s a bit newer for the fighter guys. There’s a concerted effort in Air Force to try to get the balance right so we’ll keep our rotations relatively short, so 12 rotations in three years equals about three or four months at a time. While it’s still a long time compared to our non-combat deployments, it still gives us eight or nine months a year back at the squadrons to continue their force generation and to keep the balance right.”

UPPING THE TEMPO

By late 2015 Daesh’s spread across Syria and northern Iraq was slowing as the coalition’s strike tempo intensified. December 21 2015 saw the largest coalition airstrike to date, when 21 fighters including four RAAF F/A-18As destroyed 137 targets in eastern Syria despite being hampered by poor weather and reduced visibility. The RAAF jets alone released 16 weapons, one of which destroyed a building containing a large weapons cache.

“The targets were gas and oil separation plants in central Syria used by Daesh to facilitate their operations and movements,” AIRCDRE



✚ In the three years to the end of September, the Wedgetail had flown 386 missions. DEFENCE

Bellingham said in a statement on January 4 2016. “Destruction of these facilities is expected to cause a long-term military disadvantage to Daesh by limiting their movement.”

A few days later the ATG struck three bridges on Daesh’s main and auxiliary supply routes south of Sinjar in Iraq.

“These routes were frequently used by Daesh to replenish their fighting capability from Syria to Mosul,” AIRCDRE Bellingham added.

“Losing access to these routes severely disrupted and degraded Daesh’s resupply to areas that they have held on to strongly.”

The ATG’s high rate of effort was shown to have had an adverse effect on RAAF budgeted flying hours

in the May 2016 Defence Portfolio Budget Statements (PBS) for 2016-17, placing additional maintenance and sustainment cost onto the aircraft fleets, as well as the additional training and personnel costs to sustain the deployment.

The small five-aircraft KC-30A tanker force, which was yet to achieve full operational capability at the time, was most affected, having flown roughly twice as many as the 3,100 hours budgeted for 2015-16.

And instead of beginning to draw down as they entered their 30th year of operational service, the classic Hornets instead flew 15,700 hours in 2015-16, nearly 4,000 hours more than their budgeted allocation of 12,000 hours. And the much newer but numerically fewer Super Hornets flew 800 more hours than their budgeted 4,000-hour allocation.

By the end of the second year of operations, the ATG continued to log impressive sortie rates.

From October 1 2014 to the end of September 2016, the classic and Super Hornet fighter force had flown 1,801 missions totaling 13,746.6 hours for an average sortie length of 7.6 hours, and had employed 1,387 weapons.

The E-7A Wedgetail had flown 269 missions including 108 in Syrian airspace totaling 3,302.7 hours for an average mission length of 12.3 hours.

Again the KC-30A impressed, having logged 792 missions totaling 6,305.9 hours for an average mission length of just under eight hours. During

By the numbers

✚ In the three years to the end of September 2017, the ATG had recorded the following rates of effort.

The classic and Super Hornets had flown a combined total of 2,619 missions totaling 20,335.3 hours for an average sortie length of 7.75 hours, and have employed 2,333 weapons against Daesh targets.

The Wedgetail AEW&C aircraft had flown 386 missions including 221 in Syrian airspace totalling 4,781 hours, for an average mission length of 12.4 hours.

And the KC-30A had flown 1,124 missions including 150 in Syrian airspace totaling 9,579.3 hours for an average mission length of 8.5 hours. During this time it has offloaded 88,380,635 pounds or about 49,500,000 litres of fuel to RAAF and coalition aircraft at an average of 78,630 pounds or more than 44,000 litres per mission. 📊

the first two years the KC-30 offloaded 63,440,075 pounds or 35,526,442 litres of fuel, an average of 80,101 pounds or nearly 45,000 litres per mission.

SUPPORTING THE EFFORT

There are notable differences in the way each of the aircraft in the ATG's order of battle are supported while deployed.

Due to their commercial aircraft lineage, the KC-30 and Wedgetail have enjoyed airliner-like levels of reliability in the MER, a fact demonstrated by the KC-30's excellent rate of effort averaging a mission per day over the first two years of the deployment.

But for these large aircraft it is difficult to conduct anything but minor flightline servicing on them while in theatre, so they are regularly rotated back to their home bases of Amberley or Williamtown to undergo more comprehensive maintenance and regular servicings.

Similarly, the classic Hornets are rotated back to Australia more frequently than the Super Hornets due to their older systems.

"The Supers are doing the longer servicings here in theatre which is something we can't do with the classics," said AIRCDRE van Haren. "It takes less time with the newer high tech aircraft so we don't have to rotate the Supers out for major servicings, and they can stay for the entire detachment.

"We have physical challenges mainly due to the environment. The whole team has challenges working in hot desert conditions during the summer months. We work around that by trying to do most of the maintenance at night, and they've navigated that pretty well. We have the right balance of maintenance teams here in theatre to not only do the normal day-to-day maintenance but also the (Super Hornet) scheduled servicings.

"We have a sufficient spares holding in theatre to deal with day-to-day issues," he continued. "We have had a couple of issues where we haven't had parts for the aeroplanes, but there's a constant flow of support coming from Australia not only for ourselves but for all of the Australian task groups in theatre.

"There's an aircraft that comes over every week to bring any of our spare parts we don't hold in theatre, and we're usually able to rectify any issues within a week without any major disruptions. We also have enough aircraft here so if one does go offline,

we don't have any disruptions to our rate of effort."

END GAME?

With Daesh now in retreat and its sphere of influence rapidly decreasing, the end may soon be in sight for the RAAF ATG's deployment.

The Battle for Mosul was a major victory against the caliphate's territorial aspirations, and the RAAF Hornets played a significant role in that campaign.

"During the last three weeks of the battle of Mosul in late June and early July, every day our Super Hornets were expending all their ordnance," AIRCDRE van Haren said.

"In those three weeks we employed 158 weapons in 23 days, the Super Hornets were carrying up to five 500 pound precision-guided munitions each, and in one of those days they cleared all their weapons off in about an hour.

"In fact, we nearly ran out of bombs a couple of times there," he added. "During the battle of Mosul we got very low on numbers, but we replenished our stocks from Australia and other sources, and what we're holding here now is sufficient. In total we used more than 278 weapons in eight weeks, which is the highest rate of fire we've had for a RAAF fighter maybe since Korea."

Despite the permissive air environment over Iraq and Syria, there is no doubt many lessons have been learned during the campaign.

"There's always a point of validation of your training, tactics, and procedures whenever you go into an operation, especially in a coalition context," said AIRCDRE van Haren in closing. "We know that, for example, our E-7A is

“
In total we used more than 278 weapons in eight weeks.”

AIRCDRE VAN HAREN

RAAF 'gunnies' load an AIM-9X onto a Super Hornet in the cool of the desert evening in preparation for a mission the next day. DEFENCE

completely interoperable in the bigger system and completely complements that system, so that was an important point of validation. We know that our fighters are able to conduct interdiction and CAS as good or better than western standards, and of course our KC-30s are now capable of operating with all of our coalition partners.

"So while, after three years of ATG work our work is not complete, maybe the campaign end is in sight. Eighty per cent of the territory Daesh used to control at the start of the campaign is now back in the hands of Iraqis and Syrians, and we've been a real constant with our efforts whereas others have come and gone.

"So in three years it's been a big effort for all those units involved and the people involved. Being here even for three or four months a year puts a big drain on families, so I think it's nice to see the campaign advancing towards a future where it ends. I'm not sure what that will look like just yet, but the change in intensity of operations is not too far in the future." ■





A better deal for business jet operators

WRITER: JORDAN CHONG

There have been some important wins for business jet owners and operators in Australia over the past 12 months regarding access to airports and availability of off-terminal customs processing for international arrivals.

The first came in early 2017, when a new Airservices Assessment of Priorities (AIP) was released that provided business jets subject to air traffic control the same priority as other, often larger aircraft when operating to the large capital city airports.

Previously, business jets were lumped together with general aviation and had a lower priority than other operators. This made it hard to get landing and takeoff times because air

traffic controllers were giving priority to bigger aircraft.

For members of the Australian Business Aviation Association (ABAA), the peak industry body representing business jet owners and operators in this country, it was a long sought-after change.

"It's been an ongoing issue for us for about five or six years but we've only just in the last 12 months got it resolved," ABAA chief executive David Bell told *Australian Aviation* in an interview.

"We now have equal footing. If you are off blocks on time and you have got a slot at the other end you won't be held up any more than other people will be held up for weather or single runway operations or whatever it is.

"We've had no negative feedback at all from anybody – the airlines, Airservices – it's worked very smoothly. We just fit into the Australian traffic flow."

PERTH AIRPORT IMPROVEMENTS HINGE ON QANTAS TERMINAL CHANGE

Gains have been harder to come by at Perth Airport in terms of off-terminal processing of international business jet arrivals.

Staff shortages at Australian Border Force (ABF), the government agency tasked with processing incoming and outgoing international travellers, meant off-terminal processing at Perth's fixed-base operations (FBOs) has been virtually non-existent.

Instead, arriving passengers and



crew on business jets have had to taxi over to the international terminal to join all other international passengers in a process that takes time and impacts the airport's operations given aircraft often have to cross active runways.

While an improved process for business jet arrivals at Melbourne Tullamarine and Essendon began flowing through in the second half of 2016, Bell said discussions with the ABF regional commander in Western Australia on better arrangements at Perth Airport were ongoing.

"The worst airport in Australia in this respect is Perth, where it is very difficult to obtain off-terminal clearances," Bell said.

A potential circuit-breaker to the current impasse could come in

Global and Gulfstream jets at Sydney Airport in mid-November. SETH JAWORSKI

“The worst airport in Australia in this respect is Perth.”

DAVID BELL

March 2018, when Qantas moves its international operations to the western side of the airfield at Terminal 3, which will require customs and border processing facilities.

Having ABF staff stationed at Terminal 3 would mean they would be much closer to Perth's FBOs.

"We are very close to Terminal 3 so we might get a better deal," Bell said.

"We have met with Border Force in Perth on this issue and they have acknowledged it might improve, that it might be the vehicle to allow a better deal for business aviation. It is going to help the airport as well."

GOVERNMENT REVIEWING OPERATIONAL RESTRICTIONS AT ESSENDON AIRPORT

The Department of Infrastructure and Regional Development recently concluded public consultations on proposed changes to the rules at Essendon Airport regarding aircraft operations.

The Department's public consultation paper outlined three potential amendments.

First, lifting the maximum takeoff weight (MTOW) to 55,000kg, from 45,000kg currently, for operators during non-curfew hours.

"Larger jets (for business aviation and regional passengers) are now, on average, between 48-53,000kg MTOW and have greater range, enhanced fuel efficiency and improved noise profiles, that are similar or lower than older jet aircraft, due to newer engine technology and advanced navigation systems," the paper said.

"The current restriction on operating weight would not allow larger regional passenger jets or new generation business jets to operate at Essendon Airport."

Aircraft that would be free to fly in and out of Essendon Airport should the proposal be implemented include the Bombardier Global Express (45,132kg), the Gulfstream 650 (45,177kg) and the Boeing 717-200 (54,884kg).

"Allowing these newer, quieter business jets to operate at Essendon Airport would attract both regional passenger services and business aviation with newer, larger jet aircraft," the paper said.

Second, the Department proposed banning non-emergency helicopters and propeller-driven aircraft weighing more than 8,618kg from operating during the 2300-0600 curfew.

"While noting that there is very little demand for non-emergency helicopter

and propeller-driven movements during the curfew, non-emergency movements have contributed to the generation of noise complaints including a number of services, which have been investigated by the Aircraft Noise Ombudsman," the paper said.

Finally, the third proposal was allowing jet aircraft with a noise level not greater than 90 decibels to land during the curfew.

The Department said the 90 decibels level was stricter than what was in place at Sydney, Adelaide or Gold Coast airports for business jets landing during curfew hours.

This would ensure "only the newest business jets can land at Essendon during the curfew".

The consultation paper noted Essendon was the only airport in Australia with a weight restriction on operating aircraft during non-curfew hours, as well as a ban on business jets landing during curfew hours.

Essendon Airport chief executive Chris Cowan said he supported the proposed changes.

"The operators of corporate jets require the ability to fly anywhere any time in the course of their business," Cowan said in a statement.

"The proposed changes to the curfew simply remove red tape which restricts efficient airport operations. Modern jets are relatively quieter nowadays than many propeller aircraft.

"We believe the changes will result in less noise and fewer aircraft movements."

The ABAA too has backed the proposed amendments for Essendon, given the large business jet presence there.

Further, it has asked the federal government to conduct a similar review at Sydney Airport, with the aim of having restrictions based on aircraft noise, rather than aircraft weight currently.

Bell said the current 34,000kg MTOW limit and 95 decibels sound limit for business jets operating in curfew hours at Sydney Airport, as well as at Adelaide and Gold Coast airports, was "totally out of step with reality".

This was because some modern aircraft, although having a MTOW above 34,000kg, were in fact quieter than some of the older aircraft with less than 34,000kg MTOW currently operating during curfew hours.

"It should be purely based on noise, but unfortunately the weight issue has got in the way," Bell said.

OUTLOOK FOR BUSINESS JETS SUBDUED

The annual survey from Honeywell Aerospace showed demand for new business jets was being hit by an uncertain economic outlook and political environment.

Further, a very competitive market for pre-owned aircraft was also leading to what Honeywell Aerospace's 26th annual Global Business Aviation outlook described as a "modest pace for near-term orders".

The Honeywell forecast is for up to 8,300 new business jet deliveries between 2017 and 2027 worth US\$249 billion.

It continues the downward trend of Honeywell's 10-year forecast in recent times, given the estimates of 8,600 deliveries in the 2016 report, 9,200 deliveries in 2015 and 9,450 in 2014.

"Declining used aircraft prices, continued low commodities prices, and economic and political uncertainties in many business jet markets remain as near-term concerns for new jet purchases, leading to a modest growth in 2018," Honeywell Aerospace president for Americas Aftermarket Ben Driggs said in a statement.

On a positive note, Driggs said several new models that are being introduced in the period ahead would support "solid growth in new business jet purchases in the mid term and long term".

The report said business jet deliveries in 2017 would fall somewhere between 620 and 640, representing a decline of about 30 aircraft compared with the prior year.

Honeywell Aerospace said the pullback was largely due to slower order rates for mature aircraft models and a transition to new models slated for late 2017 and in 2018.

"There are several new and exciting aircraft models coming to market, which will drive solid growth in new business jet purchases in the mid term and long term," Driggs said.

The report said 85 per cent of worldwide new aircraft deliveries was expected to be in the larger-cabin aircraft classes, including categories from super mid-size through to ultra long-range variants.

Honeywell Aerospace said North America, the world's largest business jet market, would continue to generate the bulk of the global sales, with the region tipped to have 61 per cent of all purchases over the next five years.

Closer to home, the report said the Asia Pacific region was being impacted



Global, Dassault and Gulfstream jets at Sydney Airport in mid-November. SETH JAWORSKI

by security concerns – the threat posed by an increasingly erratic North Korea is one such example – with operators scaling back plans to acquire new aircraft.

The report said new jet purchases would account for 13 per cent of operators' fleets over the next five years, down "significantly" from the prior year.

Further, only 27 per cent of Asia Pacific respondents planned to schedule new purchases within the next two years.

"Impacted by regional tensions, purchase plans are down significantly from last year and back to 2014 and

2015 levels," the report said.

Every region except for Latin America recorded a decline in new jet purchase plans in the 2017 survey.

The report was compiled with responses from 1,500 business jet operators around the world alongside macroeconomic analyses and consultation with original equipment manufacturers and industry leaders.

The report noted asking prices for pre-owned business jets were still declining overall, especially for medium and long-range aircraft. Further, the share of recent model jets for sale was more than 30 per cent of



total listings, up from pre-recession levels of 15-20 per cent.

However, the total number of pre-owned business jets that were less than 10 years old and listed for resale was down 15 per cent from the prior year and now represented less than eight per cent of the installed fleet.

“The increase in used jet purchase plans clearly aligns with the reduction of used inventory for sale and could result in favourable pricing pressure on used jets in the medium term,” the Honeywell Aerospace report said.

Embraer Executive Jets vice president for sales and marketing in the

Middle East and Asia Pacific Claudio Camelier said Australia was a big market for used aircraft, while sales of new aircraft have, in recent times, been small in number.

“There hasn’t been so many deliveries of new airplanes in Australia in the past few years,” Camelier told *Australian Aviation* via email.

“In spite of that, it is definitely a market in which we invest and we spend a lot of time there because there are still a certain number of opportunities for sales of new airplanes,” Camelier offered.

“What we have seen over the past

“
There are
still a certain
number of
opportunities.”

CLAUDIO CAMELIER

four, five years is an almost stable market for business jets in Australia. We haven’t seen the fleet growing very much.”

Further, Camelier noted any sale of a pre-flown aircraft to a new customer had the potential to lead to a new aircraft sale some time down the track when the owner was looking to upgrade.

Embraer has six business jets based in Australia – three Phenom 100s, one Phenom 300, one Legacy 500 and one Legacy 600.

Amid this stable market, the ABAA has increased its membership of business jet operators by five to 31, who combined operated in excess of 100 aircraft. Meanwhile, the ABAA had 32 what it termed associate members, such as oil companies, aircraft manufacturers, airports and aircraft brokers.

Bell said most of the aircraft coming into Australia were still pre-owned aircraft, apart from some notable exceptions such as the new Gulfstream G650.

Gulfstream also has a couple of new models about to take to the skies, with the G500 due to be certified in 2018 and sistership G600 expected to enter service the following year.

The G500 has a range of 5,200nm at Mach 0.85, while the G600 was designed to fly 6,500nm at Mach 0.85. Both aircraft featured wide cabins that could seat up to 19 people.

Meanwhile, Bombardier’s two long-range business jets, Global 7000 and Global 8000, were also progressing towards eventual certification after some delays to the program.

The Global 7000, which features a range of 7,400nm and seated up to 17 passengers, was expected to enter service in the second half of 2018. First delivery of the 13-passenger, 7,900nm-range Global 8000 is tipped to take place in early 2019.

At Dassault Aviation, its long-range Falcon 8X tri-jet began flying in late 2016 and was on display in Australia for the first time at the 2017 Avalon Airshow. The aircraft is capable of flying Sydney-Mumbai, Hong Kong-London or Beijing-Los Angeles nonstop, or one-stop from Sydney to New York or London.

The company’s in-development Falcon 5X completed its maiden flight in July 2017 and was scheduled to be certified in 2020. The program suffered a four-year delay due to some engine development issues. ▲

Bizjets 2017

GORDON REID

The Australia, New Zealand and South Pacific bizjet fleet as of October 31 2017



Falcon 2000 ZK-OCB at Auckland Airport. ANDREW ALEY

Bizjet deliveries to the region for our review period totalled 16, which was four down on the previous 12 months, while departures totalled 11, also four down on the previous 12 months. As a result the total bizjet fleet increased to 220 aircraft.

The only new type to join our directory this year was the Phenom 300 and we now have two examples in Australia. First arrival was N217CB in December '16, which was later registered N227SL to a private owner at Essendon, while Phenom 300 VH-NJC was delivered to Power Capital Holdings of Perth.

Also delivered during the year was the first Citation CJ3+ in the region with the arrival of ZK-RJZ for Tirohanga Holdings in Wellington.

New operators on our listing imported six aircraft comprising SG Aviation of Melbourne which took delivery of Global Express XRS VH-SGA; Bluefield of Melbourne which took delivery of Global Express VH-UPH;

Charreo of Melbourne which imported Falcon 900C VH-OAA; Gee Bee Jet of Singapore which took delivery of Learjet 60 VH-AND; Add Aviation of Melbourne which took delivery of Hawker 800XP VH-OFJ; and Power Capital Holdings of Perth which imported Phenom 300 VH-NJC.

Established operators imported seven aircraft with Falcon Group Holdings of Brisbane adding Falcon 50 VH-FJQ to join Falcon 50 VH-FOL; Pacific Jets of Auckland adding Falcon 2000LX VH-OCB to replace CitationJet CJ4 ZK-OCB; ST Aerospace Engineering of Singapore taking Gulfstream 150 VH-PFW to join Gulfstream 150 VH-PFV; and Careflight of Wentworthville, NSW adding Beechjet 400A VH-EIH to join Beechjet 400A VH-EIG.

Four US-registered aircraft have been imported by private operators which to date have all retained their US markings. Phenom 300 N227SL, which is based at Essendon, is registered to TVPX Aircraft Solutions of

North Salt Lake, Utah; Citation Mustang N510MW, which is based at Essendon, is registered to the Bank of Utah at Salt Lake City, Utah; Citation Mustang N1956A, which is based at Jandakot, is registered to TVPX Aircraft Solutions of North Salt Lake, Utah; and Eclipse 500 N465DG, which is based at Tamworth and is registered to Aircraft Guaranty Corporation of Onalaska, Texas.

Bizjets departing overseas without replacement were JetFlight Air Services Gulfstream G650ER N650AB; Execujet New Zealand Gulfstream G650 ZK-KFB; WGH Aviation Challenger 604 VH-VRE; RATE (Australia) Premier 390 VH-VHP; MyJet Aviation Citation S/II VH-JMM; Jet City Learjet 36A VH-JCX; Shortstop Jet Charter Bae 125-1000 VH-IMP; and Asia Pacific Jets Hawker 800XP VH-OVE.

Finally, Pacific Jets Westwind II ZK-PJA was scrapped and Revesco Aviation Citation II VH-INT was sold to a spare parts company in the US.

Deliveries

The 16 aircraft deliveries for the review period was four down on the previous 12 months. Delivery numbers for the five years 2012 to 2016 were 21, 13, 20, 20 and 20.

Global Express XRS VH-SGA was registered to S G Aviation of South Melbourne on December 12 '16 and was delivered to Essendon on December 26.

Eclipse 500 N465DG was delivered to a private owner at Tamworth on December 13 '16.

Phenom 300 N217CB was delivered to Essendon on December 15 and by January 17 its registration had changed to N227SL.

Falcon 900C VH-OAA was registered to Charreo of Essendon on February 2 and was delivered to Essendon on February 6.

Citation Mustang N1956A was delivered to a private owner at Jandakot on February 28.

Learjet 60 VH-AND was registered to Gee Bee Jet of Singapore on May 17.

Falcon 50 VH-FJQ was registered to Falcon 50 P/L of

Camden, NSW on May 29 and was delivered to Bankstown on June 19.

Phenom 300 VH-NJC was registered to Power Capital Holdings of Henly Brook, WA on June 15 and was delivered to Perth on June 16.

Hawker 800XP VH-OFJ, which was registered to Add Aviation Services of Essendon Fields, Victoria on July 14, had earlier been delivered to Essendon as **M-UKHA** on July 7.

Falcon 2000EX ZK-OCB was registered to Pacific Jets of Auckland on July 12 and was delivered to Auckland on August 7.

Gulfstream 150 VH-PFW was registered to ST Aerospace Engineering of Seletar, Singapore on July 17.

Citation CJ2 VH-ZIY was registered to Machjet of Cooroy, Queensland on July 31 and was delivered to the Sunshine Coast, Queensland on August 4.

Citation Mustang N510MW was delivered to a private owner at Essendon on August 13.

Beechjet 400XP VH-EIH was registered to Careflight of Wentworthville, NSW on September 8 and arrived in Darwin from Denpasar on September 22.

Global Express VH-UPH was registered to Bluefield of Abbotsford, Victoria on October 9.

Citation CJ3+ ZK-RJZ was registered to Tirohanga Holdings of Wellington on October 25 after being delivered to Wellington as **N297AA** on October 12.

Departures

In our review period 11 aircraft departed our region, four fewer than in the previous 12 months. Departure numbers for the five years 2012 to 2016 were 10, 11, 20, 14 and 15.

RATE (Australia) **Premier 1A VH-VHP** was cancelled from the register on November 8 '16 when sold in the US. VH-VHP had earlier departed Bankstown on July 25 '16 for Townsville, Horn Island and Palau and onwards to the US where it was registered **N59PA** on November 9 '16 to Premier Air Transport of Wilmington, North Carolina.

Execujet New Zealand **Gulfstream G650 ZK-KFB** was cancelled from the New Zealand register on November 17 '16 when



sold in the US. ZK-KFB, which was last reported in New Zealand on September 21 '16 when it departed Wellington for Van Nuys, California, was registered **N193LS** to Stone Street Enterprises on November 18 '16.

Revesco Aviation **Citation II VH-INT** was cancelled from the register on December 6 '16 and the same day was registered **N2664Y** to Dodson International Parts of Rantoul, Kansas.

WGH Aviation **Challenger 604 VH-VRE** was cancelled from the register on February 9 when sold in the US. VH-VRE, which departed Brisbane for Nadi on February 5, was registered **N604LP** to the Bank of Utah in Salt Lake City on February 9.

MyJet Aviation **Citation S/II VH-JMM 551-0036** was cancelled from the register on February 14 when sold in the Philippines.

Pacific Jets **Citation CJ4 ZK-OCB** was cancelled from the New Zealand register on July 3 when sold in the US. ZK-OCB had earlier departed Auckland on June 15 for Honiara, Guam and the US where it was registered **N109CA** to the Cerretani Aviation Group of Boulder, Colorado on July 3.

Pacific Jets **Westwind II ZK-PJA** had been parked at Auckland since May '15 and was cancelled from the register on June 28 '16 before being scrapped at Auckland by the following October.

Shortstop Jet Charter **BAe 125 1000 VH-LMP** was cancelled from the register on July 20 on its sale in San Marino. On July 28 the aircraft, now registered **T7-SMA**, departed Essendon for Broome and Cocos Island.

Asia Pacific Jets **Hawker 800XP VH-OVE** was cancelled from the register on August 31 when sold in

the US and on September 1 it was registered **N123ED** to EAL Leasing of Klamath Falls, Oregon.

Jetflight Air Services **Gulfstream G650ER N650AB**, which had been based at Auckland since December '14, has left the region. On September 6 it departed Auckland for Seletar where it was later reregistered **N999DF**.

Jet City **Learjet 36A VH-JCX** was cancelled from the register on September 26 on its sale in the United States. VH-JCX, which departed Essendon on September 18 for Norfolk Island and Pago Pago, was registered **N525AC** to Critical Air Response Enterprises of Albuquerque, New Mexico on September 27.

Change of registered holder

Challenger 600 VH-JPQ from Norseman Air to CL600 of Melbourne on November 14 '16.

Citation S/II VH-JMM from MyJet Aviation to Penson and company of Pasic City, Philippines on November 14 '16.

Hawker 850XP VH-MQY from GE Commercial WA to Ladenvale WA of Burnley, Victoria on November 18 '16.

Learjet 35A VH-SLD from Pel-Air Aviation to Air Affairs (Australia) of North Nowra, NSW on February 15.

Learjet 36A VH-SLF from Pel-Air Aviation to Air Affairs (Australia) of North Nowra, NSW on February 15.

Global Express VH-FMG from Bank of America/National Association to FMG Resources (August 2006), East Perth, WA on February 27.

Challenger 601 VH-NSB from GSA Industries of Melbourne to J Group Aviation of Melbourne on May 2.

Citation 111 VH-SSZ from Sundryne to Rae's Jet Charter, Moonee Ponds, Victoria on June 20.

Falcon 20F-5 VH-PNY from National Australia Bank to Falconair of Beaconsfield, NSW on July 17.

Citation Ultra VH-WFE from Trump Aviation to Forbes Investment Fund of Coolangatta on July 25.

Challenger 600 VH-JPQ from CL600 to Westpac Banking Corporation of Concord West, NSW on September 7.

Learjet 35A VH-VLJ from JV Aviation Management Services to Astra Aerospace of Nowra, NSW on September 28.

Hawker 800XP VH-RIU from Bezza Holdings to Taverners Aviation of Melbourne on October 4.

Change of registered operator

Citation S/II VH-JMM from MyJet Aviation to Executive Airlines of Essendon Fields on November 14 '16.

Falcon 50 VH-FOL from Falcon Operations Australasia to Falconair of Beaconsfield, NSW on December 6 '16.

Citation VII VH-ING from Citation VII to Flight Options (Australia) of Mudjimba, Queensland on December 8 '16.

Learjet 36 VH-SLJ from Pel-Air Aviation to GoJet, North Nowra, NSW on February 14.

Learjet 35A VH-SLE from Pel-Air Aviation to GoJet of North Nowra on February 14.

Learjet 35A VH-SLD from Pel-Air Aviation to Air Affairs (Australia), North Nowra on February 15.

Learjet 36A VH-SLF from Pel Air Aviation to Air Affairs (Australia) of North Nowra on February 15.

Challenger 601-1A VH-JEC from GSA Industries to Business Aviation Solutions of Tugun, Queensland on May 2.

Learjet 60 VH-NPP from Pacific Flight Services to Avcair of Hamilton, Queensland on May 2.

Learjet 36A VH-JCX from Jet City to Turbojet Holdings of Tullamarine, Victoria on May 31.

Global Express VH-SGA from SG Aviation Australia to Business Aviation Solutions of Tugun, Queensland on June 7.

Falcon 20F-5 VH-PNY from National Australia Bank to Falconair of Beaconsfield, NSW on July 17.

Falcon 50 VH-FJQ from Falcon 50 P/L to Business Aviation Solutions of Tugun, Queensland on July 17.

Citation III VH-SSZ from ExecuJet Australia to Business Aviation Solutions of Tugun, Queensland on July 20.

Citation Mustang VH-MHO from Flight Options (Australia) to Tadmar Investments of Mudjimba, Queensland on July 21.

Citation Ultra VH-WFE from Trump Aviation to Forbes Investment Fund of Coolangatta on July 25.

Citation Mustang VH-MSU from Avia Aviation, to D S Fisher of Surrey Hills, Victoria on August 29.

Learjet 35A VH-VLJ from MarcpJan Charter to GoJet of North Nowra on September 28.

Citation Mustang VH-NEQ from VH-NEQ P/L to Airmed Australia of Georges Hall, NSW on September 29.

Learjet 60 VH-AND from Seletar Jet Charter to Pacific Flight Services of Condell Park, NSW on October 3.

Citation Ultra VH-MMC from Flight Options (Australia) to Mackellar Mining Equipment of Maroochydore, QLD on October 12.

Reregistrations

Learjet 35A LX-LAR, which was delivered to Nowra on October 31 '16, was registered **VH-LPF** to Air Affairs (Australia) on November 21 '16.

Citation Mustang ZK-JAK to **ZK-VXM** for JAK Air of Rotorua on December 12 '16.

Learjet 35A ZK-XVL to **VH-LJA** for Air Affairs (Australia) on December 18 '16.

Learjet 35A ZS-IGP, which

was delivered to Jandakot on October 30 '16, was registered **VH-ZSX** to Formula Aircraft of Jandakot on December 7 '16.

Citation II VH-FOJ to **E5-TCM** for Pacific Private Jet of Rarotonga in late December '16.

Learjet 35A VH-ZSX to **VH-IJG** on February 1 for Formula Aircraft of Jandakot.

Phenom 300 N217CB, which was delivered to Essendon on December 15 '16, had been reregistered **N227SL** by January 17.

Learjet 60XR M-IGHT, which was delivered to Rotorua on August 15 '16, was registered **ZK-JAK** to JAK Air of Rotorua on February 8.

Gulfstream G650ER N650PA, which was delivered to Melbourne on June 19 '16, was registered **VH-LAL** to Little Aviation on March 10.

Learjet 35A VH-YPT to **VH-LJU** for Air Affairs (Australia) on March 31.

Challenger 601 VH-NSB to **VH-JEC** for J Group Aviation of Melbourne on May 2.

Citation Mustang ZK-RJZ to **VH-FNI** for B P Finn of Cairns on August 28.

Updates

Metropolis City Promotions **Citation I VH-HKX**, which was parked at Maroochydore, was parted out and removed from the airport in late August. However, the aircraft still remains current on the Australian register.

Aircraft Group Holdings **Citation 1 VH-EGK** was cancelled from the register on July 21. This aircraft was previously registered **VH-EMM** and still carrying these

marks when parted out at Essendon in March '13.

Palmer Aviation **Global Express M-ATAR**, which was parked at Sydney for most of 2016, departed on December 31 of that year for Nadi and onwards to Oakland County airport at Pontiac, Michigan.

Learjet 24D N174RD, which has been resident at Camden, NSW since January '05, was cancelled from the US register on August 19 '10 as 'exported to Australia'. The Learjet however was never placed on the Australian register and on September 23 '13 it returned to the US register as N174RD.

Demo flights

The Australian International Airshow held at Avalon, Victoria from February 28 to March 5 attracted the bulk of demonstration aircraft to Australia and New Zealand in the period under review. **Global 5000 N755RA** of Zetta Jet was displayed at Avalon on March 1.

Citation Latitude N626LA arrived in Brisbane from Manila and Darwin on February 23 before departing to Christchurch and Auckland on February 24. It arrived at Avalon from Auckland on February 27 and departed on March 4 to Broome and Halim.

Falcon 8X F-HFSD arrived at Avalon from Subang on February 26 and was displayed from February 28 to March 4 before it departed to Auckland on March 4.

Gulfstream G650ER N650ER was demonstrated at Perth, Sydney and Essendon before arriving at Avalon on February 27. It was displayed at Avalon for the duration of the show before departing to

Honolulu on March 6.

Gulfstream G550 N550AU arrived at Avalon from Honolulu on February 27 before it returned to Honolulu on March 6.


Gulfstream 280 N280GD arrived at Essendon from Singapore on February 26 before moving to Avalon on February 27. It remained at Avalon until March 6 when it departed for Seletar.

Legacy 450 N801EE arrived in Avalon on February 27 from Manila, Darwin, Brisbane and Sydney. It was displayed at Avalon until March 4 when it departed to Essendon before continuing to Perth on March 6 and Halim on March 8.

Citation X+ N510CX arrived in Brisbane from Seletar and Darwin on April 30 and later visited Sydney on May 3 before continuing to Christchurch and Auckland on May 4.

Citation CJ3+ N485CZ arrived at Archerfield on June 21 from Halim and Darwin and was later demonstrated at Wellcamp, Camden and Brisbane before moving to New Zealand on June 24 where it was noted at Auckland and Christchurch. **N485CZ** arrived at Sydney on June 27 and was later noted at Bankstown, Forbes, Warrnambool, Moorabbin and Alice Springs before departing Darwin for Minado on June 30.

Citation Sovereign+ N578AB arrived in Brisbane from Seletar and Darwin on July 29 and was demonstrated at West Wellcamp and Hamilton Island before departing Brisbane for Auckland on August 1. The Sovereign departed Auckland for Sydney on August 3 followed by visits to Essendon and Kalgoorlie before departing Brisbane for Darwin and Seletar on August 8. **N578AB** returned to Brisbane from Seletar and Darwin on October 17 before continuing to Sydney on October 18 and departing on October 19 for Darwin and Seletar.

Citation Latitude N985BC arrived in Darwin from Songshan on August 31 before visiting Sydney, Mudgee and Hamilton Island. **N985BC** departed Sydney for Darwin and Seletar on September 4, and later arrived at Essendon on September 30 from Manila and Darwin before continuing to Brisbane. It departed Sydney on October 3 for Darwin and Seletar. 



The interior of Gulfstream G200 demonstrator N280GD on display during the Avalon Airshow.

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Bizjets register

The Australia, New Zealand and South Pacific bizjet fleet as of October 31 2017

The Australian register shows an aircraft having a registered holder and a registered operator. In our listing below we show the registered holder. When an aircraft has a different registered operator then that too is shown.

BEECHCRAFT

Beechjet 400A

- VH-BZL** National Australia Bank, Melbourne, VIC (Helistar Aviation, West Beach, SA)
- VH-EIG** Westpac Banking Corporation, Concord West, NSW (Careflight, Wentworthville, NSW)
- VH-EIH** Careflight, Wentworthville, NSW
- VH-M6C** Marjen (NSW) P/L, Toronto, NSW (Business Aviation Solutions, Tugun, QLD)

BOEING BUSINESS JETS

BBJ

- A36-001** 34 Squadron RAAF, Canberra
- A36-002** 34 Squadron RAAF, Canberra

BOMBARDIER

Learjet 24D

- N174RD** P Rosado, Cobbitty, NSW

Learjet 31ER

- VH-OVX** D G Thomson, Cranbourne, VIC (Shortstop Jet Charter, Essendon, VIC)

Learjet 35A

- VH-ESM** Raytheon Australia, Yerrilyong, NSW
- VH-ESW** Raytheon Australia, Yerrilyong, NSW
- VH-IJG** Formula Aircraft, Jandakot (Aus West Airlines 2010 Jandakot)
- VH-JCR** Air Affairs (Australia), North Nowra, NSW (GoJet, North Nowra, NSW)
- VH-LFA** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-LJA** Air Affairs (Australia), North Nowra, NSW (GoJet)



Challenger 600 VH-JPQ at Sydney. SETH JAWORSKI

- VH-LJG** Formula Aircraft, Jandakot, WA (Aus West Airlines 2010)
- VH-LJJ** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-LJU** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-LPF** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-LPJ** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-LRX** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-OVB** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-PFA** ST Aerospace Engineering, Singapore (Pacific Flight Services, Condell Park, NSW)
- VH-SLD** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-SLE** Pel-Air Aviation, Mascot (GoJet)
- VH-VLJ** Astra Aerospace, Nowra, NSW (GoJet)

Learjet 36

- VH-SLF** Air Affairs (Australia), North Nowra, NSW (GoJet)
- VH-SLJ** Pel-Air Aviation, Mascot, NSW (GoJet)

Learjet 45

- VH-CXJ** Aeromed QLD, Beverly Hills, NSW (Lifeflight Australia, Brisbane City East, QLD)
- VH-LJQ** Westpac Banking Corporation, Concord West, NSW (Jet City)
- VH-LJX** Westpac Banking Corporation, Concord West, NSW (Jet City)
- VH-PFS** ST Aerospace Engineering, Singapore (Pacific Flight Services)
- VH-VVI** Aeromed QLD, Beverly Hills, NSW (Lifeflight Australia)

Learjet 60

- VH-AND** Gee Bee Jet, Singapore
- VH-NPP** Chiron Flight Services, Singapore (Pacific Flight Services)
- VH-XPN** Norris Aviation, Nundah, QLD (Avcair, Hamilton, QLD)

Learjet 60XR

- ZK-JAK** JAK Air, Rotorua, NZ

Challenger 300

- N300NZ** Southern Flight, Wanaka, NZ

Challenger 600

- VH-JPQ** Westpac Banking Corporation, Concord West, NSW (Australian Corporate Jet Centres, Essendon Fields, VIC)

Challenger 601

- VH-MXX** MWP Racing, Mt Gravatt, QLD (Business Aviation Solutions)
- VH-JEG** J Group Aviation, Melbourne (Business Aviation Solutions)
- N360RL** Luft Aviation Charter, Essendon

Challenger 604

- VH-BLM** Aircraft Acquisition, Tugun, QLD (Business Aviation Solutions)
- VH-LEF** Linfox Express Charter, South Melbourne (Air National Australia, Essendon Fields)
- VH-URR** Plane Investments, Beverly Hills, NSW (Lifeflight Australia)
- VH-VLZ** Sunshine Air Services, Mount Waverley, VIC
- VH-VSZ** Capital Finance Australia, Baulkam Hills, NSW (ExecuJet Australia)
- VH-XNC** Cobham SAR Services, Adelaide (Surveillance Australia)
- VH-XND** Cobham SAR Services, Adelaide (Surveillance Australia)
- VH-XNE** Cobham SAR Services, Adelaide (Surveillance Australia)
- VH-XNF** Cobham SAR Services, Adelaide (Surveillance Australia)

- N360PL** Luft Aviation Charter, Essendon

- N360SL** Holypeak, Melbourne
- N604AU** ANZA Aviation, Sydney
- A37-001** 34 Squadron RAAF, Canberra
- A37-002** 34 Squadron RAAF, Canberra
- A37-003** 34 Squadron RAAF, Canberra

Challenger 605

- VH-LVH** Dulcie Ltd, Singapore (AP Jets, Artarmon, NSW)

Global Express

- VH-CGD** Bank of America/National Association, Sydney (Crown Melbourne)
- VH-CCV** Bank of America/National Association, Sydney (Crown Melbourne)
- VH-CCX** Bank of America/National Association, Sydney (Crown Melbourne)
- VH-FBJ** G H Aviation, South Yarra, VIC (Pratt Aviation)
- VH-FMG** FMG Resources (August 2006) P/L, East Perth
- VH-IGV** Bank of America, National Association, Sydney (ExecuJet Australia)
- VH-IQR** First Quantum Minerals (Australia), West Perth (ExecuJet Australia)
- VH-LAW** Walker Air Services, Mascot (Walker Air, Mascot, NSW)
- VH-LZP** GSA Industries, Melbourne
- VH-OCV** Bank of America, National Association Sydney, NSW (ExecuJet Australia)
- VH-SGA** S G Aviation, South Melbourne
- VH-TGG** Gandel Investments, Essendon
- VH-UPH** Bluefield, Abbotsford, VIC
- VH-VDX** Pratt Holdings, Southbank, VIC (Pratt Aviation)
- VH-VGX** Pratt Holdings, Southbank, VIC (Pratt Aviation)
- M-ATAR** Palmer Aviation, Brisbane
- N18WF** Westfield Aviation, Sydney
- N360HP** Holypeak, Melbourne

N360LA Luft Aviation Charter, Essendon
N709FG AVWest Aviation, Cottesloe, WA
N888GX Remorex, West Perth
N888ZP Consolidated Press, Sydney

Global 6000

VH-IEJ Bank of Utah, Salt Lake City, USA (ExecuJet Australia)
VH-LEP Linfox Global Charter, Melbourne (Air National Australia)
N599CH AVWest Aviation, Cottesloe, WA

CESSNA

Citation Mustang

VH-EJT Ivan Erceg, Osborne Park, WA
VH-FNI B P Finn, Cairns
VH-KXM Gulf Coast Aviation, Bowral, NSW
VH-MHO Tadmair Investments, Maddington, WA
VH-MSU MSU Aviation, Surrey Hills, VIC
VH-NEQ VH-NEQ P/L, Georges Hall, NSW (AirMed Australia, Georges Hall, NSW)
VH-PWX Special Mining Services, Glenorie, NSW (Flight Options Australia)
VH-SQW 4JS P/L, Cairns, QLD (Flight Options Australia)
VH-SQY Cirrus (Australia) P/L, Wagga Wagga, NSW
VH-VSQ Eric Saaks, Bondi Junction, NSW
ZK-LGA GESL Aviation Holdings, Hastings, NZ
ZK-VXM JAK Air, Rotorua, NZ
ZK-YDZ Skyline Aviation, Napier, NZ
N510MW Essendon, VIC
N890LG Brookby Quarries, Ardmore, NZ
N1956A Jandakot, WA

Citation CJ1

VH-APJ Commonwealth Bank of Australia, Parramatta, NSW (Southern Air Services, Warrnambool, VIC)
VH-CDG Shazo Holdings, Brisbane, QLD (Professional Jet Aviation, Coolangatta, QLD)
VH-DAA Vanguard Aviation, Lutwyche, QLD
VH-KXL Westpac Banking Corporation, Concord West, NSW (Edwards Coaches, Armidale, NSW)
VH-SIY Machjet P/L, Cooroy, QLD (Machjet International, Marcoola, QLD)
VH-TFW Acena Nominees, Adelaide, SA (Light Jets Australia, Toowoomba, QLD)
VH-YNE Henadeck, Moorebank, NSW

Citation CJ1+

VH-JSO VH-JSO P/L, East Albury, NSW (Colin Joss and Company, Albury, NSW)
VH-MYE Andrew Norbury Aircraft, Docklands, VIC

Citation M2

VH-WMY Mitchell Water Australia, North Melbourne

Citation CJ2

VH-IYG Thomas Foods International, Murray Bridge, SA
VH-MOR Thomas White Holdings, Yeronga, QLD
VH-RJB Airlux, North Sydney, NSW (Edwards Coaches)
VH-ZIY Machjet, Cooroy, QLD (Machjet International)

Citation CJ3

VH-NNE Westpac Banking Corporation, Concord West,



Citation II P2-MRM at Cairns.
 ANDREW BIELOZACKI

NSW (Divair, Orange, NSW)
P2-MEH Tropicair, Port Moresby
NS1GT E C Menzies Aviation, Essendon

Citation CJ3+

ZK-RJZ Tirohanga Holdings Ltd, Wellington

Citation CJ4

F-ONCP Noumea Jet Services, Noumea

Citation I

VH-SOU Togli P/L, Blacktown, NSW (Australian Air Services, Georges Hall, NSW)
VH-ZMD Australasian Jet, Essendon Fields

Citation I/SP

VH-CSP Australian Capital Corporation, Rocklea, QLD
VH-FCS Fox Aviation, Brighton, VIC (Australian Corporate Jet Centres, Essendon Fields)
VH-FUM Netjets, South Melbourne (Australasian Jet)
VH-NOU Togli, Blacktown, NSW (Australian Air Services)
VH-VPM Twentieth Super Pace Nominees, Southport, QLD
N501AF Jandakot, WA

Citation II

VH-EEE DHM Aircraft Sales, Moorebank, NSW
VH-EJY Executive Jet Charter, Castle Hill, QLD (Maxem Aviation)
VH-FYP Hope Estate Events, Pokolbin, NSW
VH-QQZ Aspen Medical, Deakin, ACT. (Corporate Aircraft

Charter, Adelaide, SA)
VH-VDF Empirja, Coorparoo, QLD
VH-ZLE Westpac Banking Corporation, Concord West, NSW (Corporate Aircraft Charter)
E5-TCM Pacific Private Jet, Rarotonga, Cook Islands
P2-EUV Pacific Jets PNG, Port Moresby
P2-MRM Pacific Jets PNG, Port Moresby

Citation S/II

VH-EMO Adams (UK) Corporation, Greenvale, VIC
VH-JLU Machjet, Cooroy, QLD (Machjet International, Marcoola, QLD)
VH-SQM Machjet, Cooroy, QLD (Machjet International)

Citation Bravo

VH-CCJ CCI, Ascot, QLD (Avcair, Hamilton, QLD)
VH-EYJ Eyecon Jet, Shepparton, VIC (Executive Airlines, Essendon Fields)
VH-HVM Quasar Resources, Adelaide (Heathgate Resources, Adelaide, SA)
VH-SCG Falcon 50, Camden, NSW (MacArthur Jet Charter, Camden, NSW)
VH-XBP FMR Investments, South Perth (Maxem Aviation)
VH-ZLT Revesco Aviation, Perth

Citation Ultra

VH-MMC Mackellar Mining Equipment, Maroochydore, QLD (Flight Options Australia)
VH-OHE Aspen Medical, Deakin, ACT (Corporate Aircraft Charter, Export Park, SA)
VH-PSU State of Queensland, Eagle Farm, QLD

VH-WFE Forbes Family Trust, Coolangatta, QLD (Australian Corporate Jet Centres)

Citation Encore

VH-MXD Westpac Banking Corporation, Concord West, NSW (Maxem Aviation)
VH-VRL Heathgate Resources, Adelaide
VH-YUL Yulgibar Pastoral Company, Echuca South, VIC

Citation III

VH-SPJ AAA Aircraft, Mudjimba, QLD (Flight Options Australia)
VH-SSZ Rae's Jet Charter, Moonee Ponds, VIC (Business Aviation Solutions)
N163JM Jetcraft Corporation, Wellington
N692BE P Rosado, Cobbitty, NSW

Citation VII

VH-DHN Welrose, Gold Coast, QLD (Business Aviation Solutions)
VH-ING AAA Aircraft, Mudjimba, QLD (Flight Options Australia)
VH-LYM Westpac Banking Corporation, Concord West, NSW (Edwards Coaches)

Citation Excel/XLS

VH-XGU Homada, Greenvale, VIC

Citation Sovereign

VH-EXG Melbourne Air Holdings, Lilydale, VIC (Executive Airlines, Essendon Fields, VIC)
VH-EXQ Mitchell Air, South Melbourne (Australian



Citation CJ1 VH-JSO at Essendon. GORDON REID

Corporate Jet Centres)

VH-PYN Gulf Aircraft, Gatton, QLD

VH-VPL Twentieth Super Pace Nominees, Southport, QLD

VH-ZEK Silver Linings Aviation, Rydalmere, NSW

Citation X

VH-XGJ Mount Craigie Holdings, Rosebud West, VIC (Jet City)

VP-CFP Palmer Aviation, Brisbane

DASSAULT

Falcon 20F-5

VH-FAI National Australia Bank, Melbourne, (Falconair, Beaconsfield, NSW)

VH-PNY Falconair, Beaconsfield, NSW

Falcon 50

VH-FJQ Falcon 50 P/L, Camden, NSW

VH-FOL Falcon Group Holdings, Brisbane (Falcon Operations Australasia, Upper Coomera, QLD)

Falcon 2000

VH-FJO Falcon Jet Operations, Canning Vale, WA (Falconair)

Falcon 2000EX

VH-WIO Balmoral Air, Artarmon, NSW

ZK-OCB Pacific Jets, Auckland, NZ

Falcon 900C

VH-OAA Charreo P/L, Essendon, VIC (Shortstop Jet Charter)

VH-PPD Westpac Banking Corporation, Concord West, NSW (Maxem Aviation)

Falcon 900EX

P2-ANW Air Niugini, Port Moresby, PNG

N146EX Business Jets, Auckland, NZ

Falcon 7X

VH-CRW Brenzil, Toowong, QLD

M-GMKM MKAir7X, Newcastle, NSW

ECLIPSE

Eclipse 500

N227B Tamworth, NSW



Falcon 7X VH-CRW. ANDREW ALEY

N4650G Tamworth, NSW

N580WC Wanless Environmental, Coopers Plains, QLD

EMBRAER

Phenom 100

VH-FJP China Southern West Australian Flying College, Willetton, WA (Revesco Aviation)

VH-LWZ China Southern West Australian Flying College, Willetton, WA (Revesco Aviation)

VH-PNM Don Equis P/L, West Melbourne, VIC (Revesco Aviation)

Phenom 300

VH-NJC Power Capital Holdings, Henley Brook, WA

N227SL Essendon, VIC

Legacy 500

N142GZ Avesco, Mackay, QLD

Legacy 600

VH-VLT Clear Skies (Vic), Essendon Fields, VIC (Marclan Charter, Essendon Fields, VIC)

GULFSTREAM

Gulfstream G150

VH-PFV ST Aerospace Engineering, Seletar, Singapore (Pacific Flight Services)

VH-PFW ST Aerospace Engineering, Seletar, Singapore

Gulfstream G350

VH-NKD CML Aviation, Brisbane

Gulfstream IV

VH-CGF Vendome Investments (Australia), Tullamarine (Jet City)

VH-TXS Revesco Aviation, Perth Airport

N810LP Kefford Corporation, Essendon

Gulfstream G450

VH-MBP Marclan, Essendon Fields (Marclan Charter)

Gulfstream G550

VH-PFL ST Aerospace Engineering, Seletar, Singapore (Pacific Flight Services)

N360WF Westfield Aviation, Sydney

N613WF Westfield Aviation, Sydney

N818LF Westfield Aviation, Sydney

Gulfstream G650

N47TR AVWest Aviation, Cottesloe, WA

N720LF LFG Aviation, Sydney

Gulfstream G650ER

VH-LAL Little Aviation, Melbourne

N946JB Rank Services, Auckland

HAWKER

Hawker 800XP

VH-OFJ Add Aviation Services, Essendon Fields, VIC

Hawker 800XP1

VH-RIU Bezza Holdings, Osborne Park, WA (Australian Corporate Jet Centres, Essendon Fields)

Hawker 800XP2

VH-RIO Principle Finance, Manly, NSW (RFDS Western Operations, Jandakot)

Hawker 850XP

VH-BMW Burbank Air Services, Altona, VIC (Australian Corporate Jet Centres)

VH-MQY Ladenvale WA, Sydney

VH-SBY State of Queensland, Eagle Farm, QLD

IAI

Westwind 1

VH-AJG Pel-Air Aviation, Mascot

VH-AJJ Pel-Air Aviation, Mascot

VH-AJV Pel-Air Aviation, Mascot

VH-KNS Pel-Air Aviation, Mascot

VH-KNU Pel-Air Aviation, Mascot

Westwind II

VH-IER Capital Jet Resources, Maryborough, QLD

VH-KNR Regional Express Holdings, Mascot (Pel-Air Aviation)

VH-ZYH AWAAT, Albury, NSW (Oberon Aviation Services, Albury, NSW)

MCDONNELL DOUGLAS

MD-82

VP-CBH Mineralogy, Brisbane

VP-CBI Mineralogy, Brisbane

NEXTANT AEROSPACE

400XTI

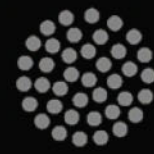
VH-OVS Westpac Banking Corporation, Concord West, NSW (Careflight)

ZK-NXJ Skyline Aviation, Auckland



The first Phenom 300 on the Australian register, VH-NJC.

GORDON REID



indra

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Remote Towers

FLYING EYES

Navy prepares for a future with UAVs

WRITER: MAX BLENKIN



Flying unnoticed over the busy Gulf of Oman, a little Aussie UAV (unmanned aerial vehicle) spots a suspicious vessel, maybe just a trading dhow of the type that has sailed these waters for millennia. Or maybe it's carrying drugs, weapons or terrorists.

Live video from the UAV is examined aboard a distant Australian warship where it will be decided if a closer look is justified.

This was the first ever operational

deployment of Royal Australian Navy UAVs, with four Insitu ScanEagles and their operators aboard HMS *Newcastle* during her recent mission to the Middle East.

During that time, the ScanEagles flew more than 200 hours, either on their own or in conjunction with the ship's MH-60R helicopter. These simultaneous operations, termed manned-unmanned teaming, were another first for the Navy.

It would be nice to report that at

least one of the vessels spotted by the ScanEagle was found to be carrying large quantities of drugs or guns, as has occurred in interceptions by Australian ships in earlier Middle East deployments.

Although they did observe numerous vessels, Lieutenant Commander Ben Crowther, officer in charge of the Navy Unmanned Aircraft Systems Unit (NUASU), said they produced none of the big drug busts in what was a relatively quiet patrol in

+ A ScanEagle is launched from the deck of HMS *Newcastle*.
DEFENCE



that respect.

He said this first ever operational deployment was conducted under an operational evaluation plan to capture data and learn all the lessons the Navy needs when it goes shopping for unmanned aerial systems under Project SEA 129 Phase 5.

These will be emplaced first aboard proposed new Offshore Patrol Vessels (OPVs) and then major warships such as the DDGs, Future Frigates and amphibious assault ships (LHDs).

The key purpose of a UAV is to transport a sensor or sensors and provide data back to where it's needed. Since the early days of unsteady low-res video, the pace of platform and sensor development has been frantic.

"The rate of progression is astounding. No sooner do I get used to what's out there on the market and get comfortable with the sensors available, and then a whole new range comes out or they have miniaturised a manned aircraft sized radar which can now be

**“
It was about
making Navy
an informed
customer.”**

LCDR BEN CROWTHER

carried on a Scheibel S-100 and give you a range of 100 nautical miles. That stuff is happening monthly,” LCDR Ben Crowther said.

“It will almost certainly change the future of the Fleet Air Arm.”

That's so much so that NUASU, initially stood up as the Navy UAS Development Unit with five personnel in 2013 and based at HMAS Albatross at Nowra, NSW is set to be commissioned as a Navy squadron.

The Navy is a relative latecomer to modern UAS, although it has had long engagement with unmanned systems, starting with the Jindivik remote-controlled target aircraft back in October 1950.

Jindivik remained in service right up to 1998. There was also the experimental Turana (1971-79) and Kalkara (1998-2008).

The Australian Army started using UAVs in 2003 and subsequently flew ScanEagle for 45,000 hours in Iraq and Afghanistan.

Indeed, LCDR Crowther's passion for UAS stems from his 2012 deployment to the Middle East as a staff officer to the Australian Taskforce 633 deputy commander. That was the year when seven Australian soldiers died in Afghanistan.

“It made sense to me that if we can get the robots to fight or do that dangerous stuff and save the lives of our soldiers as a result, then we don't need to be sending notification teams out to our soldiers' families,” he said.

The US Navy took an early interest in UAS, signing a deal with Insitu, now a subsidiary of Boeing, in 2005 and now has extensive experience of operating ScanEagle from ships.

“In mid-2012 we put up a case to the Chief of Navy that there should be a bit more of a deep dive into this,” LCDR Crowther said.

The Navy UAS Development Unit was stood up in early 2013 and Navy took over the Army's ScanEagle contract with Insitu Pacific.

“The intent early on was to establish a basic understanding of UAS operations, develop orders, instructions and procedures on how do we do this stuff safely,” he said.

“It was about making Navy an informed customer.”

Beyond surveillance, NUASU envisages a very diverse range of possible roles for the eventual capability.

For surface warfare, a UAV can partake in the actual targeting and

subsequent battle damage assessment. For amphibious warfare, a UAV, perhaps operating from of the Canberra class LHDs, could conduct pre-assault reconnaissance and provide overwatch of the landing force including special forces.

A UAV could also provide targeting for naval fire missions, observe and correct fires and conduct subsequent bomb damage assessment.

Then there's reconnaissance for humanitarian and disaster relief operations, search and rescue, and range clearance.

In maritime interdiction operations, a UAV can conduct discrete observation of the target vessel, especially on the blind side, away from the interdicting vessel.

But in order to learn the basics, NUASU initially operated a small quadcopter.

This is what's termed a Tier 1 capability and these small UAVs may even end up in the Navy inventory to support boarding operations, conduct mast and hull inspections and even assist in man overboard incidents.

LCDR Crowther said their ultimate objective wasn't to replace any of the manned capabilities.

"What we aim to do is supplement or complement them, enable them to be better at their job by taking some of the load, some of the lower priority or more dangerous stuff. We therefore support the much greater capability of the manned aircraft," he said.

“ A UAV could also provide targeting for naval fire missions.

• A ScanEagle is prepared for flight on the flightdeck of HMAS Newcastle. DEFENCE

"MH-60R has the world's best sensor suite on board. Clearly we can't compete with that with a 22kg drone.

"Our version of manned-unmanned teaming is concurrent tasking. We might put the MH-60R up, it does a sweep of the area, works out what the maritime operating picture is and then allocates the task to us. Then the MH-60R can go and do higher priority tasks or it might be out of fuel or crew endurance. We can provide persistent ISR capabilities."

With the proliferation of small UAS across the community, there's a perception that these are not much more than useful novelties.

LCDR Crowther said as they examined procedures and regulations, it became obvious that what they were operating was a core aviation product, which required that they be operated by trained personnel, subject to the same

qualification and crew rest requirements as those flying Navy helicopters.

That ruled out cross-training of personnel on ships as their onboard watch duties are incompatible with aviation requirements.

The current UAS personnel model is a trained pilot, aviation warfare officer or aircrewman as mission commander and four others cross-trained as UAS remote pilots, mission payload operators and maintainers.

That could evolve, as work proceeds on how to best process data from advanced sensors and disseminate it through the fleet. Aboard HMAS Newcastle, the raw video feeds go into the ship's combat management system (CMS) for assessment in the operations room.

"We are not sure if that's the best way to do it. It might be that we need to alter our crew model to process radar and ESM data in the ground control station," LCDR Crowther said.

"That would entail having a sensor operator like the backend guy in a Seahawk. A Seahawk is capable of processing all its own data and it just sends processed tracks back to the ship. At the moment we are very reliant on the ship and we just point the sensor in the right direction."

To further develop its UAS capability, the Navy decided in mid-2015 to buy a pair of ScanEagle systems outright, each with ground stations and four aircraft, making a total of eight, at an all up cost of \$15 million.

It also started looking at UAS capable of carrying more complex and diverse sensors, such as radars and ESM (electronic support measures).

Two systems were tried out, the Schiebel S-100 rotary-wing UAV and the Insitu Integrator fixed-wing, the commercial variant of the RQ-21 Blackjack used by the US Navy and Marine Corps.

"It piqued our interest in rotary. We had been flying the ScanEagle for a while and we had a pretty reasonable understanding of the strengths and weaknesses, limitations and operational capabilities and potential of those systems. But we had no understanding of what small rotary platforms might do, despite the fact that Navy does helicopters as our core aviation capability," LCDR Crowther said.

Schiebel, an Austrian firm, won the ensuing (Navy Minor Project 1942) tender for one system, with two



aircraft, two ground stations and two years of support.

Their arrival has been delayed because of the Navy requirement that they be powered by less flammable JP5 fuel rather than avgas. Delivery is expected around the end of this year.

Fixed-wing and rotary-wing UAS each have advantages and disadvantages.

ScanEagle can stay aloft in excess of 12 hours, is efficient and covert. But it has a small payload of a single sensor package, albeit very good ones. That's either the EO900 TV camera with 170-times optical zoom for daytime use, or the MWIR2 IR system for day and night use.

The latest payload is Australian firm Sentient Vision Systems' ViDAR (visual detection and ranging) which gives ScanEagle a capability for broad area maritime surveillance.

That uses a secondary high resolution camera to scan 180 degrees along the aircraft path, overlaying its images with subsequent images to discern persistent pixel anomalies.

A distant small wooden boat would not be noticed by the standard camera but would be seen by ViDAR, which can cue it for a closer look by other sensors.

"It is a bit of a game changer for us. Clearly it's subject to environmental conditions again because it works in the visual spectrum," LCDR Crowther said.

"On a clear day it gets reliable hits beyond 15 nautical miles. Sentient says their analysis shows it increases search effectiveness of ScanEagle about 80 times. That is mind blowing."

However, for a small UAV ScanEagle has a large ship deck footprint which can be challenging on small ships. It requires a pneumatic catapult to launch, and a skyhook, which catches the wing, to land. That amounts to around 2,500kg of infrastructure.

The Navy considered putting ScanEagle on Armidale class patrol boats but concluded the required launch and recovery equipment posed an unacceptable risk of adding to hull cracking problems.

The Schiebel S-100 is more complex and much bigger than ScanEagle – it weighs 199kg – but has around half the endurance. Being a helicopter, it has nil deck footprint beyond the requirement for a suitable clear area of deck space.

Further, it can carry a payload of up to 50kg which could include multiple



NUASDU engineering manager LCDR Matt Hyam with an S-100 at the Avalon Airshow earlier this year. DEFENCE



Camcopter S-100s at Jervis Bay Airfield during trials with NUASU in 2015. DEFENCE

sensors. It even has sufficient power output to run a radar.

With all these new capabilities comes yet another challenge – integrating their product into onboard combat management systems.

For the ScanEagle deployment aboard HMAS *Newcastle*, Thales performed the integration into the FFG's Australian Distributed Architecture Combat System (ADACS).

In 2015 there was a demonstration of network integration into the Saab 9LV combat system so integration of UASs onto the Anzac frigates shouldn't be too difficult.

It's not just the Navy interested in UAS. In 2016, NUASU conducted a three-month trial deployment of six ScanEagles to Christmas Island to find out just what was required to move, operate and support UAS operations far from home.

On Christmas Island, this capability was demonstrated to Australian Border

Force officers.

"They wanted some sort of understanding of what a drone could offer," LCDR Crowther said.

During that deployment, NUASU also lost one of its aircraft through engine failure about two kilometres off the island. Although ScanEagle has very good glide characteristics, the onboard computer decreed it couldn't make it back to land, so it was turned into the wind and ditched.

"Sometimes they float, sometimes they don't. This one didn't," he said.

It was thought this aircraft had vanished for good into very deep waters surrounding the island. But four months later LCDR Crowther took a call from a Christmas Island dive operator who inquired if he was missing an aircraft.

Turned out his dive boat had anchored over a reef and there, 21-metres down, was the missing ScanEagle, which was duly returned to Nowra. Salt water and electronics don't mix and so it's now good only for display purposes.

One other has been lost, a testament to Murphy's Law – if anything can go wrong it will – and its corollary, that this will surely occur during a VIP demonstration.

Mostly ScanEagle recovery on the skyhook works fine but not this time.

Just before the rope, a gust of wind hit the aircraft, its autopilot didn't have time to correct and it stalled and crashed, disassembling itself on the ground before the onlookers. ■

“ Sometimes they float, sometimes they don't. This one didn't. ”

LCDR BEN CROWTHER



My enemy's enemy

Airbus takes over Bombardier's "cute little airplane" C Series after Boeing spat

WRITER: JOHN WALTON

Bombardier's single-aisle, twinjet C Series small airliner is as popular with passengers as it has been lukewarmly received by airlines, with an all-new cabin, 2-3 configuration and 18-inch wide seats stretching to 19-inch in the middle seat of three making it one of the most pleasant ways to fly.

"It's a cute little airplane," said Airbus sales chief John Leahy of the Bombardier C Series in Hamburg last year, when few people would have imagined that the European airframer would take over the Canadian aircraft program, essentially for free, in a move that shook the world of commercial aviation like few others.

While Bombardier was rumoured for some years to be keen to refocus on its non-commercial aviation business, the key impetus for the decision is a series of protectionist decisions by the United States government in favour of Boeing, as the result of a trade complaint that, initially, seemed like all the others that end up all sound and fury, but signifying nothing. A little

launch aid here, a little investment incentive there, a big discount for early or large orders over there: it's all part of the cut and thrust of commercial aircraft manufacturing, and is frankly nothing new to commercial aviation.

In this case, however, the US Department of Commerce levied preliminary duties bringing the total tariff to 300 per cent, sinking a hole in the side of the C Series reaching the US market.

Boeing's complaint has largely received opprobrium from the industry, including from large airline customers, not least since Boeing does not offer a competing product in the C Series' size category, and itself receives governmental incentives and subsidies – like many, if not almost all, large manufacturers.

But the key problem for Bombardier was its largest single order, which comprised 75 firm aircraft, from Delta Air Lines in 2016. Without the ability to deliver these aircraft, the future of the C Series seemed in doubt.

Enter Airbus.

✦ Airbus and Bombardier have joined forces. AIRBUS

The C Series moves from "cute little airplane" to grownup member of the Airbus family

"Airbus SE and Bombardier Inc. are to become partners on the C Series aircraft program," announced the European airframer just minutes before it entered its regulatory silent period prior to its results announcement – a silent period, which combined with French holidays, prevented Airbus from commenting with more than a brief statement to *Australian Aviation*.

The program will be managed by the C Series Aircraft Limited Partnership (CSALP), which will, at closing, be controlled 50.01 per cent by Airbus, 31 per cent by Bombardier, and 19 per cent by public investment arm Investissement Québec.

"CSALP's headquarters and primary assembly line and related functions will remain in Québec, with the support of Airbus's global reach and scale. Airbus's global industrial footprint will expand with the Final Assembly Line in Canada and additional C Series production at Airbus's

“
This time, the stars were aligned.

FRANÇOIS COGNARD



manufacturing site in Alabama, US. This strengthening of the program and global cooperation will have positive effects on Québec and Canadian aerospace operations,” the partnership said when announcing the news.

The deal also includes “call rights” where Airbus could acquire all of Bombardier’s interest in CSALP at “fair market value”, the announcement reads. That call right is “exercisable no earlier than 7.5 years following the closing, except in the event of certain changes in the control of Bombardier, in which case the right is accelerated”.

Bombardier, meanwhile, will have a corresponding “put right” where “it could require that Airbus acquire its interest at fair market value after the expiry of the same period”.

Finally, CSALP could acquire Investissement Québec’s interest at fair market value “under certain conditions”, starting in 2023. It could also sell its share in CSALP at the same time as Bombardier under “tag along rights”.

While Airbus executives initially raised expectations of an early European takeover of the whole C Series operation, later commentary walked back that line. Further details have emerged since, including the fact that Bombardier will spend several hundred million US dollars on the Mobile manufacturing aspect of the deal.

Crucially, “at closing, there will be no cash contribution by any of the partners, nor will CSALP assume any financial debt,” Airbus said when announcing the deal.

But why now? François Cognard, vice president for sales in Australasia and South East Asia at Bombardier Commercial Aircraft, tells *Australian Aviation* that “this partnership stemmed from our strategic approach to ensure that the C Series aircraft realises its full potential and value globally. We think that it will greatly accelerate the commercial success of the C Series aircraft program,” he said.

“We explored this opportunity back in 2015. However, we were both in a different position than we are today. It is all about timing. Two years ago, we were both focusing on developing new aircraft programs. This time, the stars were aligned.

“Now that Bombardier has completed the C Series and Airbus has certified both the A320 and the A350, we are more focused on the same areas of synergies. We have designed and put

in service an innovative aircraft and we now need to focus on making sure that it becomes a commercial success.”

The future state of play for the Airbus-C Series tie-up still requires a crystal ball

Few things are entirely predictable at this early stage, and the deal is not yet done.

“It’s still an engagement, not a marriage,” noted Air Lease Corporation boss and influential bellwether of industry opinion Stephen Udvar-Hazy of the tie-up.

So, what seems likely? First, and probably most important, Airbus has goals of keeping the C Series and its advances out of the hands of airframers in China and Russia in particular, who have long coveted the technologies for their own, less internationally persuasive, aircraft programs. Stability for the C Series, too, is a gain, with flyers who love the spacious cabin interior and wide seats breathing a sigh of half-relief, half-anticipation to see which airline will next order the passenger-pleasing narrowbody.

The supply chain implications are also significant, particularly given the amount of involvement by UTC (parent of Pratt & Whitney) on the C Series, and indeed on the A320neo family program, but also with Rockwell Collins (itself in the process of a tie-up with UTC, with the new parent potentially being known as Collins Aerospace).

And the political situation, particularly in Canada where the name Boeing is now almost anathema as a result of the Boeing-driven trade dispute, and in the UK where significant parts of the C Series are manufactured, cannot be overlooked either.

Some movement around the edges of that trade dispute, which has seen condemnation from many in the industry – including key Boeing customers – is also likely, particularly since the Airbus-C Series announcement included final assembly within the United States. While Boeing and some observers noted at the time of the deal that the Mobile aspect is unlikely uniquely to resolve the issues, it will go a long way with key elements of the protectionist movement within US government decisionmakers.

As an Airbus spokesperson put it, “US tariffs for aircraft assembled in the US and for US carriers? Debatable. What’s for sure is that it’ll be good for

The Pratt & Whitney PurePower on the Bombardier C Series.

JOHN WALTON



US jobs and the local economy. It's really too early to give details about production split between Canada and the US. The next hurdle is regulatory approval which could be around mid-2018. Until then, it's business as usual and Airbus will compete to win orders."

Probably not too hard, though, if Airbus wants to ensure the C Series can approach the higher end of its market.

The C Series and the A319neo allow Airbus to attack the market from both ends

It's clear that Airbus sees the 150-passenger market as sizeable, although neither sales of the smaller members of the A320neo nor Boeing 737 MAX families of aircraft have proven the case. Airbus is not currently planning to produce an A318neo, with the double-shrunk A318 not proving a big sales winner since its introduction nearly two decades ago.

Even the A319neo has not sold well, with only 51 aircraft ordered according to the most recent set of A320neo family program numbers provided by Airbus to *Australian Aviation*.

Boeing, meanwhile, boosted the size of the 737 MAX 7 from the current 737-700 to provide another option for airlines to hit the 150-passenger sweet-spot to enable them to use three rather than four crewmembers to operate a narrowbody, and even this has not sold well.

This is often referred to as the "too much airplane" problem, where frames that find wild success in larger options are, proportionally, less efficient and less economically attractive to airlines than their larger siblings. The C Series, where the central aircraft of the family is the 130-160-passenger CS300,

“It's clear that Airbus sees the 150-seat market as sizeable.”

An Air Baltic CS300 departs Berlin Tegel Airport. ROB FINLAYSON

has also seen some success in the 108-133-seat CS100 variant, with the Airbus acquisition making the eventual development of a larger CS500 more likely. That CS500 would likely seat 150 in a two-class layout, with 40 or so additional passengers in a max-pax configuration.

For the 100-150 seat segment, Airbus believes more than 6,000 aircraft will be required over the next 20 years, although Bombardier's Cognard tells *Australian Aviation*, rather surprisingly, that "we don't have the specifics by size" for the C Series' part of that.

Declining to discuss the specifics of the combined strategy, "we will continue to showcase and position the CS300 as the perfect small single-aisle aircraft for longer-range missions," Cognard says.

"The C Series is highly complementary to Airbus's single-aisle aircraft family, which was designed for more than 150 passengers. Our combined product portfolio will allow us to serve customers better. At the end of the day, the customer will be able to have the choice and select what's best in terms of efficiency for specific missions."

The segment itself is currently filled by the A319, a few scattered A318s, the Boeing 737-700, -500 and -300, plus a variety of ageing regional jetliners or airliners at the smaller end of the scale like the Boeing 717, Avro RJ/BAe 146, Embraer E-Jet, or the Fokker 100 (see September 2017 *Australian Aviation* for more on the Fokker).

Something must replace these smaller jets, although the market is not flooded with choices. The C Series is by far the most comfortable option. It also offers short field performance like

the Avro and Embraer, crucial for niche markets like those of C Series launch customer Swiss.

It seems likely that the CS100's niche is set, but the overlap between the CS300, any proposed CS500, and the A319neo remains murky. This may not necessarily be a problem: airlines want an airframe at the 150-passenger sweet spot, but for their own individual layout of passenger accommodations and combination of recliner seats up front, extra-legroom economy, and regular economy.

A premium-heavy carrier may well find a 150-seater A319neo fits the bill perfectly, especially if it can drive efficiencies by already operating a fleet of A320ceo and A320neo family aircraft, without needing to itself operate smaller aircraft, particularly when constrained by scope clauses as in the United States. A low-cost operation may find value in a 150-seater CS300, with a few rows of extra-legroom economy reducing the airframe from its maximum 160-passenger layout. A regional niche operator may hit that 150-seater mark with a small set of business class recliners up front. An eventual CS500 allows smaller players who favour the C Series to upgauge to a larger airframe for key routes without needing to add an A319neo operation into their cost base.

Airbus will add its sales muscle at a key time — both for the C Series and for Airbus

Clearly, part of the Airbus move is to open global doors that a small airliner manufacturer in Québec cannot.

"The C Series has now been in service for over a year and has flown more than 1.5 million passengers, and I am excited to witness the mounting interest for the C Series as airlines are witnessing its outstanding performance," Bombardier's Cognard enthuses to *Australian Aviation*.

"I am confident that this partnership with Airbus will further accelerate our discussions with them. In the industry, we can all agree that Airbus is a marketing and sales powerhouse. Bombardier will benefit from Airbus's global reach. They have a strong customer base in all key regions of the world and a support network that is a key element that airlines take in consideration when selecting an aircraft for their fleet.

"On the one hand, we will benefit from a strong sales force and extensive



customer support network. On the other hand, because they have such an impressive order book, we will also benefit from a procurement standpoint. Simply put, we will gain more volume, while reducing production cost.”

Airbus’s scale also includes home-ground advantage in a number of markets, not least because it has final assembly lines or major manufacturing hubs in France, Germany, China, the US, Spain and the UK. With the C Series acquisition it will now add Canada to that list. Many of Boeing’s objections to the C Series as a foreign interloper – however spurious and protectionist they may seem to some observers – are mitigated to some degree by Airbus’s decision to base at least some C Series assembly in its Mobile, Alabama facility.

It is indeed an unexpected twist of fate that Mobile should be the key winner out of Boeing’s trade fracas with Bombardier, although Bombardier’s Cognard confirmed to *Australian Aviation* that “the Mobile line will be dedicated to the aircraft for US airlines.”

Airbus’s sheer weight will also be a plus for the C Series. To start with, the A320neo and C Series programs can work together on supplier negotiations, although it must be stated that neither of the programs has distinguished itself on this front, whether with managing engine makers or interiors suppliers. The argument that the combination of the world’s largest airliner program with one of the smallest will be the proverbial straw that breaks the supplier camels’ backs is not entirely convincing.

The personalities involved, however, may be. Longtime Airbus sales chief John Leahy, he of the “cute little airplane” jibe about the C Series, announced his retirement at this year’s Paris Airshow, and he will be keen to go out with a bang, whatever the eventual date of his departure ends up being. A series of large orders for the C Series, either in conjunction with other Airbus products or not, would be the capstone to Leahy’s career.

His successor – whoever that may be, now that erstwhile anointed successor Kiran Rao has ruled himself out and the airframer is looking externally – will be keen to establish himself in Leahy’s shoes, leading to more impetus for sales. Airbus has certainly never been shy of making big deals to make a big splash, so look for news at the regional airshows leading



The C Series has been in airline service for over a year now. [@BFINLAWSON](#)



Ensuring a future for the C Series’ spacious cabin is a big #PaxEx plus. [JOHN WALTON](#)

up to Farnborough 2018, such as an order from Egyptair at the Dubai show for 12 CS300 plus options for 12 more.

The crux is how the rest of the market settles

“This partnership has no impact on our Q400 and CRJ programs,” Bombardier’s Cognard insists. “We remain committed to both programs and we are driving their transformation. We have recently gained more traction for our regional aircraft. There was a lull in the market, but things are picking up and the recent order from Spice Jet for up to 50 Q400s signals that there is a need for higher-performing and larger turboprops like ours. As for the CRJ, we have launched the new Atmosphere cabin and it will be the norm for all our deliveries starting in the second quarter of 2018.”

The key question is, of course, what the angle is for Bombardier to remain involved in the commercial aircraft market, and indeed Airbus’s acquisition of the C Series may well be the first step in Bombardier cutting its commercial ties. It’s not beyond the realms of possibility that COMAC sees value in the Q400 program, nor that there is some residual value left in the CRJ, which feels very long in the tooth. It’s also unclear how closer working between Airbus and Bombardier will affect the turboprop market, given that Airbus is a half owner of the Q400’s principal competitor, ATR.

“Simply put, we will gain more volume, while reducing production costs.”

FRANÇOIS COGNARD

Could a gap in the market here spur the introduction of a new competitor, despite much writing on many walls in many languages about the margins in the commercial aircraft business?

The response from Boeing, and indeed Bombardier’s primary competitor Embraer, will also be key. The two companies have worked together in the past, including on the KC-390 medium airlifter and on other similarly-sized ventures that have yet to be revealed publicly.

Indeed, part of Delta Air Lines’ objection to the Boeing trade dispute was that Boeing’s inadequate response to its request for proposals were smaller Embraer E-Jets. Will Embraer launch a further stretch of the E-Jet program to compete with the lower end of the C Series and to bridge the gap to the 737 MAX 7? Will Boeing launch a 737 MAX 6.5? Will Mitsubishi’s MRJ get involved somehow?

None of these options seems particularly compelling, but partnerships can often spur unexpected developments.

Chinese and Russian airframers, too, will be watching the situation closely. The fledgling MC-21, C919, ARJ21 and indeed the CRJ929 are likely to benefit, albeit slightly, from even the perception of fewer players in the market. Airbus’s acquisition of the C Series – “acqui-hire” or not – may feel like a loss given the numerous rumours of a Chinese takeover, but these players are in it for the long haul, and may gain a greater overall benefit from developing their own fixes to overcome the hurdles they currently face.

All eyes will be on the wedding plans during the period of the Airbus-Bombardier engagement to see if ardours are cooling, feet are getting cold, or whether the attraction remains as mutual as it now seems. [A](#)

Traffic

Aviation arrivals and departures across the region

GORDON REID

Qantas 787-9 VH-ZNA touches down at Sydney Airport at the end of its delivery flight on October 20. VICTOR PODY



Qantas Group news

In this issue we report the delivery of the first 787-9 to join the Qantas fleet.

Qantas took delivery of **787-9 VH-ZNA** *Great Southern Land* msn 39038/615 in Sydney on October 20 after the aircraft ferried in from Seattle/Paine Field via Honolulu as QF7879. VH-ZNA then ferried from Sydney to Melbourne as QF6161 on October 27 before entering into service on November 1 when it operated QF481 from Melbourne to Perth.

After maintenance in Manila with Lufthansa Technik (Traffic/November) **A380-842 VH-OQF** departed to Sydney on October 14 as QF6019.

A380-842 VH-OQL ferried from Sydney to Manila as QF6009

on October 15 for maintenance with Lufthansa Technik.

737-838/W VH-VZR operated QF77 from Perth to Singapore on October 21 before ferrying as QF6006 to Seletar for painting in the new Qantas livery. On completion VH-VZR ferried to Singapore on November 3 as QF6005 and the same day returned to service as QF72 from Singapore to Perth.

737-838/W VH-VZW operated QF71 from Perth to Singapore on November 3 and after arrival it was hangered to be painted in the new Qantas livery.

Qantas/Jetconnect withdrew **737-838/W ZK-ZQA** from service on October 25 after the aircraft operated QF124 from Auckland to Brisbane. The 737 was cancelled from the New Zealand register

on October 25 and the same day returned to the Australian register as **VH-VZF**, a registration it carried briefly when delivered to Qantas in March 2009.

QantasLink Dash 8-Q315 VH-TQH ferried from Brisbane to Townsville as QLK1421 on October 12 where on arrival it entered the Flying Colours hangar for repainting in the new Qantas livery. Now named *Dubbo* VH-TQH returned to Brisbane from Townsville as QLK1484 on October 24.

Dash 8-Q315 VH-TQY ferried from Brisbane to Townsville as QLK101 on October 24 for repainting in the new Qantas livery.

Dash 8-Q402 VH-QOA operated QF2475 from Mount Isa to Townsville on September 28 with the aircraft then entering the Flying

Colours hangar for repainting in the new Qantas livery. On completion of the work in Townsville **VH-QOA** departed to Brisbane as QF508 on October 11.

Jetstar ferried **A320-232 VH-VQM** as VOZ8997 from Melbourne to Darwin and Seletar on October 10 for planned maintenance.

Dash 8-Q315 VH-SBI returned to Auckland on October 4 from Tamworth via Brisbane and Norfolk Island after completing planned maintenance.

Dash 8-Q315 VH-TQL departed Auckland as QF6715 on October 5 for Norfolk Island and Brisbane to Tamworth (arriving October 6) for planned maintenance.

Jetstar Pacific was planning to take delivery of **A320-232/W**

VN-A574 msn 7909 in early November while forthcoming A320-232/W deliveries are **VN-A575** msn 7922, **VN-A576** and **VN-A577**.

Airline news

In this issue we report the delivery of a Fokker 100 and a Fokker 70 to Alliance Airlines.

Air New Zealand placed **787-9 ZK-NZL** into service on October 15 when it operated NZ101 from Auckland to Sydney.

787-9 ZK-NZM msn 38180/624 made its maiden flight on November 1 when it departed Charleston for Myrtle Beach before returning to Charleston. ZK-NZM is planned for delivery to Air New Zealand in late November.

777-319ER ZK-OKP ferried from Singapore to Auckland as NZ6012 on October 31 after completing planned maintenance.

777-219ER ZK-OKA ferried from Auckland to Singapore as NZ6002 on October 30 for planned maintenance.

Air New Zealand Link/Air Nelson Dash 8-Q311 ZK-NEC, which had been in Townsville for a repaint (Traffic/November), ferried from Townsville to Brisbane, Norfolk Island and Auckland as SX11733 on October 12.

Air Niugini ferried **767-341ER P2-PXV** from Xiamen where it had completed planned maintenance to Port Moresby as PX6009 on September 27.

Fokker 100 P2-ANF, having completed its planned maintenance at Seletar, departed on October 21 as PX4397 for Denpasar, Darwin and Port Moresby where it arrived on October 24.

Fokker 70 PH-KZA msn 11567 departed Amsterdam on October 6 on ferry to Seletar via Trabzon, Al Ain and Nagpur. At Seletar PH-KZA will receive further maintenance before delivery to Port Moresby.

Fokker 70 PH-WXD msn 11563 was cancelled from the Dutch register on September 20 prior to delivery to Air Niugini as **P2-ANZ**.

Fokker 70 PH-KZD msn 11582 was cancelled from the Dutch register on September 25 prior to delivery to Air Niugini.

F28-4000s P2-ANI and **P2-ANS**, which have been in

Qantas has transferred 737-838 ZK-ZQA from Jetconnect to Qantas domestic, reregistering it VH-VZF. CALEB HOTZ



storage near the PNGDF hangar at Port Moresby since February 2009, were moved in early October to the airport fire service practise area. There the F28's share a compound with derelict **DC-3 N55894** ex P2-ANX, which still carries Air Niugini titles.

Alliance Airlines took delivery of **Fokker 70 VH-NKQ** msn 11572 ex OE-LFR at Brisbane on October 11 after the aircraft ferried in from Bratislava as SX11726.

The ferry flight was contracted to Southern Cross and was routed via Trabzon, Al Ain, Hyderabad, Subang and Kupang. VH-NKQ entered service on October 30 when it operated QQ880 from Brisbane to Trepell.

Fokker 100 VH-UQD 11460 ex OE-LVO, which was registered to Alliance on June 28, was delivered to Brisbane on October 30 as SX11736. The ferry flight was operated by Southern Cross and departed Bratislava on October 27,

routed via Trabzon, Al Ain, Hyderabad, Subang and Kupang.

Fokker 100 VH-UQG msn 11446 ex OE-LVC, which was registered to Alliance on July 24 (Traffic/September), departed Bratislava on October 8 for Norwich where it was painted in Alliance colours.

Fokker 100 OE-LVF msn 11483 was registered to Alliance Aviation Slovakia on October 17 while **Fokker 70s OE-LFI** msn 11529 and **OE-LFQ** msn 11568 were registered to Alliance Aviation Slovakia on August 17.

Virgin Group news

Virgin Australia ferried **777-3ZGER VH-VPE** as VOZ9949 from Sydney to Singapore on October 18 for planned maintenance.

737-800/W VH-YWD msn 41020/6664 *Tiramirakura* operated its maiden flight on

October 28 when it departed Renton for Boeing Field.

Virgin Australia Regional Airlines (VARA) ferried **Fokker 100 VH-FNN** *Cape Naturaliste* into Perth from Seletar and Port Hedland as VOZ9942 on October 26 after completing maintenance at Seletar and painting at Subang.

Regional airline news

In this issue we report the deliveries of a Dash 8-100 to Air Kiribati, a Saab 340B to Regional Express and a DHC-6-400 to Fiji Link, while a Dash 8-100 of Skytrans was reduced to spares.

Air Kiribati took delivery of **Dash 8-102A C-FRXH** msn 388 at Tarawa on October 30 after the aircraft ferried in from Great Falls, Concord and Honolulu. This aircraft was previously operated in Australia by Skytrans as VH-QLL.

Fiji Link took delivery of **DHC-6-400 C-GUVT** msn 956



QantasLink Q400 VH-QQA now repainted in the new Qantas colours. ANDREW BELZACKI



Hevilift ATR 42 VH-YWH at Cairns. ANDREW BELZACKI



at Nadi on October 30 after the aircraft ferried in from Calgary via Spokane, Santa Rosa, Honolulu and Majuro.

GAM Air cancelled **Dornier 228-202 VH-VJD** from the register on October 24 with the aircraft reported to be planned for delivery to an operator in Kenya.

Hevilift positioned **ATR 42-320 P2-KSR** from Mount Hagen to Cairns on October 4. On October 19 the ATR 42 was then registered **VH-YWH** to Hevilift Australia.

Regional Express took delivery of **Saab 340B N422XJ** msn 340B-422 at Adelaide on October 15 after the all-white aircraft completed its ferry flight from Springfield/MO via Lexington, Renton, Hilo, Apia, Brisbane and Orange. It was registered to Regional Express on October 18 as **VH-ZXU**.

Skytrans Dash 8-102 VH-QQC was scrapped in Cairns in early October and was de-registered on October 16. The Dash 8 had been stored at Cairns since late October '14 and reportedly last flew with Skytrans on October 31 '14 as SKP67 from Mount Isa to Cairns.

Bizjet news

In this issue we report the addition of a Global Express to the Australian register, the delivery

of a Citation CJ3+, the departures of a Gulfstream 650ER and a Challenger 604, plus the scrapping of a New Zealand-registered Westwind II.

Global Express VH-UPH msn 9281 ex N981TS was registered to Bluefield of Abbotsford, Victoria on October 9 and was planned for delivery to Essendon in November.

Citation CJ3+ N297AA msn 525B-0524 was delivered to Wellington on October 12. It had departed Wichita on October 5 and ferried via Lincoln, Bellingham, Anchorage, Nome, Yelizovo, Sendai, Yap, Honiara and Norfolk Island. The CJ-3+ was registered **ZK-RJZ** to Tirohanga Holdings of Wellington on October 25.

Jetflight Air Services **Gulfstream 650ER N650AB** departed its Auckland base on September 6 for Seletar where

it was re-registered **N999DF** on October 10 to the Bank of Utah. N650AB was first delivered to Auckland in early December '14.

Lincox Express Charter **Challenger 604 VH-LEF** was cancelled from the register on October 27. Earlier the Challenger had departed Essendon on October 16 for Apia, Honolulu and Tucson where it arrived on October 18.

Pacific Jets **Westwind II ZK-PJA** had been scrapped at Auckland by mid-October having been cancelled from the New Zealand register on June 28.

The registered operator of **Learjet 60 VH-AND** changed from Seletar Jet Charter to Pacific Flight Services of Condell Park, NSW on October 3.

Citation Ultra VH-MMC changed its registered operator from Flight Options (Australia)

to Mackeller Mining Equipment of Maroochydore, Queensland on October 12.

On October 4 the registered owner of **Hawker 800XP VH-RIU** changed from Bezza Holdings to Taverners Aviation of Melbourne and the registered operator changed from Australian Corporate Jet Centres to Execujet Australia of Mascot, NSW.

Textron Aviation **Sovereign N578AB** has made another demonstration visit to Australia, arriving in Brisbane from Seletar and Darwin on October 17. It continued to Sydney on October 18 and after overnighting departed to Darwin and Seletar.

In propjet news **King Air 350 N841KA**, which is registered to Ballard Aviation of Newton, Kansas, departed Brisbane for Port Moresby on October 8 before continuing to Guam on October 9 and Kansai on October 10.

Sutherland Aviation **King Air 300 VH-WXC** msn FL-506 was cancelled from the register on October 26 after being sold in the United States as **N506KB**. On November 6 it departed Bankstown for Cairns, Biak, Saipan and Narita where it arrived on November 7.

Air Alize **King Air B200 F-OIAA** departed its Noumea base for the Gold Coast and Ceduna on October 17 before continuing to Perth on October 18.

Coral Sun Aviation **King Air 200 T3-JMR** departed Cairns for Honiara on October 20 before continuing to its Tarawa base on October 21.

Gulfstreams galore

Lockheed Martin **Gulfstream G650ER N650VC** arrived in Sydney from Honolulu on October 2 before continuing to Melbourne on October 4 via Nowra and East



Gulfstream G650ER A7-CGA at Cairns on October 21. ANDREW BELZACKI

Sale. N650VC departed Melbourne for Wellington on October 5.

Aramco Associated **Gulfstream G650ER N650XA** arrived in Sydney from Subang on October 28 before continuing to Melbourne on October 30.

JP Morgan Chase Bank **Gulfstream G650ER N651CH** arrived in Sydney from Honolulu on October 23 before departing to Shanghai on October 25.

RB Aircraft Leasing **Gulfstream G650 N829JV** arrived in Essendon from Auckland on October 24. N829JV operated a return flight from Essendon to Sydney on October 27 before returning later the same day to Auckland.

Gulfstream G650 N988HK arrived in Sydney from Hong Kong on October 22 before returning to Hong Kong on October 28.

Gulfstream G650 N1777M arrived in Sydney from Honolulu on October 30 before continuing to Cairns on November 1. N1777M departed Cairns for Honolulu on November 5.

Qatar Executiv **Gulfstream G650ER A7-CGA** as QQE580 arrived in Cairns from Singapore on October 21.

Daimler Chrysler **Gulfstream G650ER D-AWWW** as DCS103 arrived in Melbourne from Don Muang on October 10 before continuing to Sydney on October 11. It departed Sydney for the Gold Coast and Melbourne on October 12 before continuing to Adelaide and Don Muang on October 13.

Jet Aviation **Gulfstream G650ER VP-CCW** arrived in Sydney from Hong Kong on October 30 before continuing to Melbourne on October 3. It departed Melbourne for Hong Kong on November 3.

Gulfstream G550 N260Z arrived in Melbourne from Haneda on October 3 before departing to Don Muang on October 4.

Gulfstream G550 N308KG arrived in Cairns from Hong Kong on October 21. It departed Cairns for the Gold Coast on October 28 before continuing to Hong Kong on October 29.

Colleen Corporation **Gulfstream G550 N585DW** arrived in Melbourne from Seletar on October 31 and departed to Shanghai on November 1.



G650 N988HK at Sydney on October 22. BRIAN WILKES

Conoco Phillips **Gulfstream G550 N793CP** arrived in Sydney from Honolulu on October 8 and was later noted at Brisbane, Gladstone and Perth before departing Brisbane for Honolulu on October 13.

DeerJet **Gulfstream G550 B-8132**, which carries Hunter titles, arrived in Sydney from Auckland on October 7 before departing to Nanchang on October 8.

Execujet Europe **Gulfstream G550 HB-JKI** arrived in Sydney from Subang on October 11. It departed Sydney for Scone on October 14 before returning to Sydney on October 15.

Century Ocean **Gulfstream G550 VP-CPY** arrived in Perth from Hong Kong on October 1 and departed to Saipan on October 3.

Pegasus Elite **Gulfstream V N626JE** arrived in Sydney from Honolulu on October 22 and later visited Melbourne and Hobart before departing Melbourne for Honolulu on October 29. It returned to Melbourne from Honolulu on October 31 before departing again to Honolulu on November 1.

Orfro **Gulfstream V N940AJ** arrived in Sydney from Haneda on October 13 and the same day continued to Brisbane.

MJets **Gulfstream V HS-WEH** arrived at the Gold Coast from Don Muang on October 18 before returning to Don Muang on October 27.

Aramco Associated **Gulfstream G450 N584A** arrived in Sydney from Subang on October 30 and departed to Halim on November 6.

Gulfstream G450 B-LCK arrived in Perth from Kota Kinabalu on October 1 before departing to Port Hedland and Saipan on October 3.

Living World Christian Center **Gulfstream IV N316VB** arrived in Sydney from Surabaya on October 26 and departed to Nadi on October 27.

Columbia Asset Trust **Gulfstream IV N555LK** arrived in Perth from Seletar and Port Hedland on October 16 before departing Perth for Seletar on October 21.

Aviation Enterprises **Gulfstream IV N878SM** arrived at the Gold Coast from Nadi on October 27 and departed to Sydney on November 1.

Overseas bizjets

Citigroup **Global 6000 N805WM** arrived in Sydney from Don Muang on October 25 and departed to Honolulu on October 29.

GAMA Aviation **Global 6000 G-SALD** as GMA855 arrived in Melbourne from Male in the early hours of October 16 before departing to Sydney on October 18. It departed Sydney for Male on October 20.

Business Aviation Asia

Global 6000 B-8105 arrived in Sydney from Shenzhen on October 9 and departed to Dongsheng, China on October 19.

Saab **Global 6000 SE-RMT** arrived in Canberra from Singapore and Sydney on October 3 before departing to Don Muang on October 4.

Symphony Millenium **Global 6000 VP-BVM** arrived in Sydney from Subang on October 4 and departed on October 5.

Vista Jet **Global 6000 9H-VJE** as 'VistaJet 757' arrived in Melbourne from Shanghai on October 17. It departed to Sydney on October 19 before continuing to Hong Kong on October 20.

VistaJet **Global 6000 9H-VJH** as 'VistaJet 804' arrived in Sydney from Honolulu on October 22 and departed to Denpasar on October 28.

VistaJet **Global 6000 9H-VJK** as 'VistaJet 836' arrived in Sydney from Hong Kong on October 1 and departed to the Gold Coast on October 5.

TAG Aviation Asia **Global 5000 B-LRH** as BWJ968 arrived in Sydney from Shanghai on October 9 and departed to Hong Kong on October 11.

Aviation Jolina **Global Express C-GSAP** arrived in Melbourne from Honolulu on October 20 before returning to Honolulu on October 27.

ZYB Lily Jet **Global Express**



Global 6000 9H-VJH at Sydney on October 22. BRIAN WILKES



M-S Thriveri Earth Movers Learjet 45XR VT-TRI flies into Perth on November 2. KEITH ANDERSON

B-7699 arrived in Sydney from Guangzhou on October 2 before returning to Guangzhou on October 3.

Global Express B-8196 arrived in Adelaide from Sanya on October 15 before returning to Sanya on October 19.

GAMA Aviation **Global Express VP-CCN** arrived in Sydney from Hong Kong on October 27 before returning to Hong Kong on November 1.

Challenger 605 N15VC arrived in Sydney from Hong Kong and Darwin on October 3 before continuing to Melbourne on October 8. It departed Melbourne for Darwin and Hong Kong on October 11.

FAI Air Services **Challenger 604 D-AFAD** as IFA1776 arrived in Perth from Padang, Sumatra on October 23 before departing the next day to Singapore.

M-S Thriveri Earth Movers **Learjet 45 VT-TRI** arrived in Brisbane from Haneda, Guam and Port Moresby on October 31 before continuing to Mackay on November 1. It was later sighted at Alice Springs, Perth, Kalgoorlie, Sydney and Mount Isa before departing Darwin for Denpasar on November 5.

Aerial survey-configured **Learjet 36A N82GG** arrived at the Gold Coast from Nadi on October 6 and was later noted at Canberra, Adelaide, Essendon and Avalon before arriving in Sydney on November 3. The Learjet previously operated in the South Pacific from October 10 '15 to June 6 '16.

Premier Jets **Learjet 36A N363PJ** arrived in Melbourne from Pago Pago and Norfolk Island on October 27 and departed to Norfolk Island on October 28.

Canadian Utilities **Citation X C-FSDS** arrived in Perth from Majuro and Cairns on October 17 before departing to Brisbane

on October 19 and Majuro on October 20.

Cat Aviation **Falcon 7X HB-JSS** as CAZ601 arrived in Townsville from Honolulu on October 31 before continuing to Sydney on November 1.

Flying Lion **Falcon 7X VP-BZE** arrived in Perth from Reunion Island on October 23 and departed to Auckland on October 25.

Legacy 500 N712EA arrived in Brisbane from Halim and Darwin on October 18 before continuing to Sydney on October 20. It departed Sydney for Darwin and Halim on October 23.

Airmed **Hawker 800A N811AM** arrived in Brisbane from Honolulu, Majuro and Honiara on October 10 and departed over the reverse route on October 11.

Ferry flights

Baron G58 VH-EPO has been sold in the US, departing the Gold Coast for Norfolk Island and Pago Pago on October 25. It was cancelled from the Australian register on November 3 before being registered **N16BK** to Bay Leasing of Norfolk, Virginia on November 6.

Baron G58 VH-PWP arrived in Auckland from Bankstown and Sydney on October 5.

Cessna 208B/EX N314CL, registered to Gateway Air Center of Merced, arrived at the Gold Coast on October 8 after completing its trans-Pacific ferry from Merced

via Honolulu and Apia. **N314CL**, which was on delivery to Outback Spirit Tours, later continued to Bankstown.

Aviair **Cessna 208B VH-KSA** departed Kununurra for Alice Springs on October 19 before continuing to Bourke and Scone where it arrived on October 21.

Skydive the Beach **Cessna 208B VH-SFX** departed Wollongong for the Gold Coast and Lord Howe Island on October 18 before continuing to Norfolk Island on the 19th and Kerikeri and Wanaka on the 20th. It was cancelled from the Australian register on October 25.

Myanmar Airways **Cessna 208B XY-AJK** arrived at Jandakot from Port Hedland on October 16 while Myanmar Airways **Cessna 208B XY-AJL** arrived in Perth from Port Hedland on October 16. XY-AJK was registered **VH-TQF** and XY-AJL became **VH-TQV** with Acena Nominees of Adelaide on October 26.

Dimonimair **Cessna 208B PK-HVT** arrived in Cairns from Merauke on October 8 and departed to Horn Island and Biak on October 18.

Sander Geophysics **Cessna 208 C-GSGJ** departed Kununurra for Broome on October 15 before continuing to Subang on the 17th.

Cessna T210L N210EU arrived in Broome from Denpasar on October 12 during a round-the-world flight. It was later noted

at Alice Springs and Bankstown before departing Sydney for Auckland and Ardmore on October 20.

Cessna 182T N132CT departed Bankstown for Griffith and Adelaide on October 3 and later arrived at Jandakot from Kalgoorlie on October 5. After being cancelled from the US register on October 11 it was registered **VH-ZHD** to Airflite on October 27.

Cirrus SR22T N663LF, which is registered to Strong Tower Services of Newcastle, Delaware, departed Moorabbin for Bankstown on October 18.

Diamond DA-62 VH-DNU arrived at the Gold Coast on October 5 from Ardmore, Auckland and Norfolk Island.

Diamond DA-42 F-OPIL was delivered to Noumea/Magenta on November 4 after ferrying in from Ujung Pandang, Darwin, Mount Isa, Brisbane and Noumea/La Tontouta.

FU-24-900 VH-HVP departed Morwell for Essendon on October 16 before it made a direct crossing of the Tasman to Queenstown where it arrived on October 17. Cancelled from the Australian register on October 20 VH-HVP was registered **ZK-EUA** on October 27.

Airvan 8 VH-LPX GA8-06-108 departed Latrobe Valley on October 22 for Essendon and Queenstown where it arrived on October 23. It was cancelled from the Australian register on October 24 before becoming **ZK-SLD** with Southern Lakes Aviation of Queenstown on November 2.

Glenorchy Air Services **Airvan 8 ZK-FSS** changed its registration to **ZK-ORC** on October 19.

New Airvan 8 msn **TC320-17-245** has been sold in Canada.

Skydiving door-fitted **P-750XLs ZK-KDO** msn 211 and **ZK-KEB**



Tui Airways 757-200 G-OOBF at Cairns on October 11. ANDREW BELZACKI

msn 213 departed Hamilton on October 21 on delivery to the Chinese Sport Parachute Industry at Wuhan. The delivery was operated by Hazair of Albury and routed via Lord Howe Island, Gold Coast, Longreach, Darwin, Manado and Laoag.

P-750XL ZK-KDP msn 212 is also fitted with a skydiving door and departed Hamilton on November 1 on delivery to the Chinese Sport Parachute Industry at Nanchang. Delivery routing was via Lord Howe Island, Gold Coast, Longreach, Darwin, Manado and Laoag.

PA46-350P Malibu Mirage VH-BHR has been sold in New Zealand, departing Coffs Harbour on October 23 for Lord Howe Island, Auckland and Wellington where it arrived on October 25.

Kodiak/FP N181KQ, which transited Australia eastbound between July 6 and July 9 (Traffic/September), departed Ardmore on October 20 for Auckland, Cairns, Darwin and Denpasar where it arrived on October 22. Kiwi Air **Reims F406 ZK-XLF** departed Port Moresby for Cairns and the Gold Coast on October 10 before continuing to Lord Howe Island and Auckland on October 11.

RV-10 ZU-IHF arrived at the Gold Coast from Auckland on October 4 during a round-the-world flight. It was later noted at Cairns, Alice Springs and Bunbury before departing Broome for Halim on October 22.

Heavy metal

Luftwaffe **A340-300 16+01** as GAF921 arrived in Perth from Singapore on November 3 before continuing to Sydney on November 4 and Auckland on November 5.

Volga-Dnepr **An-124 RA-82047** as VDA4096/4097 arrived in Rockhampton from Johor Bahru and Darwin on October 15. After loading four RSAF AH-64Ds it departed to Paya Lebar as VDA4052 on October 16. As VDA4053 the Antonov returned to Rockhampton ex Johor Bahru on October 19 before departing to Paya Lebar on October 20.

Three Nippon Cargo freighters brought in equipment for use in the Australian MotoGP at Phillip Island.

Nippon Cargo **747-8KZF**



Luftwaffe A340-300 16+01 arrives in Perth on November 3. DUNCAN WATKINSON

JA14KZ as NCA6177 arrived at Avalon from Narita on October 17 before returning to Narita as NCA624 on October 17. It returned again to Avalon from Narita as NCA6181 on October 17 before departing to Narita as NC628 on October 18.

Nippon Cargo **747-4KZF**

JA08KZ as NCA6183 arrived at Avalon from Narita on October 18 before returning to Narita as NCA630 on October 18.

Nippon Cargo **747-4KZF**

JA05KZ as NCA6179 arrived at Avalon from Narita on October 17 before returning to Narita as NCA626 on October 17.

Taking MotoGP equipment out of the country were Atlas Air **747-47F N409MC**, which as QF7581 arrived at Avalon from Sydney on October 24 and departed the same day as QF7581 to Kuala Lumpur; and Singapore Cargo **747-412F 9V-SFP** as SQ7102 which arrived at Avalon from Singapore on October 24 and departed to Kuala Lumpur and Singapore as SQ7101.

Atlas Air **767-3SI(ER) N640GT** as GTI8187 arrived in Darwin from Ontario, California and Honolulu on October 15 and departed to Guam as GTI8188 on October 17.

Ethiopian Airlines **767-3BG(ER) ET-ALH** arrived in

Darwin as ETH8805 from Bangkok on October 22 and returned to Bangkok as ETH8804 on October 23. The 767 wears United Nations titles.

Tui Airways (formerly Thomson Airways) **757-28A/W G-OOBD** as TOM921 arrived in Cairns from Apia on October 5 before departing to Siem Reap on October 7.

Tui Airways **757-28A/W G-OOBF** as TOM922 arrived in Cairns from Apia on October 9 and departed to Siem Reap on October 11.

Icelandair **757-27B TF-FIW** callsign 'Icelandair 1404' arrived in Hobart from Auckland on October 8 and departed to Denpasar on October 11. The 757 wears Abercrombie and Kent titles.

Orient Global Aviation **737/74T/BBJ VP-BEL** arrived in Brisbane from Honolulu and the Gold Coast on October 29 before departing to the Gold Coast and Seletar on November 2.

737-7JB/BBJ VP-CKG arrived in Sydney from Guangzhou on October 30 before returning to Guangzhou on November 2.

Nanshan Jet **737-7GJ/BBJ B-5286** arrived in Mackay from Shanghai and Brisbane on October 2. It departed Mackay for Brisbane on October 6 before returning to Shanghai on October 9.

Later in the month on October 31 it transited Darwin while en route from Auckland to Singapore.

Niger Government **737-75U/BBJ 5U-GRN** *Mont Greboun* callsign 'Niger 1' arrived in Perth from Colombo on October 10. The BBJ departed for Canberra on October 12 before continuing to Sydney on October 13 and Jakarta on October 15.

Air Philippines **Dash 8-Q314 RP-C3017** as GAP5007 arrived in Cairns from Ambon and Darwin on October 26 for maintenance.

Volga-Dnepr **Il-76-90VD RA76950** as VDA4076 arrived in Perth from Jakarta on October 21 before departing to Johor Baru on October 28 as VDA3097.

Safair **L-100-30 ZS-JIV** as SFR530 arrived in Christchurch from Cocos Island and Adelaide on October 18. As in previous years the L-100 will be operating flights for the Italian Antarctic expedition. On October 24/25 ZS-JIV operated a return flight from Christchurch to Terra Nova Bay.

10 Tanker Air Carrier **DC-10-30 N522AX/912** arrived at RAAF Richmond on October 31 from San Bernadino via Honolulu and Pago Pago. The DC-10 is planned to remain in south-east Australia for the duration of the 2017/18 bushfire season. **■**



Government of Niger BBJ 5U-GRN at Sydney Airport. LUKE MCDERMOTT

Win-wins do exist

Ten years of practical Part 137 regulations

In 2007, AAAA and CASA joined together on a joint roadshow to educate the aerial application industry on the introduction of the new Civil Aviation Safety Regulation Part 137 – Aerial Application. Ten years later and Part 137 is still the hallmark of safe, practical regulation.

The development of Part 137 was characterised by cooperation and mutual respect. CASA provided senior management oversight so that even the ongoing parade of CASA project officers (some eight individuals during the development of the Part) did not completely derail progress.

While it started as a vehicle to bring together a lot of disparate regulations, exemptions and orders, it was underpinned by a strong commitment to ‘simple rules for simple operations’ which took account of risk, the capacity of the industry and international harmonisation, especially with the US FAA Part 137 (13 pages) and the NZ CAA Part 137 (about 25 pages).

Use of the term ‘aerial application’ was an intentional strategy to remove decades of CASA hair-splitting in the classification of operations, where the same aircraft, the same pilot, similar equipment and techniques could do spraying or fertiliser, but not firebombing, oilspill or mosquito control. Part 137 fixed that overnight.

Another underpinning aim was to provide a ‘one-stop shop’ for aerial application operations, so that Part 137 would be well placed to inform both pilots and business owners how to operate in this environment, including flight and duty times and a range of provisions that were intended to act as sector-specific ‘exemptions’ against the anticipated CASR Part 91.

It was considered a significant advantage to keep the regulation as short as possible and expressed in terms that were relatively easy to understand. The later nonsensical drafting style adopted by CASA in

“
Development of Part 137 was characterised by cooperation and mutual respect.

Significant and inexplicable differences exist between fixed-wing and rotary aerial application operations.

LOCHIE CRAIG

dysfunctional Parts such as 61 was yet to come into vogue, and consequently Part 137 is both intelligent and intelligible.

While there is always a need for refinement, improvement and review or any regulation, Part 137 certainly passed the 80:20 rule of being mostly right.

The Part 137 Post Implementation Review was never conducted and in many ways that has been positive for the sector – allowing people to get a sound understanding of the regulation over the years. Some tinkering undertaken in recent years due to the knock-on effects of Part 61 and done without consultation with the sector led to ‘unforeseen consequences’ that resulted in further exemptions.

There are certainly some very positive initiatives that could be included in a revised Part 137, not the least being the inclusion of rotary-wing aerial application operations. This would provide massive relief from the confused mess of bad classification of operations, rules strewn throughout the orders, regulations and exemptions that is the current system – where significant and inexplicable differences exist between fixed-wing and rotary aerial application operations.

For example, someone in CASA simply took the decision in Form 1214 Part B – with no obvious head of

power, consultation or reason – to reclassify aerial work operations from the eight categories in CAR 206 to 43 separate categories – each requiring specific details in ops manuals and CASA permissions.

If CASA had pathways into their organisation to encourage discussions with industry on sensible rules and an engaged middle management that oversaw decisions to get an agreed strategic outcome, it would be possible to both improve clarity and safety and reduce red tape.

The development of Part 137, while sound, could be improved upon. The use of the CASA/AAAA sector risk profile for aerial application would be a good starting point, especially if combined with the DAS Directive relating to risk management and cost considerations.

However, the basics are still missing. The operational and standards silo of CASA still struggles with the concept of cooperation and ‘win-win’. It is still rooted in the culture of ‘we know better than you’ and the ‘Big R regulator’. This must change to drive safety.

CASA’s biggest challenge in the long term remains recruitment. Yes, induction and training are important (see the previous ICAO audit result), but getting people with the right outlook and the right attitude in the first place will be critical to turning CASA around.

The lessons of the success of Part 137 are strong if regulatory reform is to be completed by the end of 2018 as DAS Shane Carmody hopes.

Genuine engagement and discussion around risk and its management, recognition that industry does actually understand and want safe operations, and an acceptance that safety is generated every day in the field would be a good start.

As would a restructure of CASA that puts people with that underpinning culture into the regulatory reform control seat. ■



From the Regions

MIKE HIGGINS
CEO - RAAA



Pilot shortage bites

Aggressive and ongoing pilot recruitment strategies, particularly from international airlines, has seen an increasing pressure on regional airlines who are losing senior and experienced pilots. As the recruitment spreads to the major carriers, the trickle-down effect has seen further pressure being applied to our sector.

And in a double whammy, the latest government reform to Australia's temporary and permanent sponsored skilled migration programs had a significant detrimental impact on our short to medium pilot staffing plans. The government announced in 2017 that fixed-wing pilots, rotary-wing pilots and Avionics engineers were no longer eligible to be included on the Skilled Occupation List. Needless to say the RAAA and others lobbied for an opportunity to present some data to support our contentions that there were in fact critical shortages in these skilled occupations. We have had a partial win in that these occupations are now included on the Short Term Skilled Occupation List (STSOL).

However, this is still far short of where we need to be. These occupations are required to be included in the Medium and Long Term Strategic Skills List (MLTSSL). The RAAA will continue to advocate for the industry and we hope to reinstate these skilled occupations to the MLTSSL by January 2018.

A positive step

CASA has recently appointed a new senior aviation advisor, reporting directly to the Director of Aviation Safety (DAS).

This is very good news indeed as we now have improved confidence that the DAS will be receiving high quality advice from someone who has relatively recent airline industry experience along with a broad understanding of the many facets of the aviation industry.

Convention success

The 2017 RAAA Convention on the Gold Coast was excellent again. Find someone who attended and find out first hand just how important this event really is. It's not too early to start planning for



our 2018 event!

One of the many wonderful presenters was Jason Harfield from Airservices. Jason reported that the Accelerate program had delivered all its promises and the results are now there for everyone to see. While recording a 4.5 per cent growth in annual income last year, it achieved a 15.2 per cent cut in expenses compared to the prior year. This resulted in annualised savings of \$177 million and delivered an underlying net profit after tax of \$59 million.

The old Airservices had a ratio of five support staff for every four operational workers. Accelerate has turned that around so now there are four support staff for every five operational workers.

Importantly to RAAA members

➊ Airservices CEO Jason Harfield addresses the RAAA Convention. SETH JAWORSKI

➋ Winners of the 2017 RAAA pilot and engineering scholarships were announced at the RAAA Convention in late October.

SETH JAWORSKI



these efficiency and productivity gains have produced a reduction in total cost per flight hour by nine per cent on the previous year. In real terms this means that after flagging a 15 per cent price increase over five years, including an eight per cent increase in the first year, not only did Airservices not raise its service prices after all, but it will also hold these price levels right through to the end of 2019.

At that time, with continuing growth, they may be well-positioned to consider a price reduction, while still delivering on all their service commitments. That means, as a minimum, a price reduction in real terms of around 10 per cent over the next five years! This is a great good news story and a sensational way to end our conference.

TAAAF on the up

The Australian Aviation Associations Forum (TAAAF) continues to see exponential growth of 25 per cent in the last five months, and there are now over 20 participants.

The TAAAF is an alliance of the majority of Australia's major aviation associations to ensure the industry presents a united voice to government on key aviation issues and policy, characterised by expertise and a wide representation of people and organisations committed to aviation.

Visit the website at www.taaaf.org to learn more. Perhaps your association could consider an application to join with us?

A growing member base

The RAAA membership has continued to grow in 2017. We continue the important work of advocating on behalf of the industry on issues ranging from education and training, airport security, 457 Visa Scheme Changes, CASA reform and individual member issues.

The RAAA would like to acknowledge our most recent new members: Oz Runways, Southpac Aerospace, RMIT Flight Training, Devonport Airport, Tasman Cargo Airlines, TracWare and Airflite. 📌

For further information on these topics, contact the RAAA office: administration@raaa.com.au

Industry veteran lost in fatal Squirrel crash

The Australian Transport Safety Bureau (ATSB) is investigating a fatal helicopter accident at Hobart Airport on November 7 which claimed the life of Roger Corbin, prominent Australian helicopter industry veteran, highly experienced pilot and managing director of Hobart-based RotorLift Aviation.

Corbin and 33-year-old student pilot John Osborne were conducting a training sortie in AS350 BA Squirrel VH-BAA when the accident occurred. It is understood the pair was making an approach to Hobart Airport when the helicopter collided with terrain.

Osborne was extracted from the wreckage by emergency services and transported to the Royal Hobart Hospital in a serious condition.

"The accident seems to have occurred as the aircraft has approached the vicinity of the aerodrome, and come in for a landing-type manoeuvre," the ATSB's Transport Safety Investigator David Grambauer told a media briefing on November 9. "They have lost control of the aircraft, and it has impacted the terrain."

Grambauer said a preliminary factual report is expected to be released in December.

Corbin was 57 and leaves behind wife Allana and daughters Isabella, Indiana and Sophia.

Australian Aviation wishes to express its sincere condolences to the family and friends of Roger Corbin and to the team at Rotorlift.

QGAir orders new AW139s

The Queensland government has ordered two new Leonardo AW139 helicopters for aeromedical retrieval, SAR and policing operations with Queensland Government Air (QGAir).

The new AW139s are part of a \$47 million purchase of aerial assets for north Queensland announced on October 22 and will replace two older Bell 412s. Both new helicopters will be based in Townsville.



CHC Group became the first operator of the Leonardo AW139 super-medium helicopter in Australia when it began flying three of the type from its Karratha base to support Woodside operations on the North-West Shelf in November. CHC GROUP

The government has also ordered a new Cessna 208B Grand Caravan EX, to be based in Cairns from March 2018, for policing operations.

"The two new AW139 helicopters replace two ageing Bell helicopters which are more than 20-years-old," said Police, Fire and Emergency Services Minister Mark Ryan.

"They will have the ability to work with police and all emergency services, including aerial surveillance, search and rescue, and hospital patient transfers [and are] able to travel further and faster, providing more coverage for more Queenslanders."

Both helicopters are expected to enter service by December 2018, joining three AW139s already in service with QGAir.

QGAir operates five helicopters and seven fixed-wing aircraft from bases located in Brisbane, Townsville, Cairns, Mt Isa and Horn Island.

AHIA appoints Paul Tyrrell as CEO

The board of the Australian Helicopter Industry Association has appointed Paul Tyrrell as its inaugural chief executive.

Tyrrell, a former Regional Aviation Association of Australia (RAAA) chief executive, brings a wealth of in-depth aviation

knowledge and management experience to the new role, including an extensive familiarity with government procedures and protocols.

"We welcome Paul to the AHIA and look forward to the continued growth of our Association for the benefit of the Australian Helicopter Industry," said AHIA president Peter Crook.

"Living and working in Canberra for many years, Paul will be the initial point of contact for concerns from the helicopter sector."

Tyrrell took up the position on November 13.

Army Tigers to resume flying?

The Australian Army's fleet of 22 Airbus Helicopters Tiger ARHs could resume flying within weeks according to Chief of Army Lieutenant General Angus Campbell.

Responding to questions from the Senate's Foreign Affairs, Defence and Trade committee on October 25, LTGEN Campbell said the Tiger's "operational pause", put in place following the fatal crash of a German Army Tiger helicopter in August, should soon be lifted.

"With regard to when [flying will resume], we believe it might be in a matter of weeks," Chief of Army told the committee. "But I'm awaiting advice from the

Forces Commander, Major General McLachlan, on that issue."

LTGEN Campbell said an Australian Army test pilot was sent to Germany to help with investigations into the accident.

"We have sent a qualified Tiger test pilot to Germany, greatly and very positively received by the Germans, to assist in their work in investigation of the accident," he said. "We're liaising very closely with other Tiger user partners as well as the manufacturer on the issue. There are a couple of issues still at play, and the investigation remains open, but we think we're coming to the end of the pause."

While the Tiger is not flying, LTGEN Campbell noted aircrews are continuing to train in the Tiger simulators and "also work on some other helicopter types to maintain general aviation skills."

Rescue 651 crew recognised at SAR awards

An RAC Rescue helicopter crew has been recognised with a Commendation Award at the National Search and Rescue Council's annual awards for a 12 hour marathon offshore retrieval mission over remote waters near Esperance, Western Australia.

Crewed by pilot Craig Bowman, aircrewman Garth Fitzgerald and St John Ambulance paramedic Ben Harris, the RAC Rescue Bell 412EP, callsign Rescue 651, was called out on the evening of November 6 2016 to winch a 27-year-old crayfisherman off the vessel *Fatal Attraction*, which was off the coast near Israelite Bay, 114 nautical miles east of Esperance.

In high winds and with the fishing boat battling a heavy swell, Harris was winched aboard the vessel to splint the injured man's broken leg. Harris and the crayfisherman were then winched aboard the helicopter before Rescue 651 flew to Esperance. There the patient was transferred to an awaiting Royal Flying Doctor Service PC-12 for onward transfer to Royal Perth Hospital.

Jandakot-based RAC Rescue is operated by CHC Helicopter under contract for Western Australia's Department of Fire and Emergency Services (DFES).

ATSB reports on Squirrel engine failure

The Australian Transport Safety Bureau (ATSB) has released its final report into the engine failure and forced landing of AS350 BA Squirrel VH-SFX, which occurred over dense forest in the Whyanbeel Valley, Queensland on November 2 2015.

While conducting a low-altitude aerial weed spotting operation, the helicopter yawed twice in an uncommanded manner. In response, the pilot climbed and increased the helicopter's forward airspeed and attempted to return to base. However, the engine failed and the pilot conducted an autorotation landing.

The helicopter landed heavily with the skids digging into the uneven terrain and breaking off, but remained upright. The helicopter was not fitted with energy absorbing front seats which may have reduced the risk of injury to the navigator in the front and the pilot who both received injuries from the impact forces.

Analysis of the engine identified that the Squirrel lost power to its Arriel 1B engine due to a front bearing failure in the turbine module. The failure was due to an accumulation of coke particles in an oil jet. The ATSB said it was unable to conclude specifically why the coke particles had formed.

The severity of the engine failure was increased through the fracture of the power turbine shaft and the subsequent separation of the turbine disc due to a lack of adhesive on the splined nut that was threaded to the rear of the power turbine shaft.

The engine manufacturer, Safran, has amended its procedures manual to include systematic cleaning of the power turbine front bearing assembly oil jet and oil jet supply pipe. Safran has also initiated a number of training and process changes to ensure the adhesive bonding between the power turbine and the rear nut is maintained during service.

The ATSB said the emergency landing was handled in a competent



Former Snowy Hydro SouthCare Bell 412 Classic, VH-NSC, has a new lease on life and is back in Canberra. STEVE MILLS

and proficient manner. The pilot's pre-departure briefing gave the passengers the necessary knowledge to prepare for the emergency by adopting the brace position and exiting the helicopter only when it was safe to do so. The Bureau also said its investigation highlights the response to an abnormal operation in a timely and proficient manner can minimise the consequences of an accident.

Third H160 joins test program

Airbus Helicopters' H160 certification test program continues to gather pace after its third prototype, PT3, made its first flight at the company's Marignane, France headquarters on October 13.

Fitted with a cabin interior configuration similar to a production example, PT3 will contribute to maturing the certification activities and flight testing towards the H160's planned entry into service in 2019.

Bushfire Black Hawk to return

Scone-based Pay's Helicopters is again bringing an ex-US Army UH-60A firefighting Black Hawk to Australia this summer after a first successful tour of duty last bushfire season.

The refurbished Black Hawk,

N563DJ, was shipped from Timberline Helicopters' Sandpoint, Idaho facility in early November. It is expected to arrive in Scone during the first week of December.

The Black Hawk will again be equipped with a 3,410 litre multi-shot BBX7590 Bambi bucket with a fast-fill pump to help fill it in just over 30 seconds.

Last season, Timberline's N434TH, callsigned 'Helitack 260', became the first civilian-registered Black Hawk to operate in Australia for aerial firefighting operations where it demonstrated its value and capabilities to state and territory fire agencies.

Meanwhile in July, StarFlight Australia, Sikorsky Helitech and Kaan Air Australia signed an agreement to bring an initial 10 ex-US Army UH-60 Black Hawk helicopters into Australia to be refurbished for use locally in aerial firefighting, emergency services and disaster relief operations.

'Charlie' returns to the Capital

Former Snowy Hydro SouthCare Rescue Helicopter Service's Bell 412 Classic VH-NSC has returned to the nation's capital.

Devoid of its former sponsor titles, rescue hoist and ERA fuel tank, Canberra Helicopters has

brought the iconic Bell 412, affectionately known as 'Charlie', back to the region re-configured for fire attack and other utility duties.

Sponsored by insurance broker Austbrokers Canberra, Charlie still wears its green, white and blue colours from its SouthCare career but now features a new 'Fast-Fin' tail boom, bubble side window and the ability to carry a 1,400lt Simplex Fire Attack belly tank.

"VH-NSC is owned by us and will now remain a permanent resident of the region," said Canberra Helicopters' general manager and chief pilot Steve Jones. "The aircraft can be quickly configured for other roles including search and rescue, passenger transport for up to 14 passengers, and sling load operations."

The helicopter was retired from rescue duties by CHC Helicopter in early April following the end of an 18 year contract with the Snowy Hydro SouthCare Rescue Helicopter Service.

Briefs

- » CASA has issued a new exemption (CASA EX120/17) for pilots applying for a helicopter aerial application endorsement. The exemption reduces the dual flight training in aerial application operations from 15 hours to 10 hours. The exemption also requires pilots gaining the endorsement under the reduced hours to complete an additional 10 hours of direct supervision.
- » Long-term Bell Helicopter partner Subaru Corporation (formerly Fuji Heavy Industries) has signed a contract for 150 Bell 412EPIs for the Japan Ground Self-Defense Force (JGSDF) as the service's new utility transport helicopter. The 412EPI will replace the JGSDF's existing UH-1J fleet. The contract also includes an agreement to build a further 150 examples of the type for export.
- » The Western Australia government has announced it will provide future funding for Bunbury-based RAC Rescue helicopter service. The government has allocated over \$27 million for the south-west service which first flew on February 1 2016. ■



Timberline Helicopters' UH-60A Black Hawk N563DJ is heading to Australia to work through Pay's Helicopters of Scone, NSW this bushfire season. TIMBERLINE HELICOPTERS



RAAF AP-3C Orion A9-659 flies into Albion Park for the ceremony where sistership A9-753 was formally handed over to HARS. Below, Chief of Air Force Air Marshal Leo Davies hands over the 'keys' for A9-753 to HARS. MARK JESSOP

HARS accepts ex RAAF Orion

Lockheed AP-3C Orion A9-753 was formally handed over to the Historical Aviation Restoration Society (HARS) at Albion Park on November 3.

The Orion has joined a HARS collection of more than 20 former RAAF aircraft, including examples of earlier RAAF maritime patrol aircraft in the PBY Catalina and SP-2H Neptune.

The Orion is progressively being replaced in RAAF service by the Boeing P-8A Poseidon (see feature article elsewhere this issue – Ed).

Chief of Air Force Air Marshal Leo Davies, himself a former P-3 navigator, was at Albion Park to formally hand over the 'keys' to A9-753, while a second AP-3C flew into Albion Park to mark the occasion (A9-753 had arrived at Albion Park earlier this year.)

HARS plans to fly the ex-RAAF aircraft as a civil warbird, a fitting tribute to the Air Force's nearly 50 years of operations with the type.

Remembering Newton VC, 75 years on

November 29 marks 75 years since Pilot Officer Rawdon H Middleton was posthumously awarded the



Royal Australian Air Force's first Victoria Cross (VC) in World War 2.

Pilot Officer Middleton was the pilot of a Short Stirling four-engine bomber that had been on a bombing mission to Turin, Italy on November 28 1942.

The aircraft was hit by anti-aircraft fire over the target with one shell exploding in the cockpit wounding Middleton's body and face, and destroying his right eye. The same shell also wounded the second pilot and wireless operator. Middleton lost consciousness and the aircraft lost a great amount of altitude before the second pilot brought the crippled aircraft back under control. Middleton regained

consciousness and after consulting the crew elected to fly the aircraft back to England. Approaching the English coastline but with scant fuel remaining Middleton ordered his crew to abandon the aircraft. Five men left the stricken aircraft, and two remained on board to help Middleton before attempting to parachute to safety, although unfortunately both drowned.

The Stirling crashed into the English Channel killing Middleton. He was aged 26. His body was later washed ashore and he was buried in the churchyard of St John's Beck's Row, Suffolk, with full military honours.

A ceremony was due to be

held at the RAAF Base Wagga on November 29 to commemorate Middleton's actions of extreme gallantry and devotion to duty.

Aviation heritage on display in FNQ

In far north Queensland around Cairns there are many aircraft of interest to visiting aviation enthusiasts.

At Cairns Airport the Short Belfast is still in one piece. Given its size it is unlikely to be moved to an air museum, or ever leave the airport in one piece, one suspects. We await its fate with interest.

The C-47/DC-3 that was with the Belfast, VH-SPY, is no longer at the airport but has been moved down the road to Edmonton, just south of Cairns, and is now dormant in a paddock minus its wings. It is understood that there is a dispute over storage fees so the fate of the machine is in doubt.

Back at the Cairns Airport the Cairns Aviation Skills Centre has a turbine Piper PA-31T Cheyenne I on display at its front door, while inside there is the cabin section of a Robinson R44 helicopter, VH-HOT, being used as a training aid. At the back of the building is a second R44, complete with

registration VH-TMD, while nearby is a Cessna 152 under rebuild, VH-UZB.

Behind the security wire on the airport tarmac is VH-WJW, a Dassault Falcon 10 marked as a Cairns Aviation Skills Centre machine. Built in 1978 this machine has carried some five registrations before being retired in 2008. It seems so strange to see executive jets being retired and parted out or broken up, but that is what is happening around the world including Cairns and to more expensive aircraft than single-engine Piper and Cessna aircraft.

In the Cairns suburb of Edge Hill the RFDS previously had a visitor centre with Beech Queenair VH-FDS on display. The centre is now closed and the Queenair is now in Longreach. Built in 1977 the big piston twin was retired from the RFDS when replaced by a King Air. The machine was initially retired to Mareeba airport then over the road to the Beck War Museum. In 2014 it was moved again to Longreach where it is now suspended from the ceiling of the Stockman's Outback Hall of Fame museum.

Back in Mareeba and the now closed Beck War Museum is still home to a number of aircraft including a C-47, a Canberra, a Bristol Sycamore, a DH Venom and the only complete Bell P-39 Airacobra in Australia. Sid Beck passed away in 2013 and now his son Norman is drawing down the collection. As Norman explained during a recent visit, it is not a fire sale and he has a price on all the exhibits.

In addition to the aircraft there are numerous military vehicles, a large collection of aero engines and all manner of wartime memorabilia. The collection is housed under a huge wartime wooden hangar.

The Queensland Museum at Brisbane is also worth a visit. Located on the south side of the river, the entrance foyer has Bert Hinkler's Avro Avian, G-EBOV, on display. It is suspended from the ceiling. It is the only aviation exhibit on display in the museum at present. Hinkler was born in Bundaberg in 1892 and died in the crash of a DH.80 in 1933 in the Italian alps.

The Avian was flown by Hinkler from the UK to Darwin in 1928. It took 15 days and 18,000km and 128



Ex British Army Westland Gazelle VH-OIZ was recently added to the Australian register. It is pictured here at Parafield. ROD BROWN

hours in the air.

The aircraft was donated to the Queensland government in 1929. Looking up at the Avian one can only think that it is a far cry from flying from the UK to Australia today in an A380 Airbus!

Register news

A 1977-built Westland 341B Gazelle has taken on the marks VH-OIZ, with c/n 1682 (WA1682). Previously G-CHZF and XZ338, it was registered to Westland Helicopters of Mile End, South Australia on October 4 (more details in Register Review this issue – Ed).

Aero L-39C VH-KEE has had a registration change to VH-ZPM with Melbourne Jets of South Melbourne. The constructor's number is given as 834408, and the change of ownership date is recorded as October 6.

American Champion 7AC VH-STU was struck off the register on October 19. This aircraft was ex N83590 and was last owned by Harvey McBain of Nelson, Victoria. The aircraft has c/n 2266.

As previously noted, CAC CA-25 Winjeel VH-WMD, ex A85-413, changed owner to Paul Lostroh of The Bluff, Queensland, but we now have a changeover date being October 27. DH.82 Tiger Moth VH-WEM gained a new owner on October 20 to Nicholas Heiniger of Foster, NSW. Folland Gnat T Mk.1 VH-XSO, c/n FL595, was struck off the register on October 31. It is reported to be going to China for a museum.

De Havilland DH.60X VH-JGS,

c/n 604, was struck off the register on November 7. The last owner is recorded as Lionel Betts of Geelong. The aircraft was under a long-term rebuild when it got involved in a hangar fire at Geelong on April 12 2006. An Auster and another aircraft were also destroyed in the fire.

Auster J5P VH-BTE, c/n 3200, moved to new owner Conrad Hamel of Tyabb, Victoria on October 3; elderly Piper PA-20 Pacer VH-TPH, c/n 1103, moved to new owner Johan Luies of Aubin Grove, WA on October 4; and DH.82a VH-RIN, ex A17-588, obtained a new owner on October 4 in Leonard Creek of Nhill, Victoria.

Rathmines Catalina fly-in

The event, held on Sunday 29 October, was to raise funds for the rebuild to static display standard of the Catalina being worked on by the Rathmines Catalina Memorial Park Association. Each year the event seems to grow bigger and this year was no exception.

The Roulettes did their magic with six PC-9 aircraft, and on the water some nine seaplanes or amphibians turned up to show what water flying is all about. Warbirds in the form of CAC Wirraway VH-WWY carried out a display as did Grumman Avenger VH-MML. A pair of Yak-52 trainers gave a touch of trainers to the day. The cockpit of Mirage A3-97 was brought to the Rathmines location from the Fighter World museum for the day. The main display aircraft was the rebuild Catalina that is

steadily moving towards completed display standard.

The HARS Catalina, VH-PBZ, arrived to put on a display but developed an engine issue and diverted to nearby Maitland where it landed and then had problems vacating the runway. The aircraft required maintenance before it could fly back to home base at Albion Park.

In brief

- » The Australian Vintage Aviation Society (TAVAS) Great War Flying Display 2018 will be conducted at Caboolture, Queensland over April 21 and 22 next year. The event will not only have replica WW1 aircraft flying but also aircraft from WW2, Korea and Vietnam plus assets from the modern day ADF. The 21st of April is also the centenary of the shooting down of the Fokker Triplane of the famed Red Baron. A Fokker will be in the air and on display at the gathering.
- » A correction to our story in Warbirds in the November issue regarding the Reeves Warbirds B-26 ("B-26 on the move"). Reeves Warbirds advises that Peter Smythe did not purchase the aircraft, as stated in the story, but instead it was purchased by Reeves Pastoral. Peter's role for Reeves Warbirds is as a research director. We apologise for the error. 📧

Contact Dave by email: flyer02@optusnet.com.au

Right Hand Seat

DAVE PROSSOR

SARTIME

Use it but don't abuse it

Who has forgotten to cancel their SARTIME?" That was the question that the aviation safety adviser asked the audience at a recent CASA aviation safety (avsafety) seminar.

The response was almost a full house of raised hands.

Having a SARTIME and cancelling it before it expires is a subject that all VFR pilots should be familiar with.

So what is a SARTIME?

According to Airservices Australia, "SARTIME is an abbreviation for 'time search action required'. A SARTIME is the time nominated by a pilot for the initiation of search and rescue (SAR) action."

So in broad terms a SARTIME is a time that a pilot nominates and unless cancelled with air traffic services (ATS) there will be an initial check by ATS on the status of the aircraft, after which, if there's no response, the task of trying to locate the 'lost' aircraft is turned over to AMSA (the Australian Maritime Safety Authority). A search may then result.

Some 120,000 SARTIME flight notifications are lodged each year, the avsafety seminar was told. Of these 10 per cent or 12,000 require follow-up com checks when SARTIMEs have not been cancelled by the due time. A further 1.5 per cent or 1,500-1,800 get elevated to the declaration of a phase alert and in some cases a search is conducted by AMSA.

Australia is a big country and for those that fly over it outside of controlled airspace they can have the confidence, unlike some countries, that should they go missing someone will come looking for them, if they have lodged a SARTIME.

So how does one lodge a SARTIME? Usually online in the form of a basic flightplan through the National Aeronautical Information Processing System (NAIPS) that tells Airservices the intended route that a

“
Should they go missing someone will come looking for them.

⚡ When the unthinkable happens it is good to know that a missed SARTIME will trigger a search and rescue operation. AMSA

pilot plans to take and a nominated SARTIME. It can be a wise move to note on your copy of the plan the SARTIME in both local time as well as UTC/Z. More than one pilot has had a SARTIME expire thinking that the expiry time was later than actual – 5pm/0700z is not a 7pm expiry time!

There are various ways to remind yourself of the SARTIME, like using a red pen to highlight the SARTIME on your copy of the flightplan. Another is setting a mobile phone alarm to ring five minutes before the expiry time, or a sticker on the instrument panel or swapping your wrist watch to your other arm. Or you put a tag on the aircraft keys or even your car key, or a reminder tag attached to your flightbag handle or headset bag.

Airservices' preferred method of cancelling a SARTIME is online via NAIPS, or you can call Airservices' CENSAR 1800 phone number. A tip here is to have the number already in your mobile phone's contacts.

CENSAR will want to know three things: the callsign, the location that you planned as your destination, and the advised SARTIME. All this is to try to ensure that the person calling to cancel is in fact that aircraft's pilot.

In part this ask came about as a result of a crash in the NT where a person on the ground saw the Baron fly overhead and advised Airservices by phone that the aircraft had arrived.

But it crashed in the circuit pattern unknown for some time to those on the ground.

Remember, with an overdue SARTIME cancellation a search may be mounted to try to find the missing aircraft. That involves taxpayer-funded aircraft and personnel looking for you. This can endanger the crew of those aircraft, as more than one search aircraft has crashed during search flights.

If flying in a remote area mobile phone coverage may be poor or non-existent. In this situation a call to CENSAR while in the circuit area may be one way to cancel the SARTIME even if this is not usually the norm for a VFR flight. If on the ground another method could be to contact another aircraft flying in the area and ask for an airborne relay to cancel that SARTIME. If approaching a SARTIME expiry while still in the air it is best to contact Centre and advise a new SARTIME. For example, "Brisbane Centre, Flight Watch. Require SARTIME extension."

Further tips. Ensure that the correct phone number for the pilot is on that submitted SARTIME flightplan form, just in case Airservices or AMSA needs to call you.

Get into the habit of cancelling the SARTIME before it expires. Allow adequate time between the estimated destination arrival time and the nominated SARTIME. A good time to phone CENSAR is at shutdown before you exit the aircraft. Think mixture, master, mags, cancel SARTIME.

And avsafety seminars are great events to attend. Pilots can learn much from them and ask questions.

Lodging a SARTIME is great insurance for all pilots on away-from-base flights. It is good to know that someone will come looking for you, your passengers and the aircraft in the event that the unthinkable occurs. **A**

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Register Review

TONY ARBON

australianaviation.com.au/register

For the second issue in a row one of the most interesting aircraft in the New Allocations listing is a Westland Gazelle helicopter. OIX has a similar history as OIZ, listed last edition, however, a little more is now known about both aircraft – with a mysterious three-year gap between 2014 and 2017.

The latest Gazelle was marked as XX409 with the British Army before becoming G-CHYV on the British civil register with Kemet Global, London. OIX and OIZ, along with another pair of ex British Army Gazelles, were then believed to have been acquired by Paramount Aviation and taken to Africa where the other pair were operated by the Malawi Defence Force. Some sources quote all four going to the Malawi Defence Force, but there is photo proof as well as documentation showing two in Malawi Defence Force markings but not the other two, so it seems unlikely that all four were in Malawi. Another source quotes the second pair going to South Sudan, but there is no proof and the South Sudanese military has only ever operated Russian types so that also seems unlikely. What we do know is that OIX and OIZ were in storage in Uganda for two years prior to coming to Australia.

Jim Whalley, owner of Boomerang Aviation, advises that he will probably sell OIX which has relatively low hours on it – just under 6,800, and keep OIZ for airshows and potentially warbird adventure flights. Jim is currently seeking permission from the UK to return both aircraft to their original British Army colours and markings.

John Maslin's Pipistrel Virus SWiS DAB is the first of its type on the CASA register, although there are four currently on the RA-Aus register. The Virus is a high-wing, cantilever monoplane with pod and boom configuration, a T-tail, air brakes and a cabin that seats two side-by-side. It is built in Slovenia of all-composite construction and is available from the factory in kit form or flyaway. The aircraft comes



N436RP at the Cirrus fly-in at Ayers Rock prior to becoming VH-ECT. TONY ARBON

with a tail wheel or tricycle fixed-undercarriage, short wing (10 metre) or long wing (12 metre) and can be fitted with an 80hp (60kW) or 100hp (75kW) Rotax powerplant. DAB is a short wing version with a Rotax 912Is fuel-injected engine.

Cessna Grand Caravans TQF and TQV are interesting as they were delivered new to Myanmar Airways during 2013 as XY-AJK and XY-AJL respectively to be used for business and private charters based at Mandalay. Myanmar Airways operates three Airbus A319s and one A320 on domestic and international routes, but it appears that its venture into corporate charters was not that successful as both aircraft have been sold to Acena Nominees in Adelaide.

The two aircraft arrived in Perth on October 16 via Denpasar, Bali and Port Hedland, with Airfite providing pre-delivery checks – TQF at their Perth facility and TQV at Jandakot.

A Cessna 172 and a Boeing 737 are shown in the Aircraft Returning to the Register section this issue. Cessna 172R Skyhawk LWE was part of the Royal Queensland Aero Club/Airline Academy of Australia fleet before it went into liquidation, and the aircraft was deregistered on September 14. Less than one month later it was back on the register with Rapair Aircraft Hire at Archerfield.

VZF was one of eight Qantas Boeing 737-800s which spent a short time on the local register during August 2009 before going to Jetconnect in New Zealand. The wholly-owned subsidiary of Qantas has used the aircraft on its trans-Tasman routes as well as on its New Zealand domestic network before Jetstar Airbus A320s took over the domestic services.

Thirty-eight aircraft are shown in the Deletions section this issue, although this number is not indicative of a decrease in the number of aircraft in Australia as five have been reregistered and can be found in the New Allocations section, two have been transferred to the RA-Aus register, and 12 have been withdrawn from use and may re-join the local register at a later date.

But that's not so for the two elderly Skytrans Dash 8s, QQA and QQC, as they were broken up at Cairns during October. Of the exports, Dornier 228 VJD has gone to Kenya, Cessna Caravan UTJ and Bell LongRanger IQY to South Africa, AgustaWestland AW169 LHH to the Philippines and Hiller UH-12E ECK is now in Canada.

Closer to home five aircraft have crossed the Tasman including PA-42 Cheyenne 400LS BUR which is now flying as ZK-FIS with Airways Corporation of New Zealand based

at Auckland. The departure of the Cheyenne leaves only one other 400LS and two Cheyenne IIIs on the local register.

Meanwhile, Fletcher FU24 HVP has taken up its original markings of ZK-EUA and is now with Aerial Spreading at Amberley, and Aerospatiale Squirrel LLP is now marked as ZK-ILW flying with Murchison Heli Tours at Richmond.

Gippsland Airvan LPX is now with Southern Lakes Aviation at Queenstown and joins two other Airvans, a Cessna 172 and a PA-32 Cherokee Six in the Southern Lakes fleet. The Airvan is very popular in New Zealand with 25 currently on the New Zealand register. With its large windows and one for each seat it is ideal for tourist flights.

Five aircraft have been exported to the USA including Beech Baron EPO which is now N16BK with Bay Leasing at Richmond, Virginia, and Cessna 208 Super Cargomaster IOV which flies now with Pacific Air Holdings at Shawnee, Oklahoma as N842PH. Also in America is Beech Super King Air 350 WXC, which came from the UK to Australia during February 2011, and is now marked as N506KB with Aerosolutions Group at Willmington, Delaware.

Only two aircraft have been deregistered due to damage. Cessna T188 Aghusky was damaged by fire at Bronte Park, Tasmania on October 13 2014, while Liberty XL2 CZX crashed 2km south of Luddenham, NSW on September 24 2008. The Liberty was observed by witnesses in a steep, low-speed descent before hitting trees. The ATSB report found no mechanical fault with the aircraft, the weather was benign and the pilot had no pre-existing medical conditions. However, traces of cannabis were found in the pilot's blood although this was not believed to be factor in the crash. **A**



King Air N506KB, the former VH-WXC, departing Cairns for the US on November 6. ANDREW BELZACKI

Register Review

View the Register Review listing online
[@australianaviation.com.au/register](http://australianaviation.com.au/register)

A bitter disappointment

The Sud Caravelle's failed Australian introduction

After attempts to introduce the de Havilland Comet to both international and Australian domestic services had failed, the next opportunity for a jet airliner in Australia centred on the French Sud Caravelle.

Trans-Australia Airlines had been interested in the Caravelle since 1954 when John Watkins, the airline's technical superintendent, visited Toulouse and saw the two prototypes under construction. He discussed the specifications and capabilities with the designers and had a look at the engineering that was going into them and was very impressed.

An existing problem for TAA was the Adelaide-Perth sector, Watkins explained to this writer many years ago.

"We did operate the Viscount service usually non-stop Adelaide to Perth, but when the prevailing wind from the west was particularly strong there were occasions when we had to refuel at Kalgoorlie. And of course this gave the service a bad name and we could never carry a full payload anyway on that run. We adopted the technique of re-flightplanning over Kalgoorlie [whereby] we could have returned to Kalgoorlie if necessary or gone into Perth with a 15 per cent

reserve. But it wasn't the right aeroplane for the run.

"It became clear from our route studies that the Caravelle would really be in its element. That sort of stage distance was just right for it, Adelaide-Perth. What we intended to do with the Caravelle basically was to run the two aircraft to and from Sydney to Perth via Adelaide. Initially we would have had just the two aeroplanes on that, with a Viscount feeder service from Melbourne to Adelaide. Occasionally we could have run the aircraft through Melbourne. There was some argument about Essendon's suitability but we would check that with the actual operating behaviour of the aeroplane. It wasn't vital to the system. It wasn't just the engineering people, my people who were keen on the Caravelle, our pilots, our management, everybody had gone over and had a look at it and flown in it, tried it out and everyone was really enthusiastic about it."

On July 5 1957 Warren McDonald, chairman of the Australian National Airlines Commission (which traded as Trans-Australia Airlines) discussed with Sud Aviation an extension of an option to purchase two Model SE210 Caravelles for TAA for delivery during May-June 1960.

McDonald made three approaches to the government to secure the Caravelle purchase but all attempts proved futile. The government contended the domestic system was not sufficiently robust to progress to larger and faster turbine aircraft at that stage.

Adding to TAA's Caravelle purchase woes was Ansett's intransigence. John Watkins summarised the situation:

"As a matter of fact John Ryland (TAA's general manager) said to me several times after that, that was the most bitter disappointment of his life. He never imagined that that was going to be refused and he was looking forward very much to getting the Caravelle into TAA service. But from the government's point of view it was just at the time when the Two Airline Policy was coming into effect, and using hindsight one can understand that they believed that unless both operators could be induced to introduce jets at the same time, that sort of technological quantum leap would put one airline at a grave disadvantage in comparison with the other. And this would upset the whole philosophy of the Two Airline stabilised industry.

"Ansett was not prepared to switch in favour of the Caravelle, we had a number of very

interesting discussions with the management and technical people at Ansett, but we couldn't convince them that they'd be better off going for Caravelles than Electras and they couldn't convince us that we'd be better with Electras than Caravelles. But in the upshot the government decided that if anybody was to get any aeroplanes in that category, and they were of a comparable category in terms of passenger capacity and stage capabilities, it would have to be Lockheed Electras. So we had no option but to go with the Electra.

"The Electra was a good aeroplane with certain qualifications. I don't know whether you say an aeroplane is a good aeroplane when you have to send it back to the manufacturer twice to have its wings rebuilt. Well the first problem was they started crashing in America because the wing was too elastic and they developed a propeller whirl mode that shook the wings off. That happened a couple of times and the aeroplane was put under very severe speed restrictions until the problem was solved. And we had to send all the fleet back to Burbank. Lockheed picked up the tab, they had to."

In a last ditch stand, during May 1962 Sud Aviation SE210 Caravelle F-BJAO *Santa Maria* visited Melbourne on a demonstration tour. This writer was on holidays in Melbourne and visited Essendon on May 4 that year to witness the Ansett team conduct an inspection of the aircraft prior to a demonstration flight. It was a charade as Ansett was not in the least bit interested in a Caravelle purchase.

The introduction of scheduled domestic jet airline services in Australia would be spearheaded some years later by the Boeing 727 in November 1964 and Douglas DC-9 in April 1967. ■



No Australian airline would operate the Caravelle, but Air Caledonie did operate the type to Australia for many years. JULIAN GREEN

AVIATION/ AEROSPACE AUSTRALIA

INNOVATION. DIVERSITY. PARTNERSHIPS.

DEC EDITION

A/AA Skills Summit - Skilling for the Future

The second A/AA Skills Summit was held on Tuesday 24 October 2017 at the RACV City Club in Melbourne. Following on from its inauguration in 2012, we revisited the skills landscape following the theme of 'Skilling for the Future'.

Sponsored by Australian Industry Standards (AIS) the summit featured a diverse range of professionals from civil and military, with aviation and HR backgrounds each providing their own insight into gaps within the industry and sharing ideas, case studies and proposing solutions on how to combat an industry-wide skills shortage.



'We must emphasise Diversity of Thought in Skilling the Future. The 4G's: Generation; Geography; Gender & Genre' - Naomi Mathers, Deputy Chair, Space Industry Association of Australia & Linda Spurr, MC (right to left)

With the theme of the summit being Skilling for the Future, much of the discussion was around Automation and Artificial Intelligence and its impact on the changing workforce. Rapid advancement in technology dictates that individuals now need to be prepared to have multiple careers through their lifetime. Nicolette Barnard (Head of HR Pacific, Siemens) spoke on how the workforce must

be adaptable and we must re-think the way we look at training the future generations. From apprenticeship to university, curriculums need to be re-designed to prepare individuals for an ever-changing career, making them adaptable from the get-go. As an industry, we must take the lead.



'The question is not will a robot take your job, it's how will you engage with the robot once it takes your job' - Nicolette Barnard, Head of HR Pacific, Siemens

Dan Minton (Industry Manager - Aviation, AIS) also emphasised that while it's important we focus on having enough skilled workers on the ground to manage and develop existing and emerging technologies, we must develop instructors and trainers to maintain the flow of skill. They are currently at a deficit and without educators the demand cannot be fulfilled and sustained.

The event was attended by over 40 representatives from Industry and each session provided an opportunity for in-depth Q&A with the speakers/panellists, generating a more interactive ideas-sharing environment. We are putting together a report of the day's discussions and key themes which be made available to members shortly.

THANK YOU TO ALL SPEAKERS AND PANELLISTS

Robert Adams, Chief Executive Officer / Australian Industry Standards
Dr Naomi Mathers, Deputy Chair / Space Industry Association of Australia
Dan Minton, Industry Manager / Aviation, Australia Industry Standards
Adrian Lutze, General Manager - Aircraft Maintenance & Support / BAE Systems Australia
Steve Witheford, Group Captain, Director Workforce Planning / Air Force (DWP-AF)
Nicolette Barnard, Head of HR Pacific / Siemens
Trevor Kistan, Research and Technology manager, Technical Director Air Traffic Management / Thales Australia
Jane Snewin, Human Resources Manager / Lockheed Martin Australia
Linda Spurr, Director / Aviation/Aerospace Australia

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A/AA Skills Summit
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