AIR FORCE ASSOCIATION

Wings

AUTUMN 2019
Volume 71 No. 1

AVALON AIR SHOW

Panasonic
BUSINESS

BUILT TO GO WHEREVER THE CALL OF DUTY REQUIRES.

Toughbooks have been engineered from the inside out, passing the industry's most brutal tests to protect your valuable data from accidental drops, shocks, vibration, extreme temperatures, pressure, altitude, humidity, spray and much more.

The Panasonic Toughbook range of rugged notebooks, tablets and handheld devices have been specifically designed to provide unfailing performance in the most unforgiving environments and mission critical situations.

Visit us at Avalon 2019. Stand 2P23.

intel CORE i5 vPro inside

TOUGHBOOK

INSIDE

Volume 71 No 1
AIR FORCE ASSOCIATION
PUBLICATION

50

49

41

Editor
Mark Eaton
wingseditor@hotmail.com
PO Box 1269
Bondi Junction NSW 1355

President
Carl Schiller OAM CSM

Vice Presidents
Governance
Bob Bunney
Advocacy & Entitlements
Richard Kelloway OBE
Communications & Media
Lance Halvorson MBE

Secretary
Peter Colliver
natsec@raafa.org.au

Treasurer
Bob Robertson

Publisher
Flight Publishing Pty Ltd
wings@flightpublishing.com.au

DIVISION CONTACTS

ACT secactraafa@bigpond.com
0428 622 105
NSW admin@raafansw.org.au
02 9393 3485
QLD raafaqldpres@gmail.com
0417 452 643
SA raafaad@internode.on.net
08 8227 0980
TAS secretary@raafatas.org.au
03 6234 3862
VIC office@raafavic.org.au
03 9813 4600
WA enquiries@raafawa.org.au
08 9288 4710

JOIN THE AIR FORCE ASSOCIATION

Subscribe online at www.raafa.org.au, click on "**Wings Archive**" and follow the prompts; pay via BPay or funds transfer via your bank. A 12 month subscription is $28.00, incl GST, within Australia and AUD36.00 for Asia and Pacific regional addresses.

FEATURES

REGULARS

Front Cover:

First aircraft arrival into Australia of the F-35A Joint Strike Fighter.

Photo:
CPL David Gibbs.

Also available on line at www.raafa.org.au

MATERIAL CLOSING DATES

Winter Issue - 14 April
Autumn Issue - 14 January
Spring Issue - 14 July
Summer Issue - 14 October

Scan with your QR app to access our web site

The ACU-804 Series is a line of self contained, fully portable air conditioning units suitable for military and commercial single connection aircraft. The ACU-804 is robust and proven to perform in extreme conditions globally.

Freightquip Pty Ltd and TLD (GSE) work together to supply the Australian and New Zealand market with world-class aviation ground support equipment.

Our business relationship with the Royal Australian Air Force (RAAF) was established over 15 years ago with the initial supply of TEK300D Pre Conditioned Air ground carts. A new generation higher capacity ACU-804 unit was introduced into the fleet some 7 years ago with the ability to fulfill AC requirements for the C130, C17 and KC-30A, and has since seen a gradual full fleet replacement occur of the older TEK300D's. (The TLD ACU804 Pre Conditioned Air is pictured above with the RAAF C17 at the 2013 Avalon Air Show).

Freightquip's most recent project has been supporting the supply of the new Aircraft Loader fleet and has provided the opportunity to showcase to the RAAF, Freightquip's ability to deliver local technical expertise and support. Combined with enhanced OEM support, Freightquip has led the training, delivery and on site equipment commissioning assisting with the fleets transition into service.

Freightquip and TLD have partnered together in delivering to the RAAF a new ACL fleet consisting of a single specification delivering fleet continuity. Beyond the advantages of the equipment, Freightquip brings enhanced operator, maintainer and parts support and has also developed a compliant and accompanying RAAF approved Training Package for both Operators and Maintainers. These courses have been implemented as per contract commitment and we look forward to further assisting the RAAF when and where required.

We have seen to date the successful delivery and implementation of the full compliment of units into Richmond and Amberley Bases with the roll out of the remaining fleet into other bases on schedule.

The PFA50 was purpose built for military applications and includes many innovative features not previously seen or even considered on earlier generations of this type equipment. Fast and easy deployment and aircraft approach, air transportable on both C130 and C17, self-loadable, 22.7 tonne 5 pallet lifting capacity and a rugged design which is enhanced by it's variable ground clearance and ability to compensate for extreme ground conditions.

The feedback from all RAAF stakeholders has been extremely positive throughout the entire project. Through the culmination of all of the stakeholders input, the first units entered into limited operational service in November 2014. This in itself was a major milestone as this operational activation was well in advance of the original projections.

Freightquip Pty Ltd and TLD is proud to be associated with the Royal Australian Air Force.

Fleet of RAAF PFA50 Aircraft Loaders

freightquip
freight handling equipment

TLD
LOCAL SUPPORT, TOTAL COMMITMENT

Freightquip Pty Ltd
Suite 1-3, 97 Hyde Street, Footscray
Victoria 3011, Australia
+61 3 9362 7923
+61 427 804 809
Website: www.freightquip.com
Email: enquiries@freightquip.com

Providing mission focused Defence solutions for over 40 years, Hawker Pacific is ready to deliver the Special Operations Helicopter to protect Australians at home and abroad.

Rapidly reconfigurable for the specific mission and deployed via C-17 transport within hours, operational readiness is assured using commercial off the shelf aircraft optimised for today's battlefields and hostile urban environments.

With Bell Helicopter's leading performance and reliability combined with Hawker Pacific's local expertise and through life support capabilities, our world-class team provides a highly effective Special Operations Helicopter solution.

Learn more about the program **hawkerpacific.com/SOH**

HAWKER PACIFIC
A Jet Aviation Company

INDEPENDENT REPRESENTATIVE BELL IR

CUSTOMER SERVICE FACILITY BELL CSF

PILATUS

12 YEARS OF PROVEN SERVICE, 209 AIRCRAFT, 8 VISIONARY AIR FORCES!

For years, we were told a turboprop trainer would never be able to replace a jet trainer. We proved them wrong – pilots now even transit directly from the PC-21 to fighter aircraft with the benefit of huge cost savings. Our highly effective training system has been successfully adopted by leading air forces around the world – a clear demonstration that the PC-21 is the training system concept for the 21st century.

Pilatus Defence Solutions Australia Pty Ltd · Phone +61 3 5143 5400 · www.pilatus-aircraft.com

LIFE AFTER THE AIR FORCE?

DEFENCE TRANSITION FOR AIRCRAFT AND AVIONICS TECHNICIANS

Want to know how to gain the required MEAs to gain a DASR MAML, or convert your qualifications to a CASR or EASA Part 66 B1 (Mechanical) or B2 (Avionics) Aircraft Maintenance Engineer Licence?

CONTACT US TO FIND OUT MORE!

07 3860 0900 | industry@aviationaustralia.aero

www.aviationaustralia.aero/defence-transition

Aviation Australia can help you make a successful transition.

- Recognition of Prior Learning (RPL)
- Assessment of basic knowledge, practical competencies (MEAs) and experience
- Approved Aircraft Type Training (theory, practical on course and on the job training)
- Accelerated training for CASA and EASA category assessment
- CASA and EASA category examinations and assessments at exam centres in QLD, VIC, WA, SA & NSW

Australian Government
Civil Aviation Safety Authority

EASA
European Aviation Safety Agency

RTO No. 30770

From the President's Desk

The Productivity Commission inquiry into Compensation and Rehabilitation for Veterans released its draft report and recommendations in December 2018. It was directed to examine whether the current system servicing current and former serving Australian Defence Force members is 'fit for purpose' now and into the future, and to assess the efficiency and effectiveness of veterans support legislation and opportunities for simplification. The Commission was also asked to examine the effectiveness of the delivery of veteran support services.

The Commission in its draft report noted the Air Force Association's position that 'any compensation and rehabilitation system for veterans and their families must be 'fit for purpose', recognising the unique nature of military service. Its principal aim is to return the veteran who has suffered injury or illness due to service duty to his/her former physical and/or mental health state and when this is not possible provide life-long treatment and financial support'. The Association is of the opinion this principal applies equally to any Service person who suffers injury or illness in the cause of their duty whether it be warlike or non-warlike. It also adopts the term 'veteran' to mean anyone who is, or has in the past, served in the ADF. The position is in step with Australian and State and Territory Ministers responsible for veterans' issues who in 2017 agreed to this definition. This definition goes even further than the Department of Veteran Affairs' definition as being someone with at least a single day of 'continuous full-time service' (CFTS), which excludes reservists who have not served on CFTS or been on deployments. The Association contends the system for compensation and rehabilitation for veterans applies to all those who are serving and have served. The loss of a limb during training is the same outcome as the loss of a limb during warlike, peacekeeping or humanitarian operations. One is not more or less honourable than the other. The incidence occurred in the service of the country.

The draft report available at https://www.pc.gov.au/inquiries/current/veterans#draft contains wide reaching recommendations, many seen as controversial by the veteran community. I urge you to read the draft report or at least the overview.

Much has changed since the first veterans support legislation was passed following the Great War. Australia's involvement in wars, non-warlike, peacekeeping, and humanitarian operations has been considerable since Vietnam. Military culture, the ADF structure and functioning arrangements, average period of service, and the needs of contemporary veterans during and post service have changed. We have multiple veterans support Acts that have complicated veteran support, and the delivery of veteran support systems is generally below expectations. In effect, Australian veteran support has been neglected. Consequently, I welcome the inquiry but that's not to say I or the Association agree with all the draft recommendations.

'Fit for purpose' means whether a good or service is reasonably, not absolutely, fit for intended use. The remedy is either replacement or repair. I suggest the veterans support legislations are beyond repair, being complicated and not meeting the needs of all veterans. The Commissioners have recommended harmonisation in the first instance to be followed by one veterans support Act. The delivery of veteran support services needs repair and not necessarily the development of a new bureaucracy to manage it. This is a tremendous opportunity for the Government, DVA, the ADF, Ex-Service Organisations and the veteran community to work together with an open mind to develop a veterans' support service that meet the needs of all veterans, past, present and in the foreseeable future.

Carl Schiller, OAM CSM
National President

Membership of the Air Force Association

Membership is open to serving and former members of the Australian Defence Force and Allied Armed Forces, their family members, current and former Air Force Cadets, Air League Cadets and members of the public who have an interest in aviation and who support the mission and objectives of the Air Force Association.

NSW
Air Force Association (NSW Division)
PO Box A2638,
Sydney South NSW 1235
Tel: 02 9393 3485
admin@raafansw.org.au
www.raafansw.org.au

VIC
Air Force Association (VIC Division)
24 Camberwell Rd,
EAST HAWTHORN VIC 3123
Tel: 03 9813 4600
office@raafavic.org.au
www.raafavic.org.au

ACT
Air Force Association (ACT Division)
PO Box 111, Campbell ACT 2612
Tel: 0428 622105
secactraafa@bigpond.com
www.raafaact.org.au

TAS
Air Force Association (TAS Division)
RAAF Memorial Centre,
61 Davey St, HOBART TAS 7000
Tel: 03 6200 9221
secretary@raafatas.org.au
www.raafatas.com

SA
Air Force Association (SA Division)
Torrens Parade Ground
Victoria Drive, ADELAIDE SA 5000
Tel: 08 8227 0980
raafaad@internode.on.net
www.raafasa.org.au

WA
Air Force Association (WA Division)
18 Bowman St, South Perth WA 6151
Tel 08 9288 4000
enquiries@raafawa.org.au
www.raafawa.org.au

QLD
Air Force Association (QLD Division)
PO Box 5290, Algester Qld 4115
0409 494 119
raafaqldsec1@gmail.com
www.raafaqld.com

..... FROM NATIONAL

After 25 years of publishing *Wings*, the Autumn 2019 issue is the last from Flight Publishing. With effect from the Winter 2019 issue, RAAFANSW Publishing will be the new publisher, with a new editor and layout designer.

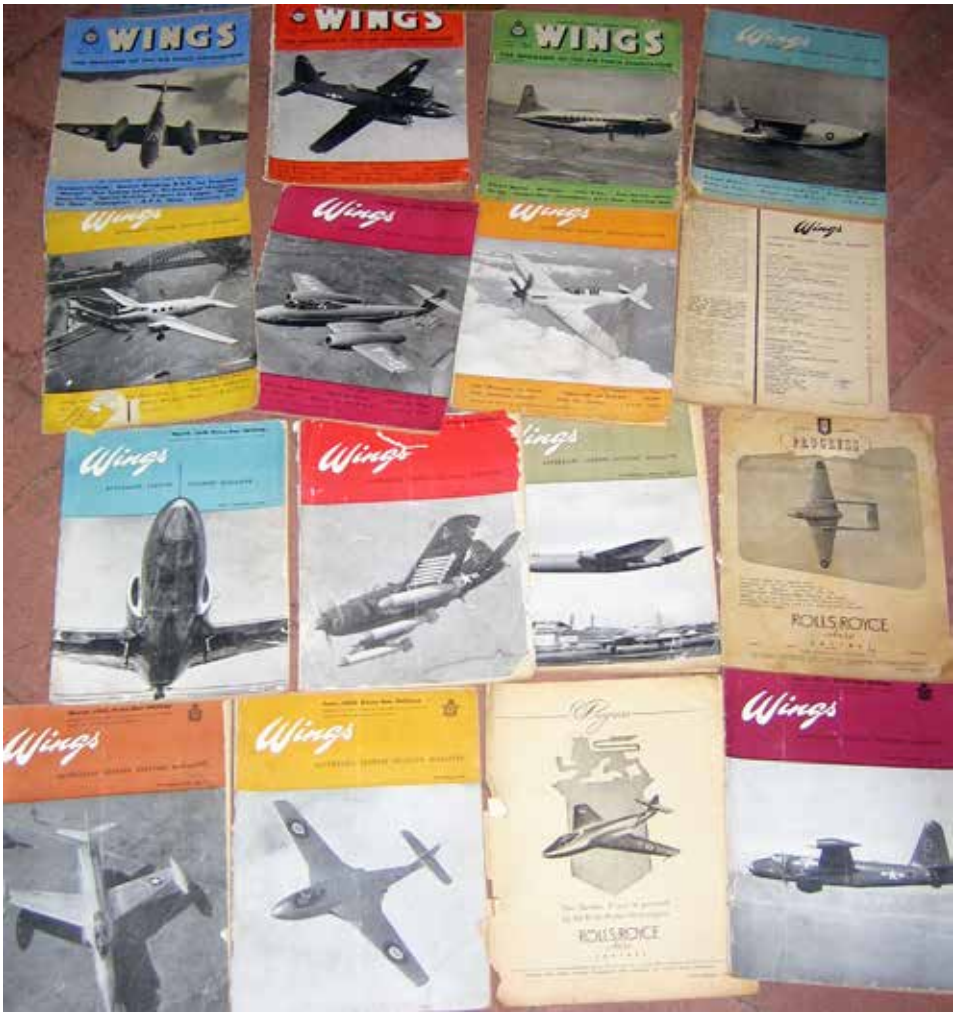
Wings has been published since 1943 when it was a RAAF Directorate of Public Relations publication. The Air Force Association assumed the publication in early 1946 and although managed by NSW Division for many years, *Wings* was a National Council publication. What followed was 73 years of a checkered history of publishers, varying responsibilities, management, editors, design, format and content. Not the least was the change in aviation technologies, primarily highlighted by the aerospace advertisers and developing air power. The cost of *Wings* has varied from paying for each copy, paying for the postage, to now, free.

While history has been an important section of *Wings*, so has Air Force Today, important to show how the RAAF meets Australia's interests as a significant participant in world affairs. Articles also identified the Future Air Force and how the RAAF will become the world's first 5th generation Air Force.

My job as Editor for 10 years was 'full-on' but gratifying to see the content produced in such a good, easily read format, especially for 'tired eyes', by Kylie, the layout designer at Flight Publishing. Meeting deadlines and the provision of content was challenging and always will be—helped by a few members who provided great historical articles, but few on modern technology; a task I took on with enthusiasm. Brickbats and the odd 'curved ball' were par for the course, most of which were ill-founded. But bouquets always out-number the negatives. My successor, Mark Eaton, assumed the duties similarly.

Wings will remain a quality magazine with the new publisher and editor as it encompasses the emergence of the RAAF into a 5th Generation Air Force. Of course, issues important to veterans and DVA will continue to be important to Air Force Association readers.

Lance Halvorson
VP Communications and Media
AFA Ltd
February 2019



Capability. Delivery. Support.

A Defence capability consists not only of the hardware that is the most tangible element of the capability but also a supplier's ability to deliver and support all elements of that capability.

This is where Mercedes-Benz stands out from the crowd.

Not only is Mercedes-Benz the only company able to supply the full range of protected and unprotected military logistics vehicles, with payloads from 0.5 to 110 tonne, but we also have an award winning record of delivering the capability that is required, not only that which is contracted.

Supplemented by a proven system that has supported our vehicles in the Australian Defence Force in peacetime and every major land operation since 1978, you have total capability delivery that you can rely upon.

Mercedes-Benz: a proven and reliable partner of the Australian Defence Force – Past, Present and Future.

For more information please contact Mercedes-Benz Australia/ Pacific on (03) 9566 9266 or military_support@daimler.com

Mercedes-Benz
Special Vehicles

A Daimler Brand

Founded in 2001, Milskil is a unique 100% Australian owned Company that provides sovereign operational training for Australia's warfighters. As a strategic air combat training partner of the Royal Australian Air Force, Milskil has been supporting simulator and ground school training for aircrew of the Classic and Super Hornet for over 15 years. Growler and F35 JSF training services have recently joined this list.

Milskil understands that quality operational training is a key discriminator leading to success in battle. Milskil readily integrates into the ADF training continuum and offers high-end instruction ranging from operational conversion, through to weapons school training and mission rehearsal. As a Fundamental Input to Operational Capability, Milskil takes very seriously its responsibility to train the next generation of warfighters.

Milskil has also provided training to Air Battle Managers of the Air Defence Ground Environment and Airborne Early Warning and Control capabilities, as well as delivering Electronic Warfare and JTAC training. Milskil offers operational support services such as range training and safety officers training, capability planning and management, staff augmentation, exercise control and white force staff. Our extensive experience designing, developing and executing constructive events, and integrating complex devices into multi-layered security domains is second to none in the Australian domain.

Milskil looks forward to continuing to provide support to the Air Force and other Defence aviation elements as 5th Generation systems are introduced and matured and as organisation structures are evolved with an increasing focus upon operational training and advanced, integrated warfighting capabilities.

Babcock to grow onshore aviation capability under new leadership

We talk to Lauren Bagshaw-Flanagan, Babcock's Managing Director of Onshore Aviation, about what it's like to lead a mission critical service and her plans for the future.

Lauren Bagshaw-Flanagan heads Babcock's Onshore Aviation business, Australasia's leading emergency services helicopter provider.

Bagshaw-Flanagan has always had a passion for aviation and in her own time achieved licenses for helicopter, fixed wing and remote pilot. Last year her passion and her career intersected when she was appointed Managing Director of Onshore Aviation for Babcock Australasia. Despite not having worked as a pilot, her work in obtaining her licences gives her a unique understanding of the business challenges.

"Delivering a 24/7 service in the most unpredictable, often complex and invariably critical circumstances, means we need the very best, motivated people, supported by robust processes and equipment. Our people have to be perpetually on point, at the top of their game and our equipment must work the second it is needed, for every mission – this means we invest heavily in our pilots, aircrew, engineering and logistics staff to ensure the highest level of readiness and performance that our clients require, much the same as our military counterparts" says Bagshaw-Flanagan.

> "Our people have to be perpetually on point, at the top of their game and our equipment must work the second it is needed, for every mission"

To customers, working with Babcock means they can be assured we are always mission-ready. We deliver their critical services in the most demanding situations – often when lives and communities are in extreme danger. Very short notice response is a key characteristic and we strive to be airborne and on our way to time-critical emergencies, in often challenging environments. Maintaining this level of readiness and performance requires a high level of dedication from our pilots and air crews, as well as our engineers and our support staff. This is achieved by a very high degree of integration with our clients – both culturally and operationally," she said.

Having operated in Australia for over 25 years, Babcock's core Onshore Aviation experience and operations include Surveillance, Emergency Medical Services (EMS), Search and Rescue (SAR), Law Enforcement, Marine Pilot Transfer and Defence services.

Each aircraft is specifically equipped for EMS and SAR, and with over 200 skilled pilots, crew and engineers at nine locations across Australia - Babcock can provide day and night missions from Adelaide to the Torres Strait. But don't expect to see the Babcock brand flying in the skies, in most cases their brand is working behind another brand.

Babcock's team responds to over 9,000 missions a year, including air ambulance services in Victoria, Queensland and South Australia. "We provide the aircraft, crew, engineering and maintenance, training, assets and equipment to ensure our customers meet their operational requirements, she said. And going forward we will be focusing on expanding our defence capabilities".

The company also has an established Offshore business in Australia that operates medium and heavy helicopters to service the oil and gas industry operating from Truscott, Barrow Island, Darwin and Dili.

Lauren Bagshaw-Flanagan, Managing Director Onshore Aviation

"In Australia, Babcock delivers complex, critical services to Defence, Federal and State Governments and blue chip private sector companies, across the Air, Land and Marine environments. Expanding our Onshore Aviation capabilities beyond rotary wing has been a key focus of mine since I took on the role last year," she says.

"There are also numerous other opportunities that would benefit from our asset management capabilities combined with our aviation capabilities, both here in Australasia and globally. We see new aircraft, new technologies and new skillsets as ways we can provide improved services and even greater commitment to our clients."

According to Bagshaw-Flanagan, Babcock Aviation Team's ability to deliver under pressure is something she is very proud of.

"Keeping calm and maintaining objectivity in a crisis situation, invariably under demanding conditions – whether it's a search and rescue operation or emergency medical retrieval – is no easy task. Our incredible crews constantly deliver for our clients on some of the most challenging aviation missions in the country. It is a privilege to work with such a professional and committed team."


babcock
Trusted to deliver:
Aerial search and rescue
services across Australasia.
Emergency Medical Services | Search & Rescue | Surveillance & Response
Law Enforcement | Offshore Oil & Gas
babcock.com.au

AVALON AIR SHOW

The F-35 Lighting II and F/A-18 Hornets will appear at this year's Airshow. *Photo CPL Craig Barrett.*

Avalon is again hosting the Australian International Airshow and Defence Exhibition, a biannual showcase that is one of the largest aviation events in the Southern Hemisphere.

Its origins can be traced back to over 40 years ago to the little country town of Schofields in NSW where on November 8, 1977 it hosted Australia's first international airshow.

RAAF Station Schofields was built by the RAAF between 1942-1944 as a satellite aerodrome for RAAF Station Richmond. Commissioned by various defence agencies including the Royal Australian Fleet Air Arm and the Royal Australian Navy between 1945 and 1994, the RAAF remained in residence until 1952 when it moved its fighter and transport units to RAAF Base Richmond and RAAF Base Williamtown.

Schofields was home to a civil flying club for many years when in 1977 it hosted the Jubilee Air Show with almost 300 aircraft and exhibits from around the world. They then held regular airshows in 1978, 1979, 1983 and 1985.

With their experience holding these airshows, Schofields was commissioned by the Australian Bicentennial Authority to organise the 1988 Australian Bicentennial Airshow at RAAF Base Richmond. This was no doubt a huge success which featured a vast array of international military aircraft never before seen by the Australian public. Displays included the huge Russian Antonov AN-124, Panavia F3 Tornado, Royal Navy Sea Harrier, the mighty US Air Force C-5 Galaxy & F-15 Eagle, and an unforgettable show by the New Zealand Air force 'Kiwi Red' aerobatic display team.

Schofields Flying Club ran a second and final airshow at RAAF Base Richmond in 1991 to celebrate the RAAF's 70thAnniversary. The remnants of SFC provided the movement to get the Aerospace Foundation of Australia going, which was responsible for forming AirShows DownUnder.

About this time, the then Premier of Victoria offered Avalon Airport as an alternative as he was keen to set up a technology-based event to attract key defence and industry representatives.

The first Avalon Airshow was held in October 1992, which happened to coincide with the wettest Spring in Victoria's history. The organisers were considering cancelling the event due to the wet, however the rain stopped and the skies cleared in time for Premier Jeff Kennet to open the event on Tuesday October 21, 1992.

The wet didn't keep the visitors away, with about 175,000 people attending the two show days and 226 Exhibitors from 12 countries. Despite the absence of the Russian MIG-29 and Sukhoi SU-27, the public were treated to the enormous Antonov AN-124 and Ilyushin Il-86. Also, the Airbus A340 visited after being introduced into service less than 12 months earlier. With warbirds and a very large RAAF and US Air Force contingent, it set the standard for future Airshows.

In 1995, with Melbournes fickle Spring weather, the airshow was moved from October to the last weekend in March. The Russians were on show again, with Anatoly Kvochur giving an unforgettable display of his especially modified SU-27P Flanker which involved the 'Cobra' manoeuvre and a low level 15ft flyby of the Avalon Runway. Apparently, the RAAF and the USAF were reluctant to compete with the Flanker, with the RAAF opting to not do the solo display of the F/A-18 Hornet, and the USAF stating the F-16 Falcon was limited to 3g max manoeuvres due to the fitting of external drop tanks.

Despite the popularity of the Russian displays, this was to be the last time they were to perform at the Airshow due to disputes with fuel payments.

5 years after the wettest spring in

Victoria, the Avalon Airshow was held during the hottest February in Victoria on Feb 18-23, 1997. With the absence of the Russians the USAF displayed their might with KC-Stratotanker and C-17 Globemasters, a US Marine Corp Super Cobra and the then recently flying Lockheed Super Constellation operated by the HARS group. Canadair CL-215 water bombers performed a demonstration after scooping water from Port Philip Bay and releasing it over show centre. 1997 also saw the first 'Friday Night Alight' with a public evening airshow after the trade day and finished with the famous F-111 'dump and burn' routine.

1999 demonstrated the growth of the air show's international presence, with 472 exhibitors from 26 countries – almost double the amount at the inaugural 1992 event. The RAAF displayed its new C-130J Hercules before it had entered service, and Eurofighter sent a mock-up of the Typhoon as possible replacement for the RAAF F/A-18 Hornet. A noticeable event was the USAF B-52 Stratofortress parked at the end of the runway for the entire show – it was ready to be deployed to IRAQ at a moment's notice.

The 2001 Avalon Airshow celebrated Australia's 100 years of Federation and 80 Years of RAAF. The USAF celebrated by having nearly 100 pilots demonstrating the B-1B Lancer, 2 x F-15 Eagles, 2 x F-16 Fighting Falcons, a C-17 Globemaster and the B-52 Stratofortess. The RAF was not to be outdone, with a Hawker Siddley Nimrod, a pair of Tornados GR.1's, a VC-10 tanker and pair of C-130 Hercules.

The C-27J Spartan from No. 35 Squadron will make an appearance at this year's Airshow. *Photo CPL David Gibbs.*

"Celebrating the Centenary of Flight" was theme for 2003, and it saw over 600 aircraft visit Avalon including replicas from the early 1900s – a 1910 Hanroit and 1911 Curtis Model D Replica, a Bleriot IX and a scale Wright Flyer II. Some vintage jets also appeared, with a Hawker Hunter, Gloster Meteor, Canberra and Vampire giving displays. However, a number of USAF aircraft intended to visit such as the F-117 Nighthawk stealth fighter were cancelled, most likely due to anti-war protests at the time.

2005 saw another successful year with over 500 exhibitors from 22 countries attending, pumping over $15M into Geelong's economy. The RAAF had another impressive line-up including a F/A-18 Hornet painted with a special scheme celebrating 20 years of service, and the USAF were back in force with impressive F-15 Eagle displays and surprise B-52 fly past.

2007 had a special guest with Charles "Chuck" Yeager himself present to celebrate the 60th Anniversary of breaking the sound barrier in 2007. A full scale mock-up of the Bell X-1 was especially constructed for the event and the USAF again had F-15s and F-16s and an E-3 Sentry to celebrate 60 years of the USAF. 2007 also introduced to the Australian public a sound they would need to get used to in coming years – the mighty roar of the F/A-18F Super Hornet. The US Navy provided the VFA-102 CAG's personal aircraft flown by Boeing test pilot Ricardo Tavern and 3 years later the Super Hornet was in service with the RAAF.

2007 also featured 3-time World Aerobatic Champion Yurgis Kairis and American show performer Jim Leroy, who was sadly killed while performing at an airshow later that year Dayton, Ohio.

Another special guest was present for the 2009 airshow, with Australian born astronaut Andy Thomas the Guest of Honour and coincided with the 40th Anniversary of the first moon landing. This airshow would be last to feature the F-111, and the wall of fire display was cancelled out of respect to the victims of the Black Saturday bushfires from the previous month. Melbourne's weather reared again, with strong wind and rain cancelling the Sunday show.

In 2011 the RAAF celebrated its 90th Anniversary at the Avalon Airshow

An Australian Army Eurcopter ARH Tiger will also make an appearance at Avalon.

Australian Government
Civil Aviation Safety Authority

AVALON 2019

AUSTRALIAN INTERNATIONAL AIRSHOW AND AEROSPACE & DEFENCE EXPOSITION

Visit the CASA stand in **Hall 1** to talk to our aviation subject matter experts (SMEs) and aviation safety advisors (ASAs). Our SMEs and ASAs will be available on the stand daily to assist with your questions on flight operations, fatigue and medical certification.

On the public days don't forget to drop by the **Drone Showcase** with any of your drone related questions.

Tuesday 26 February 2019

- Key regulatory changes including the flight operations suite
- Remotely piloted aircraft
- Aviation safety advisors

Wednesday 27 February 2019

- Key regulatory changes including the flight operations suite
- Remotely piloted aircraft
- Aviation safety advisors

Thursday 28 February 2019

- Key regulatory changes including the flight operations suite
- Remotely piloted aircraft
- Safety Behaviours for Pilots
- Human factors and fatigue
- Aviation safety advisors

Friday 1 March 2019

- Key regulatory changes
- Remotely piloted aircraft
- Safety behaviours for pilots
- Human factors and fatigue
- Aviation safety advisors

Saturday 2 March 2019

- Aviation safety advisors
- Sport aviation

Sunday 3 March 2019

- Aviation safety advisors
- Sport aviation

casa.gov.au | 131 757

by displaying its new B737 AEW&C Wedgetail aircraft alongside C130H & J Hercules, F/A-18 Classic and Super Hornets and C-17 Globemasters.

The USAF had a strong show especially highlighted with 2 x F-22 Raptors on static display for the first time in Australia. Unfortunately, the qualified display pilot was not qualified, but this was made up at the following bicentennial event in 2013.

The last Avalon Airshow in 2013 built on the success of all previous years, with a crowd of almost 170,000 people attending the 6 day event. The much hyped F-22 displays were to be the USAF's only flying displays for the Raptor in 2013 due to tough cuts in the US Air Force's budget, and they did not disappoint. Other US military aircraft included the B-52 Stratofortress, a pair of F-16C Fighting Falcons, and both the RAAF and USAF displayed their C-17 Globemasters. The RAAF featured a 4-ship air display of the Super Hornets which started with precision formation flying before separating into a 2-on-2 airfield attack and Air Combat Manoeuvring (ACM) demonstration.

The civilian acts were just as impressive and included the Breitling Wing Walker with a pair of Boeing Stearman biplanes. They were reduced to one aircraft on the public show days after an engine failure caused one aircraft to be put down in a field on one of the trade days prior. No one was injured and the aircraft was later repaired to airworthy condition. Australian Melissa Pempberton and Skip Stewalt of the USA also performed fantastic aerobatic and pyrotechnic displays as the TinStix of Dynamite team.

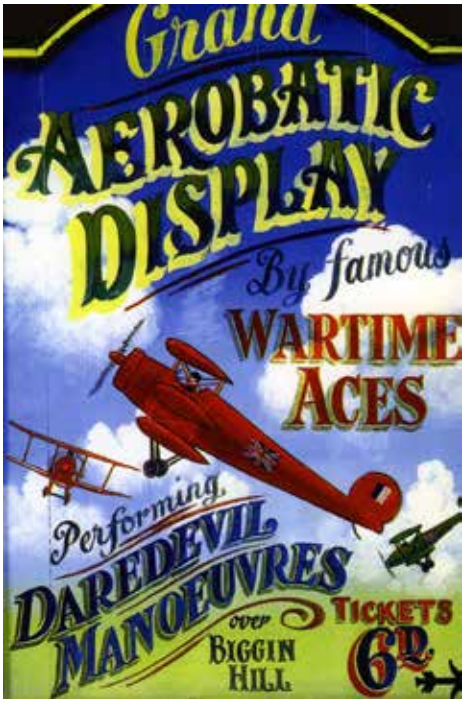
The P-8A Poseidon from No. 11 Squadron will make an appearance at this year's Airshow.

This year promises to be just as big with the theme 'A Centenary of ANZAC – Heroes of the Sky'. Organisers have sourced a large number of historic warbirds from Australia and especially New Zealand, with many WWI replicas to take to the air for a moving tribute to the brave aviators who were the heroes of the sky 100 years ago, from Gallipoli to the present day.

Almost 100 aircraft are expected to take part in the air displays this year, and welcome the return of many favourites including Skip Stewalt, Melissa Pemberton, Yurgis Kairis, the warbirds from the RAAF Museum, Temora and HARS, Bob Carlton and his jet powered glider and some new stars including Paul Bennet with his highly modified Wolf Pitts Pro.

Therefore, if you love aviation, the smell of avgas or kerosene, the sound of a radial engine or the power of a supersonic jet, there will be no place better to be than at the Avalon Airshow between February-March.

Courtesy Soar Aviation



FIRST SOLO

Alan Read

August 24, 1953 was a beautiful day. Brisbane weather is usually good in August and this was a typical day with nice stable conditions. A clear and sunny sky in Queensland - beautiful one day, perfect the next. It was indeed a perfect morning for my first solo in RAAF Tiger Moth A17-657.

I had groaned through eight weeks of (for me) pretty intensive ground school which had taken me way beyond my 3rd year high school West Australian Junior Certificate level and into new areas such as aerodynamics and the operation of a circular slide rule so I had worked pretty hard just to still be there. Some of my colleagues on No. 13 Post War Pilots Course did not make it through ground school and they just disappeared quietly overnight, without fuss or farewell.

Al as a trainee with Tiger Moth, 1953.

In the air at last at 1IFTS, Archerfield, to complete 15 hrs of flight grading to see whether we could progress on course and possibly make a RAAF pilot, or return to civilian life. There was no second prize. The RAAF did not want navigators or any other aircrew mustering at the time so it was in as a pilot or out. The stakes were high!

I had first become airborne in a Dakota during my six months compulsory military service as a National Service Trainee at Pearce in Western Australia in late 1952 and I was smitten. I had joined the Air Training Corps to enhance my chance of doing my training in the RAAF and fortunately, this had worked. Even then, I could not stand the thought of being a grunt.

Anyway, as soon as we left the ground in that Dakota, I put behind me any thought of returning to my previous employment as an audit clerk in the Perth Office of a major accounting firm headed by Charles Court who later became Premier of Western Australia. Mind you, I must say what I had in that job was a wonderful opportunity.

Western Australia was just awakening to a major boom in resources and the ten storey CML sky scraper at which I used to marvel when doing my banking rounds was soon to be miniaturised by some amazing new developments. I

I had first become airborne in a Dakota…. and put behind any thought of returning to my previous employment. *Defence Image.*

missed all of that but then again, I missed going to jail as well. Perhaps I would have - some people of my era did. By then however, I had been bitten by the bug that gets every aviator who loves his career. Once airborne for the first time, that was IT - a feeling I could never describe and never let go.

My first solo on 24 August, 1953 was an experience never to be forgotten. I know every pilot remembers and relishes that day and I was no different.

It had not been easy getting there. The six hour test with the flight commander was the first hurdle. My first six hours had been something of a nightmare.

The 'Screaming Skull' was his nickname and he didn't like instructing. He was probably the worst possible instructor for a sensitive, under confident nineteen-year-old student who thought himself hopeless. Somehow, I survived his rantings and staggered through to the test.

Most of us passed this bench mark and I was allotted to a nice, steady, fatherly FLTLT who encouraged me and will be my friend forever!

I started to feel better about myself and the solo check with the CFI after about four more hours went ok. He climbed out of the front seat, showed me the control column he had removed and said "off you go for one circuit". I actually sang downwind and can still recall the awesome feeling when I landed and taxied in - I have actually been in command of an aircraft.

I have never regretted leaving purple ink, audit ticks and office work behind in my first job in the accountant's office after leaving school. My life since then has been a dream and one of which I could never have conceived that day at Archerfield.

When I graduated at Point Cook in July 1954 as a SGT pilot, those wings felt very heavy indeed. I had made it!

My first posting was as a second pilot on Long Nose Lincolns in the maritime reconnaissance role at 10SQN, Townsville. Now this was not the most exciting career job for a young, eager pilot but I loved it and look back on three and a half years in the squadron with a great deal of happiness and satisfaction. Being commissioned and made a captain of a maritime crew on a multi-engined aircraft was something that helped me significantly as my time in the RAAF progressed.

That beautiful lady of the sky, the Canberra Bomber

had caught my eye. I was delighted to be posted to 1SQN, Amberley as one of the first crew members to man the newly equipped Canberras in the Squadron after it had returned from Singapore where, with Lincolns, it had been involved in the Malayan Emergency. My five years on Canberras which included a trip around the world to attend the Nigerian Independence Celebrations and two years in Butterworth Malaya, passed so quickly. My dream continues!

That beautiful lady of the sky, the Canberra Bomber had caught my eye. *Photo courtesy RAAF Museum.*

In 1967 after a tour as a flight commander at RAAF Academy and a year at Staff College, I was selected for a posting on exchange to the USAF to fly the reconnaissance version of the then top performing fighter aircraft in the world - the Phantom. I had been posted to the USAF as an instructor pilot to train USAF pilots and navigators in the art of reconnaissance as well as converting them to the RF4C Phantom so that they could go to war in Vietnam. I realised this was a big job and I did not feel I had the experience or background to do it well.

I was combat ready on the incredible F111C as well as having experience on the Chinook, UH1 helicopter and my old favourite, the Canberra. *Photo ABS Helen Frank.*

I could barely spell the word reconnaissance and I had no instructional training at all. I needed to go to Vietnam to find out what was going on and more importantly (for me at least) to gain the confidence and the credibility to do my job. After working both the USAF and the Australian Embassy side, my orders finally came through: 179 days temporary duty with the 12th Tactical Reconnaissance Squadron at Tan Son Nhut,Vietnam. I was going to war but by invitation only.

You see, the USAF for protocol reasons could not order me to the war in Vietnam. I really cherish my invitation to a war from the US Secretary of the Air Force: "Squadron Leader Alan R Reed, this Unit is invited by the Secretary of the Air Force to proceed on 179 days temporary duty etc, etc". My USAF friends gave me much advice about my suggested reply to the Secretary's kind invitation!

After six months and 100 missions in Vietnam, including a few into the North, neither the USAF or I was not advised of any restriction on where I could go (other than Cambodia). I returned to Shaw Air Force Base in South Carolina and now confident and with credibility, completed my tour as an instructor pilot and flight commander.

Later, I commanded 6SQN flying the magnificent F4E as an interim aircraft when the F111C was delayed, and later as a GPCAPT held the appointment of Air Staff Officer, Amberley, responsible to the OC for all flying operations on Australia's major base. At this time, I was combat ready on the incredible F111C as well as having experience on the Chinook, the UH1 helicopter and my old favourite, the Canberra by then in a target towing and survey role. Could there be a better aviator's job?

I was posted to the USAF to convert pilots and navigators in the art of reconnaissance as well as converting them to the RF4C Phantom.

For me, that day in August, 1953 was a wonderful, satisfying and most enjoyable milestone entry into the amazing world of aviation - a career I have enjoyed immensely and after more than sixty years, I still enjoy.

I am extremely thankful to FLTLT Laidlaw, the instructor who mentored me through those early stressful training times and many other aviators and leaders who gave me the opportunity to delight in my aviation career. I have never done a day's work in my life, except for those early audit days with purple ink on my fingers.

There is still nothing like the wind in one's face as the Tiger Moth gains speed on take-off and that is why I was so pleased on 24 August, 2013 as I powered my Tiger Moth, VH-CXY, down the grass alongside runway 13 at Gympie and took off on the anniversary of my first solo flight just sixty short years before. I remembered that day like it was yesterday. It was again a beautiful day in Queensland – one more to remember.

I powered my Tiger Moth VH-CXY … and took off on the anniversary of my first solo flight just sixty short years before.

Side note: Al Reed first flew solo in a de Havilland Tiger Moth in 1953. In 2013 (at 80 years) he celebrated the 60th anniversary in style with another solo flight.
He was assisted by his granddaughter, Chloe, and surrounded by friends. Significantly, two gentlemen who graduated from the same pilot's course (No.13) made the journey to help him celebrate this achievement.
A short film at https://vimeo.com/75132689 covers the event.

With 30 years of aircraft painting, our shop provide high quality refinishing of General, Corporate, Cargo, Commercial Aircraft, Helicopters & Military Aircraft.

Douglas
AEROSPACE

+61 425 255 366 | enquiries@douglasaerospace.com.au
Douglasaerospace.com.au

WHEN IT COMES TO DEFENCE, THE SKY'S NO LONGER THE LIMIT.

WE MAKE IT FLY

Airbus is the world's leading independent supplier of cutting edge defence and space technologies. We deliver strategic advantages in a rapidly changing environment – thanks to a network of connected smart assets. From military aircraft, satellites and unmanned systems to services such as cybersecurity, geointelligence and secure communications we've been serving governments across the globe for over fifty years.

Security. We make it fly.

airbus.com

AIRBUS

We are proud to be a 100% owned and operated Australian manufacturer.

With over 40 years of experience, we are Australia's leading manufacturer of aviation graphics. We are a CASA approved Part 21K supplier, we issue our parts with an Authorised Release Certificate (Form 1).

InFlight Graphics specialise in...

- Placards & Decals
- Paint Masks
- Graphics
- Labels
- All Your Technical & General Printing Requirements
- Dye Sublimation Printing (Fabric, Plastic & Metal)
- Large Format Printing
- Name Plates & Safety Signs
- Engraving
- Signs
- Laser Annealing & Etching

InFlight Graphics Pty. Ltd.

Factory 6 / 1-3 Frederick Street, Sunbury, Victoria, 3429, Australia
E: enquiries@inflightgraphics.com.au
Ph: +61 3 5428 6203

www.inflightgraphics.com.au

ABN 42 545 181 238

CASA APPROVAL PA-592089

Come see us at Avalon Airshow 2019 for a souvenir showcasing our capabilities

BAC SYSTEMS

Support Australian Innovation and Manufacturing

Ask for our latest BAC catalogue

DESIGN AWARD ™

BAC STORAGE MODULES
Designed in Australia
Licence No. 85253
Good Design Australia

Modular Workplace, Drawer Storage Systems and BAC 77 Racking

BAC Systems 193 - 195 Power Street Glendenning NSW 2761
www.bacsystems.com.au + 61 2 9832 2777

Coincidental Pilgrimage

Andrew Johnson

As I sit in the lounge of Brisbane Airport I reflect on the last few days and the few weeks leading up to it and wonder how many coincidences can be strung together to create the opportunity for what occurred.

For those who like it brief. A bunch of people climbed a big hill to see a plane wreck-it was amazing.

For those with a longer attention span please keep reading.

Some months ago, my work colleague and friend, Val Tuckett, sent me a copy of a news article that had appeared while I was on leave, detailing the long lost story of the Townsville nurse who had perished on an ill-fated mercy flight from Townsville to Brisbane in April 1955. The flight had been on a RAAF maritime reconnaissance aircraft, an Avro Lincoln. The aircraft had flown into Mount Superbus, southern Queensland's highest peak just after 4 am on 9 April, having left Townsville after midnight with a crew of experienced RAAF officers, nurse Mafalda Gray and baby Robyn Huxley, who required urgent care in Brisbane. The news story told of the research being done by a senior Townsville nurse, Simon Mitchell, and asked for any further information that may be available. Simon had assembled a group of senior nurses from the hospital that was intending to take the arduous journey and pay their respects to Mafalda at the site of the wreck.

As I read the story my interest was piqued on a number of levels. As a former RAAF Medical Officer, I was very familiar with the ‘mercy flight’ and the perils and challenges that went with it. Secondly, I knew that ‘Uncle Al’ Reed (my father's, brother's, brother in-law) had flown Lincolns out of Townsville.

Overwhelmingly though, I felt an enormous sense of pride that our nurses were acknowledging their forbears in this way. I considered asking if I could join the pilgrimage, but decided that this was appropriately ‘nurse business’. I resolved to speak with Al about it to see if he had any relevant information that I could pass on to the group.

I caught up with family, including Al, for dinner in Melbourne in mid-March. As I started the question, "Al do you know anything about a Lincoln...", Al finished it for me. "A73-64, mercy flight from Townsville, departed around 0030 and crashed losing all on board.”

Al knew a lot about it. He was meant to be the second pilot.

The conversation around us dried up as Al recounted the story of how, as a sergeant pilot, the junior most flyer in his squadron, he had been rostered to the standby crew over the Easter period as second pilot to the Commanding Officer, Wing Commander John Costello. Late in the evening he had been roused by the orderly sergeant to prepare the aircraft as they had a mercy flight for a ‘blue’ baby.

Al had done the preflight inspection, and ensured the aircraft was ready to fly. He briefed Nurse Gray, secured the cot in the long nose of the aircraft and readied the aircraft for departure as the Wing Commander and navigator Squadron Leader Finlay, prepared the flight plan.

When the Wing Commander came to the aircraft, he was accompanied by the Squadron Chief Engineer, Squadron Leader Charles Mason, also a pilot, and told young Reed his services were not required as second pilot that night -Mason would fly as second pilot.

Al was offered to opportunity to fly ‘down the back’, but in the best decision of his life, Al declined. He was last off the aircraft and watched it depart into the night sky before heading back to bed.

By the time Al came out for breakfast, the news of the crash was around the squadron and Al was greeted by his colleagues as if he were a ghost, they had all thought him to be on board.

Al had never been to the crash site and had often thought about it, the story of A73-64 was part of the family story, and his son Gus, an airline captain based in Hong Kong, had tried many times to convince Al to do the ‘walk’ together. When I told Al of the nurses' pilgrimage, his eyes revealed the recognition of an opportunity to close some unfinished business.

In his 80th year, there was a serious question about the wisdom of the move, but over the next ten days, the idea grew from a kernel of an idea to a full blown family affair, with both sons, Gus and Cameron, plus Gus's wife Melissa and two daughters, Aimee and Chloe, all joining in.

Simon and the group from the Townsville Hospital - Vicki Carson, Katrina Roberts, Michael Shannon, Robyn Copley and Chad Farrell - all welcomed the concept of the new additions with incredible generosity.

Meeting up in Warwick, other party members were added to the mix in the form of Laura, another nursing colleague from Cairns, Stephen Tanner, Simon's brother-in-law (a vet in Warwick), his son Levi and importantly Warwick Finlay, son of John Finlay, the navigator. It was quickly established that Levi (from Warwick) and Aimee (from Hong Kong) were a year apart at Geelong Grammar, and Katrina's uncle had been in the RAAF 13th Flying Course together with Al - more coincidence.

The group were shown photos and drawings of the aircraft, and Al's log book revealed he had flown as second pilot of another Lincoln to Brisbane on 11 April 1955 to retrieve the bodies of Mafalda Gray and Robyn Huxley.

Simon had previously circulated a story of that flight, written by the first pilot Flight Sergeant Laming. This chilling tale described how the Lincoln had been loaded with the two coffins and had prepared for the flight, timed to return the bodies in time for the funeral.

As the pilots started the engines, fuel spewed out, requiring emergency shutdown. A further successful attempt at starting was rendered useless when the aircraft had another critical failure and was deemed unserviceable.

An alternative aircraft was sourced, only to also fail to take

off, and a third, successful in leaving Brisbane with the bodies on board lost communication as the wheels came up, flying in radio silence to Townsville, communications re-established as the wheels touched down. The parting comment was it seemed they didn't want to fly again.

Perhaps Mafalda's spirit was still there on the hill.

The intelligence we had about the walk was mixed. On the one hand, this was to be a moderate walk, “three and a half Castle Hills”, taking around 3-4 hrs. On the other, Warwick's son Paul had attempted the walk the week before and had to pull back as his circle of navigational uncertainty was too large. He got lost.

The party of 17 hit the road bright and early, ready for anything - just as well.

Early team training involved the task of chain sawing and removing a tree from the wrong road - an inauspicious start.

On foot and under pack, it was soon clear that navigation in this terrain was going to be a challenge. Suffice to say the 3.5 km route took 7 hrs and 10 km to complete. Up and down hills, across swamps, cutting through dense rainforest, the party made its way. All rose to the challenge.

We pulled up stumps at the first site of wreckage, a massive V12 Merlin Engine that had separated from the aircraft and rolled down the hill to lodge in a creek bed. We knew we were back on track and we knew where we had to go - up.

Given the time of day, we changed the plans from the intended ascent up what we knew to be a pretty steep section for a camp at the summit, to a well-earned rest, an early night and a pack less ascent the next morning.

Timing would be tight, but our confidence was buoyed by the Merlin find, and anyway, how far and how steep could it really be?

Bloody steep and a bloody long way up as it turned out.

After 2 hrs arduous climb, much of it on hands and knees, we had pretty much determined we were never going to find a path to the summit, let alone the wreckage, encountering numerous seemingly impenetrable barriers of stone, fallen timber and dense undergrowth. Visual contact with the people in front and behind was completely lost with 5metres separation in many sections, increasingly so as we came closer to the top.

Nobody was keen to look back, whilst the ascent was bloody hard work, the descent through slippery mulch looked downright treacherous.

Finally, when we were about done in, Gus decided he was just going to "(expletive) find it". With no pattern to his traverse, he zigged and zagged and finally bellowed "WRECKAGE”!

At the tail of the group, we could hear some commotion ahead, but the granite cliff between us shielded the sound. Soon enough, Stephen who was near enough to hear Gus and was able to reach him, bounded back to guide us in.

As we came into the wreckage, the unlikeliness of the achievement dawned on us. Gus could easily have passed within metres of the wreck and missed it completely- such was the commitment of the rainforest to reclaim the space.

Ceremony is an important part of any pilgrimage, and so it was, with poems, speeches and deep emotion, not to mention a plaque left and its duplicate returned to the pack for display back in Townsville Hospital.

The descent was achieved with much undignified bum sliding, near misses with dislodged rocks sliding by, and great team effort. No injuries and much relief.

The trek out saw us achieve the 3.5 km in a little over three hours and 5 km, ignoring the markers of other lost parties and sticking to a compass bearing that saw us trudging through different swamps, cutting through different dense rainforest and somehow avoiding going up any hills.

Day two saw us cover around 15 km in over 8 hours. We were all very proud of our efforts, and all in awe of the oldest members of the party. It was a very personal journey for Warwick and Al, and we were all honoured to have been there with them.

Ready for a beer, we packed and parted - all the better for the time we had spent together. A great group of disparate souls with different backgrounds, stories and motivations, coinciding and coalescing into a very moving pilgrimage.

And how DID Gus find the wreck?

"She called to me."

CRC AUSTRALIA CELEBRATES 50 YEARS

CRC Industries Australia celebrates 50 years of manufacturing in 2019, marking a very special milestone for the Australian division of the global CRC Industries company.

CRC Industries is a leading supplier of speciality products for maintenance, repair and overhaul (MRO) professionals across a wide array of industries including Automotive, Industrial, Mining, Food and Beverage, Utilities and Defence.

While CRC was first established in 1958 in a small Pennsylvania garage, the company started manufacturing in Australia after being incorporated as a propriety Company of Australia on 13 October, 1969.

What many don't realise though is that CRC's journey 'Down Under' actually began almost a decade earlier, with CRC product distributed within Australia from the United States throughout the 1960s by the Balfour Buzzacott Division of Email Limited; which also distributed the product of the well-known Dymo Labels.

Following the incorporation of CRC Industries Australia as an Australian Company, the business model switched to a focus on manufacturing and facilities at North Ryde in Sydney were established. By 1974, the installation of aerosol and bulk filling lines were completed, allowing locally manufactured CRC product to be sold throughout Australia and the rest of the Asia-Pacific region.

The company enjoyed such growth that by 1980, a larger facility was needed and was opened in Castle Hill in Sydney's north west region.

Progress continued for the company and in 2004, CRC Industries Australia acquired iconic Australian auto care brand Kitten to join its growing stable of products.

To this day, Kitten sits amongst a full range of CRC products which are produced and packaged in the Castle Hill factory including market-leading products such as CRC's famous 5.56, Brakleen, Penetr8 and CO Contact Cleaner.

CRC Australia has also been proud to establish export agreements with more than 15 countries throughout the Asia-Pacific region.

"What an exciting time this is for all involved in CRC Industries Australia," CRC Industries Australia Managing Director, Shona Fitzgerald, said.

"Fifty years of manufacturing is a tremendous milestone and one that we are very proud of. From the establishment of a small operation in Sydney in 1969 just 11 years after the global beginnings of the company, CRC Industries Australia has experienced exponential growth to today be a market leader and a key contributor to the global success of CRC Industries.

"Our mission is to satisfy the needs of our customers with the highest quality speciality chemical products while always remaining customer focused. We do this in a forward-thinking and creative manner and with a keen focus on innovation and R&D. We empower our employees and support our communities which has allowed us to prosper where many others have failed.

"Our growth and longevity here in Australia is a true testament to the efforts, dedication and skill of all involved in CRC Industries Australia and I send my thanks to our employees, our suppliers, our distributors and our partners for the roles they have played in bringing us to where we are today.

"The future certainly looks bright and we can't wait to see what we can achieve over the next 50 years."

CRC Industries is a global supplier of chemical specialty products; manufacturing more than 1,300 items and developing specialised formulas to meet the unique needs of its customers. The company operates 26 facilities throughout the world. CRC Australia's registered brands include Kitten, So Easy, RE-PO, Trefolex, Aerostart, Maniseal and the CRC Greenlight food safety program.

Family-owned investment management company, Berwind, acquired CRC Industries in 1981. With its roots dating to 1886, Berwind has evolved from its beginning as a coal mining company to a diversified portfolio of highly successful manufacturing and service companies, which are leaders in their respective markets.

For more information, visit www.crcindustries.com.au

The Professional's Choice for 50 Years

CRC Industries is marking their 50th year of manufacturing in Australia. Founded by Charles J. Webb II, CRC stands for value, innovation, quality and a commitment to serving the needs of the end user.

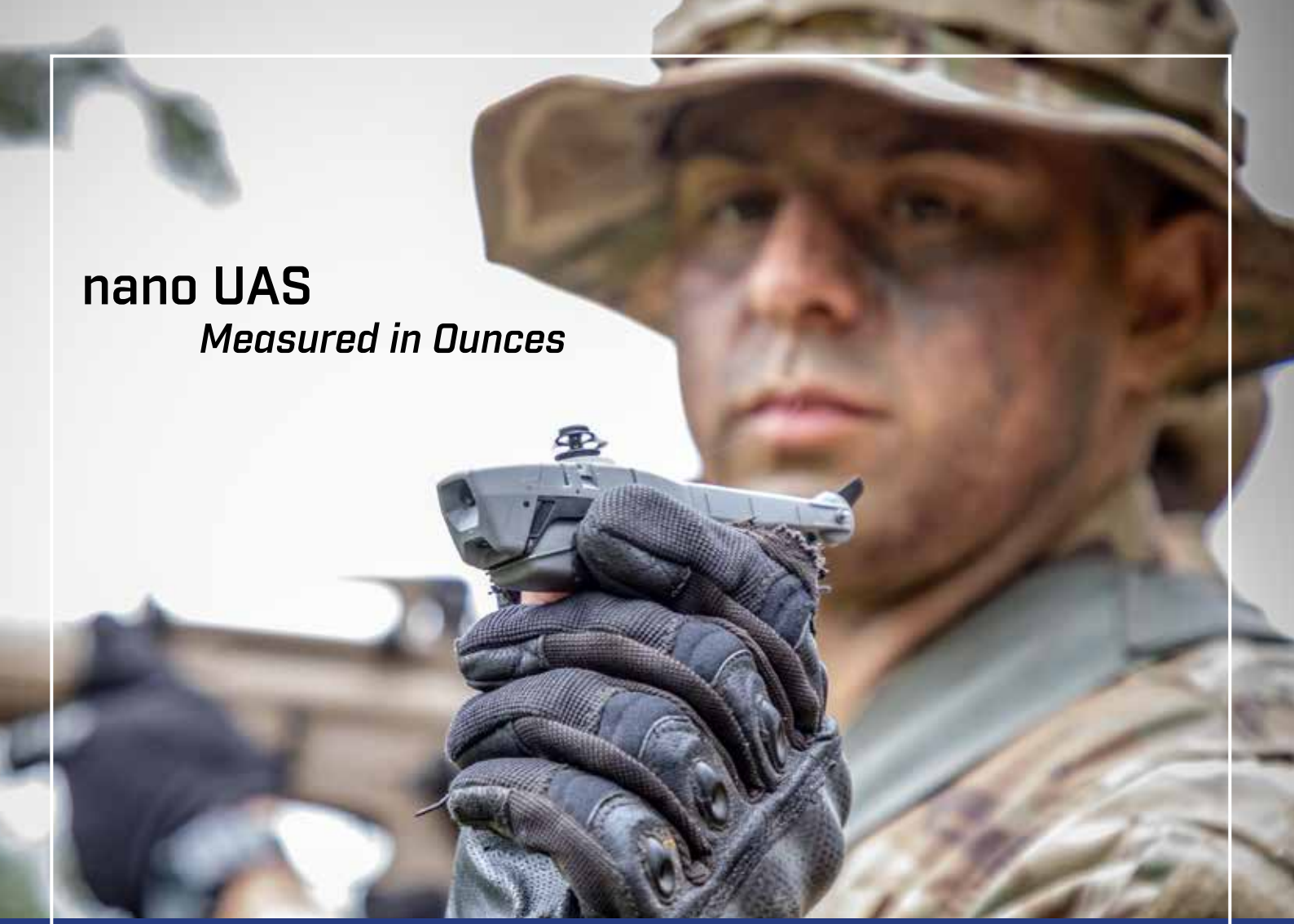
CRC began in a Philadelphia garage with a single product, CRC Corrosion Inhibitor. Today CRC manufactures a wide range of application needs in a diverse array of industries - industrial, electrical and automotive.

PH 1800 224 227 info.au@crcind.com
WWW.CRCIND.COM.AU

/CRCAus /CRCindustriesau /CRC Industries Australia

The Professional's Choice

CLEANERS | LUBRICANTS AND PENETRANTS | PROTECTANTS | SPECIALTY



nano UAS

Measured in Ounces

Mission Accomplishment

Measured in Lives Saved

The FLIR Black Hornet™ is the smallest operational unmanned surveillance system in the world and has been used extensively in combat operations by NATO forces over several years. Described by its users as a "Game Changer" and a "Life Saver", it has created a new standard and class for the smallest UAS. Learn more at www.flir.com

FLIR BLACK HORNET™

FLIR®

AIR FORCE LONGEVITY

Les Sullivan

Wing Commander Les Sullivan (Rtd) and wife Joan (nee Symons) at 94 years and 95 years would be among the oldest surviving married couples with service in the RAAF and WAAAF in WWII. Les and Joan met at the 1956 wedding of RAAF VIP flight navigator, FLGOFF George Munrowd and OIC WAAAF, RAAF Fairbairn, Section Officer Betty Arndell. Les and Joan were married in 1957. They have two children and two grand-children.

Joan Symons enlisted in the WAAAF, September 1942 and served as a Clerk General at 5 Service Flying Training School, Uranquinty, RAAF Garbutt and Legal Branch, HQ Eastern Area, Darling Point. She was a stenographer at the court martial of WGCDR Clive Caldwell, DFC and Bar, Distinguished Service Cross, Polish Cross of Valour, before her discharge in March 1946. Her association with the RAAF and WAAAF as a daughter, member and wife spans 93 years.

She had been a "RAAF brat". Her father, SQNLDR William (Bill) Symons, MBE, was born in London, 1893. After serving in the British Army in the Middle East in WWI he, with wife and year-old Joan, migrated to Melbourne.

He enlisted in the very young RAAF at Point Cook in June 1925 as an Aircraftman Carpenter Rigger at 1FTS with service number 651, and later at 1AD Laverton. In 1929 he was posted to RAAF Richmond where he served in 3SQN, 101 Seaplane Flight on HMAS Albatross, 4 and 5SQN. In 1939, he was a member of the technical team sent to the Lockheed factory, Burbank, California on the purchase of the Lockheed Hudson, the first all metal aircraft in the RAAF and on return supervised their assembly at 2AD. He was discharged as a WOFF and commissioned in the Citizen Air Force with service No. 2926 in 1941.

WWII postings were 5AD, CO 4RSU, NT where he learned he had been made a member in the Military Division of the Order of the British Empire (MBE). He continued service until June 1950 when he retired after 25 years in which time he saw the RAAF transition from wood, wires and linen to jet fighters. He died at 85, a week after recording his reminiscences.

Les Sullivan, while a student teacher, enlisted in the RAAF in October 1942 and after training as an Airframe Fitter was posted to 1WAGS Ballarat, 3WAGS Maryborough, QLD and 41SQN, Cairns. On discharge in 1945, he began his teaching career while completing a Bachelor of Arts degree at University of Sydney as a part time student. In February 1952, he obtained a permanent commission in the RAAF as an Education Officer.

His 22 year career included two postings to RAAF STT, OTS, RAAF Bases Fairbairn and Richmond and staff appointments at HQ Training, Operational and Support Commands. He spent 1968-1969 on exchange appointment at the RAF School of Education.

After retirement in June 1974 as Staff Officer Ground Training, he was an educational counsellor at RMIT Melbourne for 12 years. His book, 'Not to be shot or exported - an airman's letters home 1942-1945' won first prize in the 1994 RAAF Heritage Awards and in 2008 'Proceed on posting- a RAAF education journey 1952-1974' won second prize. He has contributed to WINGS over recent years.

Les joined the RAAFA in 1948 and has been a member continuously since 1996. Les and Joan look forward to participating in commemoration of the centenary of the RAAF in 2021, which has played an in important part in their lives.

Main picture: He was a member of the technical team … on the purchase of the Lockheed Hudson, the first all metal aircraft in the RAAF. *Defence Image.*

Les Sullivan and wife, Joan, wearing her father's medals ANZAC Day 2018.

Specialist underwriting agency for aviation insurance

Catalyst Aviation Insurance provides professional specialist intermediated aviation insurance underwriting and claims services to the general aviation industry in Australasia and the wider Asia Pacific region.

Aviation risk represent a specialist area of insurance and with more than three decades of experience in underwriting, claims handling and insurance advice in the aviation industry, the team at Catalyst Aviation Insurance have the expertise to meet the needs of our clients.

- Australian owned underwriting agency
- Industry experts
- Airport owners and operators insurance
- RA AUS
- Fixed and rotor wing
- Airport refuelers
- Hangarkeepers liability insurance including products
- Lloyd's security
- Risks written in Australia, New Zealand, Asia and Pacific
- Industry leading claims service
- Same day quotations

Light aircraft insurance

Helicopter insurance

Hangarkeepers insurance

Catalyst AVIATION INSURANCE

Contact Brendan Warner or Chris Bryant-Smith
on **+61 (3) 9132 9350** or visit
www.catalystaviationinsurance.com.au

Coverholder at LLOYD'S


thalesgroup.com.au
The people we rely on to keep the world safe, they rely on Thales
Wherever safety and security matter, we deliver
SPACE-BASED DEFENCE SYSTEMS
Proven milsatcoms, surveillance, early warning, positioning, imagery and electromagnetic intelligence
AEROSPACE DEFENCE
A comprehensive range of solutions to protect airspace against conventional and ballistic threats
NAVAL DEFENCE
State-of-the-art sensors and C4ISR solutions enable naval task forces to be successful in every type of operation
SECURE TELECOMMUNICATIONS & INFORMATION SYSTEMS
Real-time information superiority, better NATO/Coalition interoperability, efficient collaborative combat and force protection
CYBER DEFENCE
Protect data from system design to operational management for mission critical systems and network centric operations up to Defence Top Secret
LAND DEFENCE
Scalable and interoperable systems and platforms with a full range of sensor to effector solutions
Only Thales provides proven, fully integrated and interoperable defence solutions that span all of the key sectors of space, air, naval, land defence and Cyber Defence. We help more than 50 governments to protect armed forces, civilians, high-value assets and infrastructure. From sensor to effector, our integrated smart technologies provide end-to-end solutions, enabling decision makers to deliver more effective responses. Every moment of everyday, wherever safety and security are critical, Thales delivers.
Search: Thalesgroup
THALES
Together • Safer • Everywhere

Martin-Baker Australia


PC-21


F/A-18F


Hawk


F-35 LIGHTNING II


CH16C


NACES


MK10L


US16E

Proud supporters of the Royal Australian Air Force

Our aim is to provide servicing of seats, on time supply of spares and authoritative field service advice to our regional military and civilian customers, ensuring aircrew safety by maintaining world class standards with skilled and OEM qualified personnel.

Exhibiting at Avalon 2019
Hall 3 Stand 3A20

The RAAF Base Pearce facility became operational in June 2018 to service primarily CH16C seats as fitted to the PC-21, however the facility is capable of servicing a number of seat types. It is responsible for servicing all of the CH16C seats from all locations in Australia, with the seats being transported to and from the various PC-21 operational locations as maintenance activities are required. From February 2019, there will be 3 full time employees in the facility, 2 of which are Trainee Ejection Seat Technicians.

The Newcastle facility is currently under development, and once operational, will be responsible primarily for servicing US16E seats as fitted to the JSF. Like the RAAF Pearce facility, it has been developed and fitted out to provide multi-platform capability which includes CH16C, as a back-up to the RAAF Pearce facility, MK10L and NACES. The Newcastle facility will also be the operational hub for our JSF Field Service capability.

Martin-Baker Australia

Since 1951 Martin-Baker seats have saved the lives of 78 Australian Aircrew

QUEENSLAND

AUSTRALIA'S
NEXT-GENERATION
DEFENCE SUPPLIER

Visit us at
STAND 2G25 | HALL 2
at Avalon 2019

www.qld.gov.au/defencejobs

DEFENCE JOBS **QUEENSLAND**

Queensland Government

Authorised by the Queensland Government, William Street, Brisbane.

AUTONOMOUS AVIATION

LEARNING FROM THE GROUND UP

Max T. Pickering

Across the globe, the aviation industry employs about 500,000 commercial pilots. According to recent reports, there is a requirement for more than 600,000 new pilots in the next 20 years. This is accounting for a growing retirement rate of an aging generation of professional pilots, as well as the steady growth of airline travel across the globe (Gabriel, 2017). This means that more than half of the pilots that will be flying by 2027 have not started training yet (CAE Inc, 2017). These new pilots are receiving less training and will have less flight experience than their retiring counterparts.

Previous pilot generations, due to the large draw from military pilot pools and differing training methods, had a reserve of technical aeronautical knowledge, which has led to the safety culture of the aviation industry that can be observed today. The technology that is implemented by these experienced pilots, such as autopilot features, has been done with an underlying assumption that the pilot is able to utilise the capability that the technology provides them in order to make safe decisions about flight operations (Sinnett, 2017).

If new pilots do not have the experience and proficiency of the pilots of today, a technical solution is required in order to maintain the safety standards of the industry. This technical solution may be one where the aircraft has the capacity to make active decisions about flight. This is called autonomy and its rapid development is currently occurring in the automotive industry. How can aviation learn from this development in order meet the rapidly changing requirements of a growing industry?

Autonomous cars

Autonomous motor vehicles (ATMVs) are set to revolutionise the automotive industry, presenting dramatic economic and safety advantages. According to the World Health Organization (2015), worldwide road traffic deaths sit at about 1.25 million per year.

In a study by the U.S. Department of Transportation (2008), found that human error is the critical reason for 93 per cent of crashes. Thus, the prospect of removing humans from the driver seat is tantalising. Since 2015, autonomous cars have been approved for testing on public roads in several US states. In November 2017, Waymo, the autonomous vehicle division of Google's parent company — Alphabet — put a fully autonomous minivan on a public road without a safety driver (Hawkins, 2017). In order to understand this progress, ATMVs can be measured on a five-level system designed by the Society of Automotive Engineers (SAE). Level zero is a vehicle with no driving automation.

Level 1 is limited driver assistance such as cruise control.

Level 2 is partial driving automation such as adaptive cruise control and lane assist. Level 3 is a conditional automation, perhaps automated low-speed freeway driving. Levels 4 and 5 are full automation, with Level 4 being limited to a specific area and Level 5 being unlimited to where it can drive (Society of Automotive Engineers, 2014).

Currently, the leading edge of ATMVs are somewhere around Level 4. If Level 5 ATMVs can become commercially available and well-integrated into all facets of transport, from legislation to cultural acceptance, it is very possible that safety incidents on the road could essentially be eradicated (Stadler, Brenner, & Hermann, 2018).

State of autonomy in aviation

When it comes to autonomy in aircraft, the most modern of passenger airliners has a complex autopilot system that is able to control taxi, take-off, climb, cruise, descent, approach and landing.

There are no operational aircraft, civilian or military, with the capacity to make decisions while flying (Austin, 2010). Most autopilot systems mean aircraft are equivalent to Level 2 or 3 of vehicle autonomy.

While ATMVs utilise camera and sensor systems to build a picture of the road for the vehicle to process and make appropriate decisions about driving, most autopilot systems that are currently in operation utilise internal sensors and

cannot assess surroundings. For example, if an aircraft is on approach for an instrument-aided landing, it can divert from the autoland procedure because of a technical malfunction. However, if another aircraft crosses the runway, the aircraft landing has no perception of the event and the auto-land must be diverted by the pilot (Sinnett, 2017).

An ATMV is more advanced in its capacity to make a similar decision as its outward facing camera and sensor technology can detect a threat and make changes to its operation in order to avoid it (Kichun, Junsoo, Dongchul, Chulhoon, & Myoungho, 2014). Thus, as autonomy becomes more advanced and commonly implemented, the aviation industry could see similar safety and economical advantages that are being seen in ATMVs. Hopefully, the aviation industry can learn from the challenges being faced by ATMV introduction and utilise lessons learnt for a smoother introduction of the technology into aviation.

Driver becomes the driven

Just as the role of drivers is changing with the introduction of ATMV technology, making them into safety monitors of that technology, the role of pilots is likely to change with the introduction of autonomation. There are several ways that the aviation industry could make the journey from A — today — to B — a world where all aircraft are fully autonomous. Stepping stones that may allow this journey could be through augmenting crews of aircraft or changing the decision-making roles within the aircraft (Sinnett, 2017).

If crews were to be augmented, it is conceivable that cargo operations could be done by a single pilot, who would monitor the autonomous technology. In a similar way, long-haul passenger flights could be completed by far fewer pilots, cutting down both the need for pilot volume and experience. No longer would pilots be required to fly the aircraft. Instead, they would act to monitor the safe operation of the autonomous system while being a back up for active decision making.

Alert! Alert!

There are challenges in the field of human factors that need to be addressed in the transition to autonomous aviation. These must be overcome while maintaining the safety, integrity and economic stability of the industry.

The human-factors considerations of the aviation industry are comparable to those being made by teams introducing ATMVs into the market. One significant challenge lies in the differing approaches to a humanmachine interface, particularly in relation to take-over requests and alerts.

At lower levels of automation, drivers can hand over driving tasks to the ATMV but must be ready to resume at all times. At higher levels, the system must be alert and able to recognise its own limits and hand over to the driver. When this happens, the driver must be ready to take control in a timely manner. Manufacturers are working on the safest way to alert a driver in an emergency with a combination of aural and visual methods (Stadler, Brenner, & Hermann, 2018).

When designing this take-over request, the Chair of Ergonomics at the Techincal University of Munich, Germany conducted an empirical study measuring the ideal take-over alert timing (Gold, Dambroeck, Lorenz, & Bengler, 2013). They found that with alert timings of five and seven seconds, those with five seconds responded with imprecise and unsafe driver actions. However, those with seven seconds had a longer reaction time to respond to the threat. In another study, different driver distractions were analysed (Radlmayr, Gold, Lorenz, Farid, & Bengler, 2014). It was found that those visually distracted with activities such as emailing caused more collisions than those who were cognitively distracted with activities such as conversation with other passengers. These considerations will need to be applied to autonomous aviation. In the transition period, before Level-5 automation can be achieved by aircraft, pilots will still need to respond to take-over requests. Thus, the stimulation of the pilot will need to be managed by aircraft systems in order to maintain a safe take-over response.

Not just anti-virus

Since the 11 Sept 2001, the security of aviation has been of significant concern to legislators and the public. With the introduction of automated aircraft, the connectivity of the system creates vulnerabilities to cyberattacks. As the technologies advance, the vehicle-to-vehicle and vehicleto-infrastructure connectivity will complicate the cyber environment and create vulnerabilities in the system (Ben-Noon, 2018). ATMVs are currently overcoming cyber security threats with high-security systems that are regulated by the United States National Highway Traffic Safety Administration.

Join us at Avalon 2019, stand 3G7.

ALPHA
BRAVO
COLLINS

We are Collins Aerospace. With our customers we chart new journeys and reunite families. We protect nations and save lives. We fuse intelligence and partnership to tackle the toughest challenges in our industry. And every day, we imagine ways to make the skies and spaces we touch smarter, safer and more amazing than ever.

UTC Aerospace Systems and Rockwell Collins are now Collins Aerospace.

TOGETHER, WE ARE REDEFINING AEROSPACE

Collins Aerospace

collinsaerospace.com

Of particular note, reducing the components of the vehicle that communicate with the outside world reduces the cyber-attack surface of the vehicle, reducing the risk of a breach in security (Stadler, Brenner, & Hermann, 2018).

Automotive manufacturers are developing ATMVs with cyber-security as a fundamental cornerstone of their philosophy and it is a way of thinking that must be adopted by the aviation industry prior to the introduction of vulnerable automation technology

Trolley problem in the sky

Consider for a moment the hypothetical situation (Lin, 2015):

A large autonomous vehicle is going to crash and hit a minivan with five people inside. If it hits the minivan, it will kill all five passengers. However, the autonomous vehicle recognizes that it may be able to collide with a sports car in such a way that it reduces the impact on the minivan, sparing minivan's five passengers. Unfortunately, it would kill the one person in the sports car. Should the autonomous vehicle be programmed to first crash into the roadster? This problem closely resembles the trolley problem (Thomson, 1976). Thus, for it to be logically consistent, it must be accepted that the ATMV has all empirical data required to make a certain decision about the outcomes of the two choices.

While there is vast amounts of literature and understood norms around decision making under empirical uncertainty seen in De Groot's Optimal Statistical Decisions (2004), there is no agreed upon framework for moral decision making with empirical certainty. Some ethical researchers suggest that two ethical theories be applied — deontology and utilitarianism (Meyer & Beiker, 2014).

Because of these competing moral decision-making frameworks, a programmer working on the case above cannot program a vehicle based on one particular framework. The competing decision-making values mean that a programmer would need to assign moral weighting to each outcome and come to an ethical conclusion based upon their own moral assumptions and understanding of analogous ethical questioning. This process is called Problem Intertheoretic Value Comparison (PIVC) (Lockhart 2000; see also Sepielli 2006, 2009, 2013; MacAskill, 2016).

ATMV programmers are overcoming ethical competition with averaged PIVC across a team of specially recruited ethical specialists. Since there is no objective trough by which ethical decision making can be made, the autonomous car ethical debate has led to an embrace of ethical complexity where complexity is required (Millar, 2017). This way of thinking about ethical questioning needs to be transferred when autonomous aviation is developed in the near future.

Without a method of overcoming ethical questioning, programmers cannot progress autonomous technology, thus the challenges that have been overcome by ATMV development can be subverted by using PIVC in autonomous aviation programming. This will lead to faster development and implementation of autonomous aviation in comparison to ATMVs.

Who is to blame?

Having overcome most ethical, human factors and safety concerns, the major challenge faced by ATMV development today is a regulatory one. One concern of legislators is that the regulatory authorities that govern safety concerns of motor vehicles do not have the capacity to certify whether an ATMV is safe for operation (Wood, Chang, Healy, & Wood, 2012). Most current safety statistics for ATMVs come from manufacturers, but regulatory bodies have lost faith in their ability to self-regulate in the wake of the emissions scandals in recent years (Ganser & Wegener, 2017). Another legislative challenge lies in the liability of an ATMVs actions. In general, those who are at fault for harm, particularly that which could have been avoided, are punished by the law. By this principle, legal liability is necessary as it is crucial in "advancing the general welfare of society" (White & Baum, 2017). In the automotive industry, engineers and designers are likely to be most liable for harm caused by ATMVs. ATMV liability has posed significant legal challenges to the introduction of the technology and it is a challenge that autonomous aviation is likely to face. Hopefully a legal precedence has been set by the automotive industry prior to autonomous aviation being fully introduced so that the precedence can be transferred across to the realm of aviation.

What now?

With a growing pilot shortage, the aviation industry needs to make a change. In the next 10 years, there will not be enough pilots to facilitate rapidly growing industry. So, manufacturers are turning to ATMVs — the future of the automotive industry — for inspiration. While there are ethical, human factors and safety challenges that are still to be overcome by developers of ATMVs, autonomous vehicles will surely be common place in the near future. The technology and lessons learnt from the automotive industry will help aviation to follow down a similar path. Aviation is about to change. Ironically, with or without autonomous systems, the way people think about flying and flight safety will dramatically shift over the coming years. However, without autonomy, the less experienced pilots of the future are likely to degrade the safety culture that facilitates the highly safe operation of aviation that exists today.

ABOUT THE AUTHOR

Max Pickering is a second-year Trainee Officer studying a Bachelor of Science — majoring in chemistry and mathematics — at the Australian Defence Force Academy. He enlisted in the RAAF as a Pilot in 2017 and will begin pilot training in 2020.

Courtesy DFSB and Aviation Safety Spotlight

Data analytics for safer air space

Imagine being able to predict an inexperienced pilot's erratic flight path in real time.

QUT researchers have harnessed data analytics to build an algorithm that can predict the trajectory of any object faster and more accurately than existing approaches.

"If it's got a trajectory, we can predict it," said Professor Clinton Fookes, who leads QUT's Vision and Signal Processing research discipline.

"In a Defence environment, this tool could help provide greater situational awareness of both owned and enemy assets and airspace.

"It could be applied to airspace, military bases, public transport or shopping centres – anywhere you want to analyse movement."

The unique algorithm combines two machine learning techniques to analyse and predict trajectories in real-time – deep neural networks and memory networks.

"In essence, it's built to measure a trajectory in and predict a trajectory out," Professor Fookes said.

"But as it's taking in the trajectory of the target object, it's also taking in the trajectories of neighbouring objects to create an awareness of what's around the target and how those objects are moving".

"In addition, it draws on memory networks of stored historical trajectories for the same location – these attempt to emulate how the human memory works".

"Those two sets of data are then analysed by another subnetwork that determines where the target will go next."

To ensure robustness, researchers trained the algorithm using disparate big data sets, including air traffic control data from Brisbane Airport, radar and camera data from pedestrian traffic at QUT and pedestrian trajectory databases from Edinburgh and New York.

"It can crunch about 1000 predictions in a couple of seconds," said Dr Simon Denman, another project Chief Investigator.

"Using Brisbane Airport data from a 2015 severe weather event, we were able to test how well our algorithm coped in such a dynamic situation".

"Its predictions were very accurate because it factored how previous pilots behaved in similar conditions to predict what the target pilot is likely to do next".

"In civilian airspace, this algorithm could help manage drones, where we could see, potentially, an increasingly crowded and constrained airspace."

The research was funded in part by a $100,000 DST Group grant.

The team is hoping to extend the project in the future to investigate how the algorithm could be used to optimise flight paths and travel routes.

(L-R) Professor Clinton Fookes and Dr Simon Denman.

Predict the future

Master of Data Analytics

Data is the future, and you can be part of it. QUT's Master of Data Analytics will give you the skills you need to translate data into insight and intelligence.

And with world class teaching and strong industry connections it can put you at the cutting edge of a booming industry.

To learn more about entry requirements and flexible course options search QUT Master of Data Analytics.

QUT offers an expansive range of STEM postgraduate courses. If you'd like to compare all the different ways you can future proof your career, just visit **qut.edu.au/STEM**

QUT

SafetyMate

Safety Mate is a leading supplier of first class Hand and Eye Protection solutions throughout Australasia. A proud Australian company, Safety Mate offers the highest quality and most innovative products from the world's best safety manufacturers including ATG®, SW, Ringers, MecDex & Riley.

Safety Mate not only have the products, but the know-how to match, offering experienced and expert field advice. Their range of market leading brands are designed and engineered to provide optimal protection in the most extreme environments; where teams need reliable gear to help them do their job safely, precisely, and with low impact on their surrounding environment.

Safety Mate understands the unique challenges that teams in the defence force face, and with that, have put together their top 3 hand and eye protection products specifically collated for defence personnel.

THE BIG GUNS IN GLOVE & SAFETY SPECS TECHNOLOGY AND SAFETY

ATG® - MaxiFlex® Ultimate with AD-APT® cooling technology

ATG® MaxiFlex® gloves with AD-APT® cooling technology are comfortable, breathable and designed to keep hot hands cool, dry and productive even in tough conditions, offering 31% cooler hands than standard gloves.

The AD-APT® Technology is activated by the movement of hands and increased temperature within the glove, releasing a natural cooling agent that keeps hands dry and makes them cooler. The patented technology is designed to last for the duration of the glove and can be laundered.

Designed and developed as a breathable glove, MaxiFlex® has become the benchmark for precision handling in dry environments combining outstanding comfort with class leading durability. Dermatologically accredited by the Skin Health Alliance as part of ATG's HandCare™ program. They are also pre-washed prior to packaging, which guarantees them skin friendly, 'fresh out of the pack'.

As the world's best-selling glove for the past 10 years, ATG® MaxiFlex® with AD-APT® Technology are a great choice for anyone who has ever felt their hands get warm inside a glove.

SW® Megaman® with EcoTek® Biodegradability Technology

A market leader in an eco-conscious world, SW is setting a new standard in disposable gloves. Their Megaman® gloves with EcoTek® technology offer biodegradability without performance loss.

Megaman® is the world's thinnest sweat-managing level 2 abrasion resistant nitrile disposable glove, featuring SW's patented hand health technologies means that the glove goes beyond serving as a barrier from the elements, they actually protect skin and manage the things that can cause irritation, dryness and chapping in an occlusive environment.

Megaman® delivers advanced comfort and unprecedented strength in a fully textured, extended cuff glove. Featuring multi-layer construction and a DriTek™ sweat management moisture-wicking lining, Megaman® provides level 2 abrasion resistance for long wearing durability. Megaman® will keep hands drier and more comfortable whilst being kinder to the environment. Now also available in a convenient 4 pair vending pack.

A NEW ERA IN EYE PROTECTION

Riley® Stream Evo™

Exclusively distributed by Safety Mate and created by a dedicated team of safety eyewear experts with decades of experience, the launch of UK based Riley® in Australia represents a completely fresh approach to eye protection. Engineered using the latest safety eyewear technology, innovative designs and unique performance features, Riley is ideally suited to a wide range of applications.

Key developments in the Riley eyewear range include the TempFLEX™ system – flexible, Thermoplastic Elastomer (TPE) side arms and temple tips giving an exceptional feeling of comfort around the ears whilst gripping securely. The exceptional flexibility is particularly comfortable for those that wear earmuffs. A further design feature is the adjustable nose bridge which enables the wearer to create a high comfort, tailored fir for their individual face shape.

Robust polycarbonate lenses provide high performance protection from impacts, delivering optical quality in accordance with AS/NZS 1337.1:2010 whilst three specialist coating technologies have also been developed – TECTON™, TECTON™ 400 and ARIDA™.

For enhanced durability on the inner and outer surfaces of the lenses the TECTON™ coating, available as standard across the majority of the range, delivers the highest-grade anti-scratch and anti-fog treatments available. The TECTON™ 400 coating offers high level UV protection whilst moisture-repellence is provided for workers through the ARIDA™ coating.

Every model in the Riley glasses range comes with a variety of lens tint options allowing safe working in a wide array of environments and conditions.

Safety Mate is the exclusive wholesale distributor for ATG®, SW and Riley and offers industry knowledge and expert field advice to meet your hand protection needs.

To learn more about Safety Mate and its products visit www.safetymate.com.au.

SafetyMate

FOR ALL YOUR HAND AND EYE PROTECTION NEEDS

MEGAMAN®

LONGER LASTING COMFORT AND PERFORMANCE.

Your favorite disposable safety glove now in a convenient Vending pack.

EcoTek BIODEGRADABLE

DriTek NO SWEAT

EN388 2000

The world's thinnest sweat-managing level 2 abrasion resistant nitrile disposable glove.

EcoTek®

FINALLY. BIODEGRADABILITY WITHOUT PERFORMANCE LOSS.

A nitrile treatment that significantly accelerates the break-down in landfills without any performance loss. Available today in a variety of popular SW nitrile styles.

Riley

THE MARQUE OF A **NEW ERA** IN **PERFORMANCE EYEWEAR**

STREAM EVO™

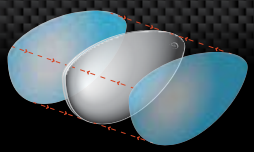
TECTON 400
K&N Anti-scratch and Anti-fog on both sides of the lens / UV400 / Moisture repellent

THE PERFECT BLEND OF STYLISH INNOVATION AND PRACTICAL COMFORT

- Approved to AS/NZS 1337.1:2010
- Lightweight, strong and durable with a wraparound lens
- Flexible ventilated side arms with a soft, adjustable, anti-slip nose bridge.
- High performance TECTON 400™ anti-scratch and anti-fog coating with UV400 protection

DUAL LENS COATING TECHNOLOGY

In the field, all parts of a lens can be subject to the harshest of conditions. That's why Riley® TECTON™ coatings are bonded and cured for the life of the product on BOTH sides of the lenses, giving you excellent resistance to scratching and fogging.



MaxiFlex® ULTIMATE™

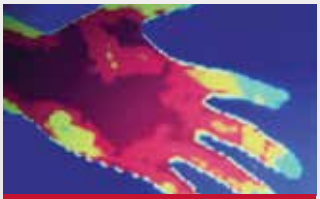
ATG Intelligent Glove Solutions

- with - ad-apt Cooling Technology

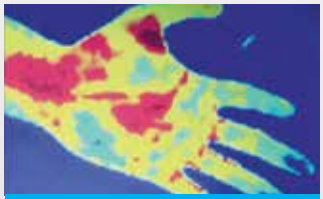
Now the iconic MaxiFlex® gets even better thanks to the inclusion of the new AD-APT® Technology from ATG®.

This Technology is activated by the movement of your hands and increased temperature within the glove, releasing a natural cooling agent that keeps your hand dry and make them cooler.

42-874



Standard Glove



MaxiFlex® – with – ad-apt

TO ARRANGE YOUR FREE SITE TRIAL, SAMPLES OR FOR MORE INFORMATION:
T: 1300 267 336 • E: info@safetymate.com.au • www.safetymate.com.au

SafetyMate

What happened to CAC Sabre A94-966?

James Elsbury
(Jim to his flying mates)

If you've watched the TV programs *Seconds to Disaster or Air Crash Investigation*, you will be familiar with the saying "Disasters don't happen, they are triggered by a chain of critical incidents". This was certainly the case when, on 15 March 1971, a Sabre from No. 5 Operational Training Unit disappeared off the coast from Seal Rocks, northeast of RAAF Williamtown. When James Elsbury ejected from Sabre A94-966 that day, he did so in the wake of a number of seemingly unrelated things that combined in a way that could not have been forecast. In the space of a few seconds he was left with few options and it could have cost him his life. This is the pilot's story.

James Elsbury sitting on top of the intake. Byron Bailey, Eddie Oosterweghel and John Ross inside the intake. Paul Neesham (dec) sitting on the nosewheel. Weaponry was borrowed from collector Peter Dickens, an FCI with 2(F)OCU.

After pilot training I was posted to RAAF Williamtown to fly fighters and commenced No. 35 Sabre Conversion Course on 11 August 1969. The conversion course flying program was dogged by periods of bad weather, resulting in cancellation of flying on many days. In short, the course lagged further and further behind the planned timeline and, to catch up, we worked longer days and several weekends. Additionally, even though the Sabre was an important step for training fighter pilots to fill the Mirage squadrons, the aircraft fleet was rapidly approaching the end of its service life and, presumably, the maintenance supply chain was not a high priority. Nevertheless, aircraft availability never seemed to be a problem for those of us flying the Sabre. After completing the conversion course, I moved to Transition Squadron, part of No. 2 (Fighter) Operational Conversion Unit, and then on 1 April 1970 to a reformed No. 5 Operational Training Unit (5OTU). We did all the usual things: air to air, air to ground, air combat tactics with the Mirage squadrons, deployments in support of Army battalions preparing for Vietnam, air defence exercises, banner towing for live-fire air-to-air gunnery, and flypasts at air shows and major events. There was never a dull moment and life was pretty good.

On 15 March 1971 my flight commander asked me to air-test A94-966 as it was due to undergo a major overhaul (the D-level service). This was not the first time I'd done an air-test and the briefing, pre-flight, taxi, take-off and transit to the designated area (about 50 nautical miles 060M from Williamtown) were standard operating procedure. The test schedule proceeded as briefed until the second stall test, which was to be performed at 10,000 feet. As the aircraft approached the stall it yawed and I progressively fed in rudder to keep it straight. Just before the point of stall, the yaw suddenly increased, then the aircraft flick-rolled the other way and in an instant, I was in a spin. No dramas, just do a standard spin recovery: check throttle at idle, centralise controls, full opposite rudder, progressively push the stick forward and wait for the recovery. Given I had entered the spin at 10,000 feet I anticipated I would have plenty of height for the recovery, so there was no real concern until I passed through 5,000 feet and there was still no sign of a recovery. Even worse, the rate of spin was increasing and the ocean now looked very close. At this moment I made the decision to eject.

Being acutely aware the Sabre ejection seat was not as 'gentle' as the Martin Baker seat in the Macchi, and a recent incident in a Macchi had resulted in back injuries to both pilots, I was determined to adopt a good posture for the ejection. With my feet in the stirrups, I pushed hard into the seat and kept my back as straight as I could while I pulled the firing handles. The seat fired and, as it accelerated up the rails, my helmet

Providing close air support for an army exercise at Shoalwater Bay training area. James Elsbury is sitting on the wing with his boots on the drop tank.

rotated forward and the visors (which were down) cut into the bridge of my nose. And, due to some very clever design of the ejection seat's armrests, I experienced severe pain in both elbows. The ejection sequence worked exactly as advertised, with seat separation and then main chute deployment occurring in the blink of an eye. I looked down and saw the spinning Sabre do one and a half turns before hitting the water. It was reassuring to see the dinghy hanging below me on the 45' lanyard. There was a strong breeze that day and the sea surface was all white caps. I quickly removed my helmet and knee pad and discarded them as I knew they would be a hindrance once I hit the water. Within seconds I was in the water.

During the short descent by parachute I mentally rehearsed the drills for releasing the main chute and it seemed so simple and easy. As soon as I hit the water, however, all that changed. A strong wind kept the main chute fully inflated and, as it dragged me backwards, it rolled me face-down and I started diving like a porpoise. Gasping for air when I broke the surface, I reached again for the Capewell releases only to find myself diving again. I cannot remember how many times this sequence repeated before I eventually managed to release the main chute, but I can remember very clearly how knackered I was.

Dinghy drills were well established as we had practised them many times, so setting up in the dinghy was done as a reflex action. Once settled, I took stock of the situation and prepared for what I hoped would be a straightforward rescue mission for SAR Flight Williamtown. The ejection sequence would have caused the aircraft to squawk an emergency radio signal during the few seconds before it hit the ocean and this transmission should have been picked up by 2CARU at Brookvale. A short while after settling in, I activated the Sabre locator beacon in my vest and watched and waited, and waited, and waited.

At first, the dinghy seemed 'roomy' and I felt relatively warm and comfortable. Not too much time had passed when I realised the dinghy was now very cosy and I felt cold. What alarmed me though, was I was sitting low in the water, much lower than a short time earlier. Could I be sinking? It didn't take long to find two parallel cuts, close together, on the right-hand side of the dinghy. Luckily, water splashing over the dinghy meant that eventually I could hear the 'fizzing' of escaping gas as well as feel it when I slid my hand along the bladder of the dinghy. My focus now changed to preventing a slow conversion from surface vessel to sub-surface vessel. No problem, I thought - the survival kit has plugs for such emergencies and I'd practised using them during survival training exercises. This was a nice idea in theory but it made me nervous: the smallest screw-in plug was much larger than the largest cut. Of course, I could enlarge the cuts so the plugs would fit, but that solution had no appeal. Instead, I chose to try to reduce the deflation rate by pushing my fingers hard against them, and at first seemed to work. The dinghy had a tube to inflate by mouth, but during the ejection my oxygen mask had been dislodged by the rotating helmet, and the flailing mask left my lips too tender to hold the mouthpiece comfortably. So initially I settled for fingers in the dyke, so to speak, although eventually and out of necessity I had to re-inflate via the mouth tube. Then it was back to watching and waiting.

CO was Peter Larard and flight commanders Dennis Robertson (?) and Dennis Stenhouse.

After a while a Macchi appeared at medium altitude and when it was reasonably close to my position I fired a flare. The smoke flare did not operate so I quickly reversed it and fired the night end. It did not work either; in fact, a purple liquid poured out of the flare as it was inverted. I tried the second flare with the same result. The Macchi did not manoeuvre in a way that suggested I'd been seen, but I would have been very hard to see anyway. Nevertheless, I was hoping the Macchi would have picked up my Sarbe signal on 243 MHz and try to call me. The Macchi eventually turned south, so it was back to watching and waiting.

Quite some time later I heard the very faint but familiar sound of an Iroquois helicopter. It was barely visible at first but when it passed overhead and flew a tear-drop pattern I was confident they were homing on my Sarbe signal. I learned later that they were flying at about 10,000 feet and I doubt they'd have made visual contact at that stage. We established voice comms and the SAR pilot told me they had enough fuel for one approach and if that was unsuccessful I would have to wait for the crash-rescue boat to come from Newcastle. Knowing how long that could take, and knowing just how difficult it can be to see a small half-submerged object from the deck of the boat, I had my fingers crossed for a successful hoist. Having explained the plan, they dropped a smoke float to mark my position because when they descended to hoisting height there was a good chance they could lose sight of me, and Sarbe may not have been accurate enough for a homing at low level in the prevailing conditions. The sight of a small object – the smoke float- falling from 10,000 feet - was reassuring at first but I soon realised its image as seen

from the dinghy was not moving in the sky as it descended. That could mean only one thing - their aim was so good it might hit me! I had already been asked to abandon the dinghy and swim clear of it when the chopper approached, but I now prepared to abandon ship sooner if necessary. Thankfully the smoke float entered the water about fifty metres north of me, disappeared for a short while and then burst back through the surface spluttering loudly and emitting dense white smoke.

The Iroquois did the long descent from 10,000 feet and, with a crewman on the cable for the very last part, I abandoned the dinghy and swam well clear of it. The crewman swam to me, dragging the sling with him and, after fitting it to me, he swam to the dinghy and punctured it to ensure that it would not become a floating hazard. We were then hoisted to safety and I was flown to Royal Newcastle Hospital. Eventually back at RAAF Williamtown and out of sick-quarters, my most urgent task was to personally express my gratitude to all those who were instrumental in my survival. And about two weeks after the

SAR chopper landing on a grassed area near Newcastle hospital. A crewman is leaning over me, stabilising my head and neck, while I was on the floor of the Iroquois UH-1B.

ejection I was back in the air in a Sabre.

All told, I was in the water for more than two hours and, as the entry in my medical record says, "… Another successful ejection…". And that is correct, but the reader may be wondering why the rescue took more than two hours when the ejection was only 48 NM from the base, which is less than one hour's flying time for an Iroquois. Answering this question also draws attention to several interesting critical incidents.

The alarm was raised by a SGT in the tarmac office. He rang 5OTU Operations to ask if they knew where I was, because I was definitely out of fuel and I had not returned to squadron lines. 5OTU Ops rang ATC and was told I was still airborne. This was relayed to the Tarmac SGT whose response is not printable. Someone (either 5 OTU Ops or the Tarmac SGT or both) rang SAR Flight to warn them of a possible rescue mission. Knowing where I'd been operating, the pilot (John Landale) was aware they would have to be pretty high to pick up a strong Sarbe signal and a conduct a homing, hence their climb to 10,000 feet. They did pick up the Sarbe signal and the rest is history, as they say. But why did ATC say that I was still airborne and in radio contact? For reasons still unknown to me, it seems my personal callsign had been temporarily loaned to another pilot. In other words, there were two aircraft airborne with the same callsign. I do not know whether the whole callsign had been loaned or just my personal identifier (Rapier was the squadron prefix, and 56 was my personal identifier). This was never made clear to me but, in any case, how could it happen?

And what about the distress signal automatically transmitted by the Sabre following ejection? I was under surveillance by 2CARU, so did they see it and what did they do? Apparently, the distress symbol did appear briefly on the screen of the controller monitoring me, but he was a trainee and did not recognise it for what it was. Because the signal quickly ceased as the Sabre descended, the distress symbol was soon erased from the screen and this went unnoticed by the trainee's supervisor.

Did the pilot of the Macchi flying close to me hear the distress signal from my Sarbe? This was never clarified for me, but a colleague shared an unconfirmed story the Delta Diamonds, a Mirage display team, were practising in the area and received a strange and annoying radio signal on their UHF radios. He said the rumour was they did not recognise the sounds as a distress signal on 243 MHz.

Remember the holes in the dinghy? They were caused during the ejection sequence. The dinghy, which is part of the survival pack under the seat cushion, contains a gas bottle for automatic inflation. The gas bottle has a metal valve-trigger assembly with sharp edges normally fitted with a protective cover. During the previous major servicing of the ejection seat, the gas bottle had been packed without a protective cover on the valve because there were none in stock. Knowing the location and nature of the two holes, investigators were able to determine compression of the seat-pack during the high acceleration of the Sabre ejection seat forced the dinghy bladder onto the sharp edges of the gas bottle valve, thus causing the punctures.

Two other aspects of this incident are noteworthy and both involve the Sabre conversion course training program. You will remember the decision to eject was made as the aircraft descended through 5,000 feet and the rate of spin was increasing markedly. Deliberate spinning of the Sabre was a prohibited manoeuvre, but it clearly is possible to get into a spin so it is important to know how to recover. The standard spin recovery works, and the increasing rate of spin indicates the Sabre is about to recover from the spin. Why didn't I know this very important fact? Apparently, the conversion course syllabus required the showing of a movie on spinning the Sabre and it reportedly showed very clearly the increased rate of spinning was an indication spin-recovery was imminent. This movie was not shown on No. 35 Conversion Course. And remember the fun I had diving like a porpoise while being dragged by the parachute? The syllabus also made provision for a session in the base swimming pool, where we could practise being dragged through the water to learn how to avoid the porpoise-diving manoeuvre. It's all to do with the way you shape your body, and it's quite counter-intuitive (it was to me, anyway). This session in the pool was not conducted on No. 35 Conversion Course.

Finally, it is not possible to write about the CAC Sabre without touching on the design of the ejection seat. The North American Aviation ejection seat fitted to the Sabre was a very basic design by today's standards, but it did achieve the objective of extracting the

pilot from the cockpit. The original design of the ejection sequence was flawed and resulted in the deaths of three RAAF pilots. After the third fatality the RAAF Sabre fleet was grounded until the design problem was rectified by RAAF engineers. But there was one design element that remained intact and was the probable cause of "bruised elbows" reported by at least two survivors. The seat's arm rests had a metal 'fence' on the outside and rear, presumably to help stabilise the pilot's arms during ejection. It is not difficult to imagine a pilot in a wildly manoeuvring aircraft not placing his arms carefully enough inside these fences, particularly when you realise the act of pulling the firing handles must cause the pilot's arms to move rearwards. And that is what I suspect was the cause of the pain and subsequent bruising of my elbows. That, however, was a very small price to pay for success.

James Elsbury in Vampire cockpit, 2FTS RAAF Pearce.

Postscript

As the medical records state, it was "... another successful ejection…", but spinal injury caused by the ejection initially went undiagnosed. The injury further deteriorated and generate symptoms, one year later, were misdiagnosed and ended my flying career. The last entry in my log book was 22 June 1972. Due to the (then) confidentiality of medical records, much of the detail of this evidence was unknown to me until decades later.

Fast forward 45 years and a consultant orthopaedic surgeon engaged by DVA, working with the benefit of modern medical imaging technologies, confirmed the ejection had damaged my cervical, thoracic and lumbar spine, and I would probably need decompression surgery within two years. Surgery was performed eight months later and the cause of symptoms that led directly to the end of my career as a pilot was immediately eliminated.

Defence Recruiting contract extended with ManpowerGroup

Minister for Defence Personnel Darren Chester has announced the signing of a two-year extension to the Recruiting Services contract with ManpowerGroup.

The ADF's relationship with ManpowerGroup began in 2003 with the formation of the Defence Force Recruiting public-private collaboration – the first of its kind in the defence industry.

ManpowerGroup will continue to manage ADF recruiting, one of the largest and most complex recruitment process outsourcing programs in the world, until late 2022.

"Recruiting results for full-time roles in the ADF are currently at historically high levels," Minister Chester said.

"Australia has a world class defence force that all Australians can be proud of and anyone who is looking for a challenge, enjoys working a part of team with access to the best training the world has to offer should consider a career in the ADF.

"This contract extension is recognition of ManpowerGroup's commitment to providing contemporary recruitment expertise in a way that enables the ADF to find and employ the right talent to serve our nation into the future."

ManpowerGroup has worked closely with Defence to evolve the nature of the Defence Force Recruiting model. *Photo CPL David Gibbs.*

Defence Force Recruiting is managed from its headquarters in Canberra and has a candidate relationship management centre and 16 recruiting centres across Australia. More than 40,000 candidates are processed annually to fill vacancies in the RAN, Army and RAAF.

Director of Recruiting Services Glenn McPhee said ManpowerGroup was proud to deliver a unique and high performing solution for the ADF.

"Over the past six years, ManpowerGroup has worked closely with Defence to evolve the nature of the Defence Force Recruiting model and helped achieve some best practice outcomes for Australians from diverse backgrounds, as well as strengthen overall fill rates," McPhee said.

"Our Defence Force Recruiting team is very proud to work alongside the men and women of the ADF and is passionate about achieving high standards for our client."

The Recruiting Services contract covers the entire recruiting process – including marketing, recruiting operations, medical and psychological assessments, and the coordination of selection boards and employment offers.

Courtesy Australian Defence Magazine

EOS Space Surveillance Systems
35 years of making space safer

It is estimated that there are around 500,000 pieces of space debris; everything from fragments of astronauts' clothing to remnants from launch vehicles currently in orbit. Travelling at 30,000km per hour, even a collision with a very small 1cm piece of space junk is enough to destroy a satellite.

Space Situational Awareness (SSA) is about knowing where everything in orbit is and what it is doing. It helps to identify active satellites, dead satellites and debris to prevent and limit the possibilities of collisions in orbit.

EOS Space Systems has developed laser tracking systems, which allows them to monitor space debris much more accurately and reliably than previously. With their ever expanding network of passive and active SSA sensors they are able to see if space objects are on a collision course, they can also intervene by ramping up the laser power.

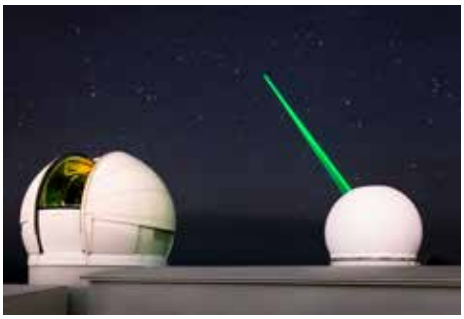
"The laser puts out a very concentrated beam of light," Professor Craig Smith, CEO EOS Space Systems, explains. "Photons of light have energy and momentum and when that light hits an object that energy is absorbed into the target actually pushes it away.

"It's a small, but measurable and predictable force and because we can track things accurately, we only need a small push to avoid a collision" Smith says.

EOS' SSA capability is not an overnight discovery. EOS has been at the forefront of satellite tracking and SSA for over 35 years. Their SSA systems are operational, interoperable with the US SSN and 100% Australian. They are the only qualified provider of SSA data and Australia's leading provider of SSA data and services. "Space information is our core business, our SSA program exemplifies this and EOS' commitment to the field has grown over our 35-year history," Smith says.

EOS has impressive Sovereign SSA capability.

- All sensors are developed and produced in Australia;
- 24/7 autonomous tracking of satellites and debris;
- An extensive space object database, updated daily;
- Fully operational from LEO to GEO and beyond;
- $200m has been invested in Australian R&D for SSA, and
- $20m has been provided for Australian STEM sector education and research.



The EOS satellite laser ranging facility at Mount Stromlo, ACT, uses pico second pulses of laser light to measure distances to Geodetic satellites to a few millimetres in space.

For more information on EOS Space Systems visit: www.eos-aus.com/space

See us at Avalon 2019
NSW Government Stand 2G6

EOS SPACE SYSTEMS

AUSTRALIAN SOVEREIGN
SPACE SITUATIONAL AWARENESS

Operational, Interoperable, 100% Australian

EOS Space Systems has been at the forefront of Space Situational Awareness for over 35 years.

We are a global provider of ground to space tracking infrastructure, the only qualified provider of SSA data and Australia's leading provider of SSA data and services.

With superior accuracy and outstanding sensitivity we find, detect, track and classify space objects.

Indigenous SSA Capability:

- All sensors developed and produced in Australia
- Resilient sensor network across Australia
- 24/7 autonomous tracking of satellites and debris
- Extensive space object database, updated daily
- Fully operational from LEO to GEO and beyond
- $200m invested in Australian R&D for SSA
- $20m provided for Australian STEM sector education and research

DISCOVER MORE:
www.eos-aus.com/space

SEE US AT:

SPACE INDUSTRY ASSOCIATION OF AUSTRALIA

Australian Space Industry Conference
25-26 February 2019

NSW Government
Stand 2G6

Avalon Airport is now international

Fly direct to Kuala Lumpur with AirAsia, and onwards to more than 130 amazing destinations with unbelievably low fares. The best bit is, we're still just a quick trip up the road with easy parking right out the front, fantastic SkyBus deals, and everything you need right by the gate.

Jump on our website to find out more and plan your adventure now!

avalonairport.com.au

Avalon Airport

Flying made easy

COME TO GEELONG FOR THE AIRSHOW

STAY FOR...

Geelong and Avalon Airport host the Australian International Airshow every two years and whilst the event itself is a breathtaking experience for participants and spectators, we've got some good reasons to extend your stay beyond the highs of the Airshow and have a some downtime in Geelong and The Bellarine.

There's much more to Geelong than a pretty waterfront but that's a good place to start. It often plays host to festivals, concerts, markets and a giant floating Christmas tree. It's also the perfect place to walk, discover public art and soak up the views.

Around the waterfront, there are loads of places to eat and drink where what you're served is as glorious as the views. Try Wah Wah Gee on Cunningham Pier for Asian fusion over the water, or Sailors Rest has a very cool rooftop bar or a beer garden overlooking the action of the precinct and the sparkling water of Corio Bay.

Just a couple of blocks south of the waterfront, Little Malop Street is part cultural precinct with library, gallery and theatre and part urban gastro-wonderland with hidden bars, outdoor dining and colourful street art. It's the perfect spot for a night out that might include a local drop at Geelong Cellar Door, a belissimo Italian meal at Caruggi, cocktails at 19th Amendment bar and live music at a nearby venue.

Just away from the city, there are some excellent places to get outdoors.

The peaks of the You Yangs Regional Park are visible from the airport but best appreciated on two wheels or two legs. There are trails to tackle on foot, including one to the highest point of Flinders Peak with 360 degree views. It's also a mountain bike hotspot with tracks suitable for all levels of ability. Serendip Sanctuary, at the foot of the You Yangs, is home to wild birds, emus and kangaroos and Brisbane Ranges National Park is known as a rich wildflower habitat.

If your idea of a good time outdoors is al fresco wining and dining, we've got that covered with loads of family-owned, boutique wineries across the region including the Moorabool Valley, often with cellar doors where you can meet winemakers, enjoy a grazing platter and a glass of their best under an umbrella overlooking the vines. Check out Clyde Park at Bannockburn for wood fired pizza and pinot perched on their hill, it'll be an afternoon well spent.

In the other direction, The Bellarine is a coastal playground. Not just a pretty place, these waters are perfect for aqua-adventures from paddling and stand-up paddleboarding on the gentle north side to surfing and boarding from Point Lonsdale towards Torquay on the south. There are jetties and boat ramps for fishing and the beaches are perfect for sandcastles and sunset strolls.

There are charming and cool villages to discover all the way around The Bellarine. Portarlington has views across aquamarine water to the skyline of Melbourne. Queenscliff has an air of grandeur with its historic buildings alongside the modern harbour where on-water adventures are launched. The ferry arrives nearby from Sorrento and there's an excellent restaurant at 360Q. A highlight in Queenscliff is a brilliant night out on The Blues Train, a progressive party on board the vintage steam trains of the Bellarine Railway.

Ocean Grove has one of the most popular surf beaches in Victoria and is central to family theme parks and attractions. Barwon Heads has three of Australia's top ranked golf courses and a main street that delivers excellent coffee and shopping.

Inland from all this vitamin sea, The Bellarine is making a name as a tasty destination, with serious deliciousness at every turn. The Bellarine Taste Trail brings together more than 50 farm gates, cellar doors, breweries, distilleries, restaurants and venues, all celebrating the produce this region is growing and crafting. From mussels grown off Portarlington, to gin distilled in Drysdale, tomatoes harvested on the road to Queenscliff and winery restaurants with stunning views of the water – bring your appetite and your camera.

www.visitgeelongbellarine.com.au

Air Force Imagery Specialists at Luke Air Force Base, Arizona

How do you take a photo when your camera is too hot to touch?

SGT Shane Gidall and SGT Chris Dickson, imagery specialists from 28SQN were faced with this problem on their recent deployment to Arizona's Luke Air Force Base.

Last August, the pair travelled to the United States for the once-in-a-generation opportunity to cover 3SQNs F-35A Joint Strike Fighter pilot and maintainer training. Working with Public Affairs Officer WGCDR September Clare, SGT Gidall and SGT Dickson had three weeks to capture as much content as possible.

RAAF and USAF F-35A pilots receive a pre-mission brief from WGCDR Darren Clare (right). *Photo SGT Christopher Dickson.*

RAAF aircraft maintainer CPL Cory Cochrane inspects the wing of an Australian F-35A on the flight line at Luke Air Force Base, Arizona, USA. *Photo SGT Christopher Dickson.*

Arizona's desert conditions threw up a number of tests that SGT Gidall and SGT Dickson met head on. At times, temperatures on the flight line hovered around 50°C.

"It was a huge challenge for us, working in that sort of heat," said SGT Gidall.

"We both had phones that shut down because of the heat. But our cameras took the punishment. At times we could only touch the rubberised parts because they were too hot to handle, and yet they cracked on. They stayed within specs and kept going."

One evening, a dust storm rolled in and put an abrupt stop to a night shoot.

"There is a series of photos of an area that looks clean and clear. Within 15 minutes it was completely covered in dust, and we are running across what seemed like the beach. Sand was just flying through the air," said SGT Gidall.

Lockheed Martin and RAAF maintenance personnel prepare to tow an Australian F-35A during a sudden dust storm at Luke Air Force Base, Arizona, USA. *Photo SGT Christopher Dickson.*

"There was so much sand, you couldn't see where you were going, and we had to still follow a truck to get off the flight line."

As experienced Air Force Imagery Specialists (AFIS), SGT Gidall and SGT Dickson are accustomed to managing variable conditions and last-minute changes. In Arizona, they were thankful for the support they received from the Australian F-35 team and the 56th Fighter Wing Public Affairs staff.

"Every day was different to what we'd planned the day before," said SGT Gidall. "But that goes with any typical public affairs task, especially with personnel changes and flight line changes.

"The RAAF and USAF personnel working in Luke were amazing people who couldn't do enough for us. Anything we asked, the response was 'give me a time and I'm there'. They were really helpful."

WGCDR September Clare said 28SQN's AFIS play a critical role in informing the public about the F-35A and what it means for Air Force.

SGT Shane Gidall and SGT Christopher Dickson have produced some iconic imagery around F-35 preparation and training before arrival into Australia last December.

"SGT Gidall and SGT Dickson produced some stunning and iconic work in the face of some pretty tough obstacles," she said. "Their results of their creativity will allow the Australian community to better understand why F-35A is a game changer.

"Compelling imagery and videos produced by our AFIS don't just illustrate Air Force's story, they are crucial in the modern communication environment as a means to connect with our audiences."

As for the most memorable shoot? SGT Gidall nominates capturing the jets during take-off.

"It took us two weeks to get a chance to get out to the runway to get a photo of the jet taking off. We organised and pushed and pushed, and finally got there," he said.

RAAF and USAF F-35A aircraft take off at Luke Air Force Base, Arizona, USA, as another USAF F-35A prepares for take off.
Photo SGT Christopher Dickson.

Expecting to be held back from the runway by 15-20 metres, the photographers were surprised when they were escorted to a location just a couple of metres from the tarmac.

"The aircraft took off right in front of us. The imagery is as large as life and completely fills the frame. It was amazing.

"It was a lot of preparation to get to that point, and in the end, it was a great series of shots. We got three aircraft taking off and we were all done."

The first F-35A Joint Strike Fighter based in Australia flew from the United States and arrived at RAAF Base Williamtown last December. It will be a prominent feature at the Australian International Air Show at Avalon.

Courtesy: www.airforce.gov.au

No 92 Wing Family Day

No 92 Wing acknowledged 50 years of RAAF Service of the P-3 Orion aircraft, through a series of celebratory events and official engagements from 30 November to 1 December 2018.

The program included an AP-3C Orion formation flyover of Adelaide, to thank the local community for their support to operations, a VIP reception, a No 92 Wing Family Day for past and present Air Force members and their families and a formal dinner.

The program of activities for the 50th Anniversary of the P-3 showcased the contribution and achievements of this important air power capability throughout its RAAF Service. It also highlighted the dedication, commitment, sacrifice and exemplary service of Air Force and civilian personnel who have supported the P-3 Orion capability; past and present.

Two 10SQN AP-3C Orions fly over during the 92 Wing Family Open Day at RAAF Base Edinburgh
Photo CPL Brenton Kwaterski.

AP-3C Orion Resolute

Operation Resolute is the Australian Defence Force contribution to the whole of Government effort to protect Australia's borders and maritime interests, known as Operation Sovereign Borders.

At any given time, up to 600 Australian Defence Force personnel at sea, in the air and on land, are working to protect Australia's boarders and maritime interests alongside the Australian Border Force and other government agencies.

Maritime Border Command - a multi-agency taskforce within the Australian Border Force – commands the Defence assets as part of the whole of government effort.

Two AP-3C aircraft shut down engines on their return to RAAF Base Edinburgh from Darwin in the final operational deployment for the AP-3C Orion aircraft in support of Operation Resolute.
Photo CPL Brenton Kwaterski.

Air Mission Training School

On 6 December 2018, Royal Australian Air Force's No 1 Flying Training School (1FTS) at RAAF Base East Sale, was renamed Air Mission Training School.

The renaming of the school is one of a number of changes in support of the implementation of Air Force's new Pilot Training System, AIR5428.

RAAF Base East Sale is in the process of becoming the new hub for ADF aviation training with the establishment of the Air Academy in January 2019.

CAF AIRMSHL Leo Davies AO CSC and WGCDR Brett Williams, Commanding Officer Air Mission Training School at RAAF Base East Sale. *Photo: SGT Rodney Welch*

Arrival of the First F-35A Joint Strike Fighters

A large number of VIPs and RAAF members were at RAAF Base Williamtown on 10 December 2018 to welcome the arrival of Australia's first two F-35A aircraft. The Minister for Defence, Christopher Pyne MP, accompanied by the Governor General of Australia, HE General Sir Peter Cosgrove AK MC (Retd), Governor of NSW, HE General David Hurley AC DSC (Retd), Minister for Defence Industry, Steven Ciobo MP, Assistant Minister for Defence, Senator David Fawcett, Shadow Minister for Defence, Richard Marles MP, CDF, Gen Angus Campbell AO DSC and CAF, AIRMSHL Marshal Gavin Davies AO CSC welcomed Australia's first two F-35A aircraft into Australia and their future operating base.

The Australian Defence Force (ADF) was proud to showcase the first two F35A Joint Strike Fighter aircraft of the RAAF Air Combat Group. RAAF pilots and maintenance personnel are embedded within United States Air Force units, partnering with Lockheed Martin in preparation for the introduction of Australia's future joint strike fighter.

The F-35A Joint Strike Fighter is the most advanced, affordable fifth generation multi-role stealth fighter to meet Australia's need to counter emerging threats well into the future. The F-35A employs stealth capabilities, advanced sensors, data fusion and an ability to share information with other aircraft, Army units and Navy ships. The Australian Government has approved the purchase of 72 F-35A aircraft to replace F/A-18A Hornets. The first F-35A aircraft will be operated by the Air Force's Number 3 Squadron, part of the Air Combat Group at RAAF Base Williamtown.

– CO 3SQN, WGCDR Darren Clare, addresses media alongside CAF AIRMSHL Leo Davies, AO, CSC during the welcome ceremony for the first two F-35 aircraft. *Photo SGT Peter Borys.*

Program Executive Director, Joint Project Office, US Navy, VADM Winter congratulates F-35A pilot, WGCDR Darren Clare, following the ferry flight to RAAF Williamtown. *Photo SGT Peter Borys.*

F-35 and F-18s on arrival into RAAF Willamtown. *Photo SGT David Gibbs.*

50 Years of P-3 Orion Service

During November to December 2018, No. 92 Wing acknowledged 50 years of RAAF Service of the P-3 Orion aircraft, through a series of celebratory events and official engagements.

The program included an AP-3C Orion formation flyover of Adelaide, to thank the local community for their support to operations, a VIP reception, a 92WG family day for past and present Air Force members and their families and a formal dinner.

The program of activities for the 50th Anniversary of the P-3 showcased the contribution and achievements of this important Air Power capability throughout its RAAF Service and importantly, brought into focus the dedication, commitment, sacrifice and exemplary service of Air Force and civilian personnel who have supported the P-3 Orion capability; past and present.

Past and present Air Force members and families associated with 92WG, wait in line to view a static display of a 10SQN AP-3C Orion during the open day at RAAF Edinburgh.
Photo CPL Brenton Kwaterski.

2OCU Gains new Stripes

A F/A-18B Classic Hornet recently returned to its base at Williamtown, New South Wales, with a brand new paint job.

The distinctive design features black on orange tiger stripes along the dorsal spine of the No.2 Operational Conversion Unit (2OCU) aircraft and on the inside of the vertical fins. The outside of the fins feature the 2OCU Tiger head on a black background.

The new paintwork celebrates the units final year of Classic Hornet operations, primarily training pilots to fly the F/A-18A, F/A-18B aircraft.

A F/A-18B Classic Hornet aircraft from 2OCU with the newly painted "Tiger" design. *Photo CPL Jesse Kane.*

RAAF Base Amberley

On 22 Dec 1938, RAAF Base Amberley was formally gazetted, declaring that an area of about 882 acres (330 hectares) had been acquired by the Commonwealth for Defence purposes at Amberley, Queensland on 12 December 1938.

Amberley RAAF Base, 1938. *Photo: RAAF*

The base was initially planned with a general purpose RAAF squadron (No 24 Squadron), initially with 300 men. The name 'Amberley' was chosen in recognition of the family who owned the land on which the base was built. RAAF Base Amberley commenced operations in June 1940.

A busy No 82 Wing tarmac at Amberley, with USAF B-50 Washington PR/bombers, C-124 Globemaster transports, RAF Victor V-bombers, a support Britannia transport and a RAAF C-130A at far right. RAAF Canberras are parked at the rear of the early wooden hangars and between the two C-124s; just visible in the hangar on the right is another Canberra. Amberley 1964.
Photo: Lance Halvorson

Amberley grew considerably over the years, when the main runway (15/33) was extended to 10,000ft and new parking areas were provided for the F-4E Phantoms and F-111s in the late 1960s early 1970s. A new hangar, the 482 Mnt SQN 'Taj Mahal' was completed in the same period, since demolished. The car ports were installed in the early 1970s, as the F-111s arrived.

A new tarmac was constructed in the mid 1970s for the Chinook helicopters. This area was extended later to cater for the C-17 transports when new hangar facilities and hard standing were built for the KC-30As. Considerable HQ, maintenance facilities and tarmac construction was carried out

AEROBOND

SOLUTIONS

INNOVATION

EXCELLENCE

SPECIALISING IN ADVANCED COMPOSITES & SHEETMETAL PRODUCTION + MAINTENANCE

T +61 8 7078 8600 AEROBOND.COM.AU

MEET US AT AVALON 2019 | STAND 3G24, HALL 3

Amberley RAAF Base, 2016. *Photo: RAAF*

for the E/F-18F and EA-18G aircraft. The areas were known, colloquially, as the 'fast jet' areas and the 'fat jet' areas. Further construction was carried out for the C-27 Spartan aircraft. The name given to this area is not yet known.

By Lance Halvorson, from original article by Office of Air Force History

New Commander for Combat Support Group

On December 2018, Air Commodore Kenneth Robinson CSC, transferred command of Combat Support Group and RAAF Base Amberley's Senior Australian Defence Force Officer to Air Commodore Veronica Tyler.

The ceremony took place at RAAF Amberley with CSG personnel and senior officers from base units in attendance.

Incoming Commander CSG and SADFO Amberley, AIRCDRE Veronica Tyler (right), officially replaced AIRCDRE Ken Robinson, CSC. *Photo CPL Jesse Kane.*

MQ-9 Reaper for the ADF

The Minister for Defence, the Hon Christopher Pyne MP, announced on 16 November 2018 the selection of Australia's first armed remotely piloted aircraft system (RPA) at RAAF Base Edinburgh, South Australia.

The General Atomics MQ-9A Reaper is an unmanned aerial vehicle capable of remotely controlled or autonomous flight operations, developed by General Atomics Aeronautical Systems. Air Staff Requirement AIr 7003 was established to procure the aircraft.

The MQ-9 is fully interoperable with Australia's allies and will provide enhanced fire power and intelligence, surveillance and reconnaissance (ISR) support to a range of missions. Minister Pyne said, " the aircraft would be used to watch and protect ADF and coalition land forces and provide support for search and rescue (SAR), humanitarian assistance and disaster relief operations".

Minister for Defence, the Hon Christopher Pyne, MP, with the General Atomics MQ-9 Reaper Scale model at RAAF Base Edinburgh. *Photo: CPL Craig Barrett*

Continuing, he said, "Remotely Piloted Aircraft allow military commanders to make more informed decisions faster while providing the opportunity to conduct strike and reconnaissance operations with no risk to aircrew safety. The aircraft will be operated under the same Laws of Armed Conflict (LOAC), international human rights law and rules of engagement (ROE) as manned aircraft.

From Minister of Defence Press Release

Unmanned Aerial Vehicles - Remotely Piloted Aircraft

Originally termed a remotely piloted vehicle (RPV), which was a technical term, the name became dated as the implication was 'old-style' radio controlled aircraft with stick and rudder controls. An early Air Force project (when the author was OpsReqts Strike/Recon appointment in the early 1980s) was designated RPVs, but the project was a 'watching brief' only. In the 1990s as the technology matured, USAF changed the name to remotely piloted aircraft (RPA), to reflect the man-in-the-loop.

Not all US services used the term RPA; the USN and the Army preferred unmanned aerial vehicle or unmanned combat aerial vehicles, (UAV and UCAV). The term unmanned

F-35

FA-18

HAWK 127

EXCLUSIVELY AT THE
AVALON AIR SHOW! STAND 2G6

IT'S TIME TO EVOLVE!

VARLEY GROUP - PROUD PARTNERS OF THE
AUSTRALIAN HAWK 127, FA-18 AND
F-35 LIGHTNING PROGRAMS

VARLEY
AUSTRALIAN MADE

VARLEY
EXCELLENCE SINCE 1886

CTSi

WWW.VARLEYGROUP.COM

A scale model of the MQ-9 at RAAF Base Edinburgh
Photo: CPL Craig Barrett

air system (UAS) is another term that is now used. To the uninitiated, the term drone is in wide use; a misnomer coined by Hollywood and the media, but popular with many 'drone' manufacturers. However, the term is in wide use in the US military to identify small UAVs/UCAVs that do appear to be 'drones', ie, without a pilot in the loop.

Whatever the military term, unmanned technologies in the larger 'aircraft' offer advantages:

- Range and endurance (for the larger UAVs and RPAs) are well in excess what manned systems/aircraft can provide.
- Risk is reduced when flying in a high threat environment.
- Reduced costs in developing the systems and in crew operations and training.

In addition to the advantages stated, missions that require around-the-clock monitoring are more easily handled due to their long endurance - up to 24 hours. Game changers in the future include stealth capabilities, nano-technology developments, 'secure' GPS usage, USN carrier operations and fission/fusion weapons. High amplitude magnetic pulse systems and directed energy weapons, non-kinetic technologies, have been developed or are in advanced stages of development.

RPA Training

The Operational stream in the RAAF pilot training scheme identifies the particular area that RAAF Officer Aviation personnel specialise in once they have completed their Initial Employment Training (IET):

- Fast Jet Pilot (FJP) - FJPs fly F/A-18 Hornet, E/A-18F, EA-18G and F-35 Joint Strike Fighter (JSF) aircraft.
- Remote Pilot (REP) - REPs pilots control Remotely Piloted Aircraft (RPA).

Whether the Remote Pilot remains in the specialist category is unknown; with such a small Air Force, flexibility may require REPs to fly other aircraft types, although the training category above seems to preclude that, without further training. One would hope flexibility remains.

USAF experience shows that Predator and Reaper pilots have been departing the USAF in growing numbers rather than continue to work 12 hours a day, six days a week, LTGEN Otto, USAF Deputy Chief of Staff ISR said in 2017. Those conditions resulted from wartime demands for a rapid expansion of the number of daily Combat Air Patrols (CAPs) by Predators and Reapers to meet what Otto has called an "insatiable demand" for ISR even as the Air Force and its budget have shrunk.[i]

RPA Effectiveness

RPAs have proven to be valuable vehicles in USAF operations to combat terrorism; the Predator and the Reaper have revolutionised warfare. Since 2011, RPAs have flown 100s of thousands of missions in RPAs, primarily the MQ-1. Despite the high flying rate, losses have been low.[ii] RAAF experiences are expected to be similar.

The Predator and the Reaper are RPAs, with a human in the link at all times. Nothing occurs without a command from a human in control. A weapon is only released with 'release consent' from the command pilot, who complies with the ROE.

Lance Halvorson

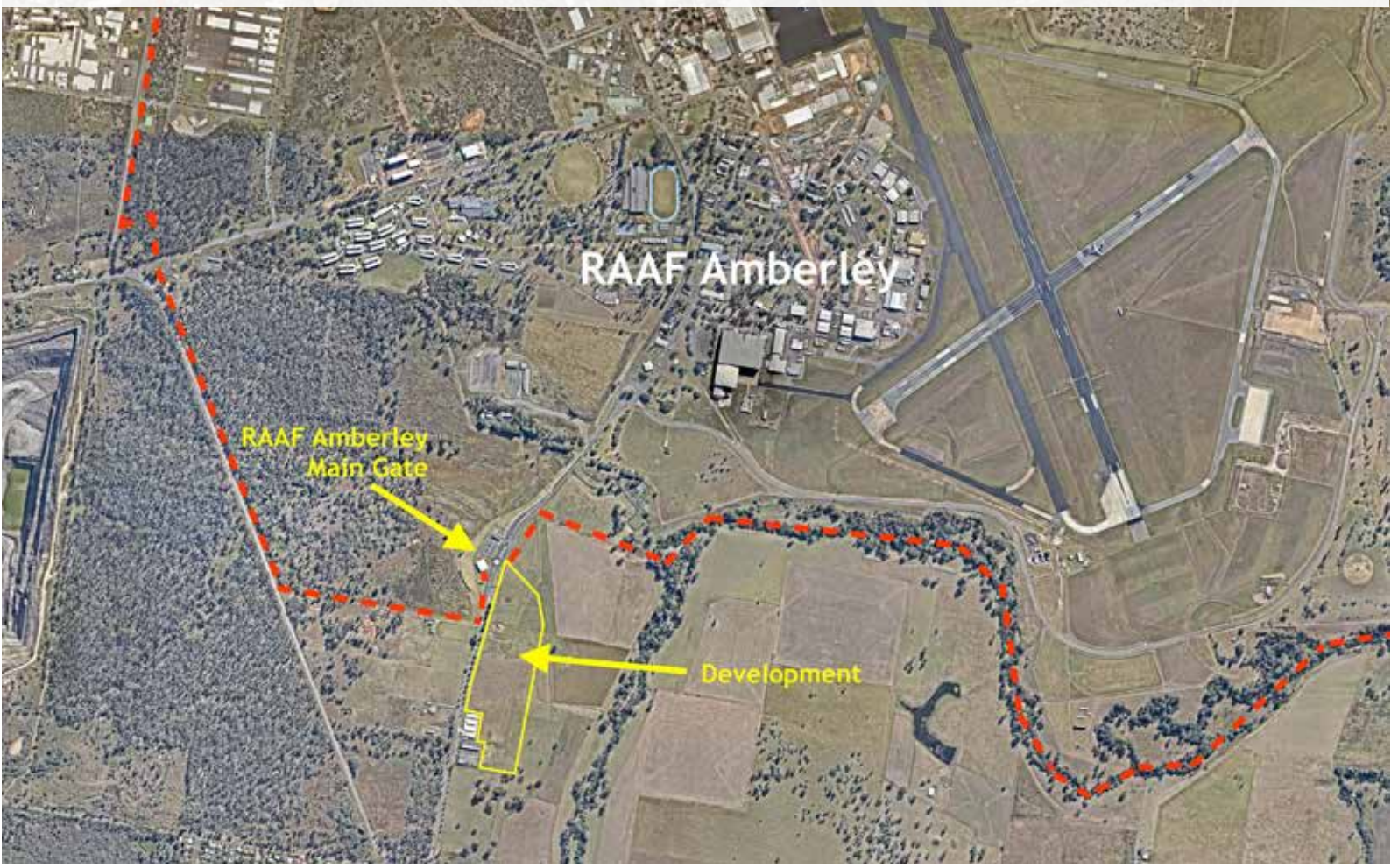
---

i Breaking Defense
ii *Hunter Killer*. T. Mark McCurley. Allen and Unwin 2015

NEED TO BE CLOSE TO RAAF AMBERLEY?

LAND SALE

51-89 SOUTHERN AMBERLEY ROAD, AMBERLEY



Total Land Area: 80,080m2 **Tenure:** Freehold **Local Authority:** Ipswich City Council

Breakup	Area (approx.)	Status	Notes	Asking Price (ex GST)
Lot 1:	15,760m2	Under Contract	Under Contract	Under Contract
Lot 2:	65,120m2	Available	Sub-division potential (2-3 lots)	From $125/m2

Zoning: Amberley Air Base and Aviation Zone (Sub Area AA2 – Business Park Investigation Area)

Location: The property is situated within the suburb of Amberley, approximately 40 radial kilometres south-west of Brisbane's Central Business District (CBD), eight radial kilometres south-west of Ipswich CBD and adjoins the Amberley Royal Australian Airforce (RAAF) Air-base.

Approvals: Current DA approval for General Industry (defence related industries) and Service Trades Use (Warehousing), onsite sewerage treatment + finished earthworks levels above 1% AEP (flood).

Key Attributes: Town Water, Power, Telecommunications (NBN ready), access to key transport corridors (Logan, Cunningham, Warrego, Ipswich, Pacific & Gateway) + capability for B double access if required.

SUNNYSIDE DEVELOPMENTS

For more information contact Luke Bailey
0419 797 628 | luke.bailey@ssdev.com.au

Ensuring personnel and asset protection with fast arc quenching

Arc faults have been a hot topic in the electrical industry for more than a decade with much of the discussion centred on aging oil-based medium voltage switchgear and the increased risk that they pose.

NHP Medium Voltage Switchgear cubicles are designed and type tested to mitigate the consequences of internal arcs and therefore protect both the operator and the installation. Through a strategic pressure release system, the internal arc is restricted to the compartment where it originated and it does not spread towards the operator or to other compartments. The cubicles are specifically designed to minimise the consequences of an internal arc and forming a key component of this, is the option of a built-in arc quenching system 'Arc Killer' which can extinguish an arc in less than 50ms. Exclusive to NHP switchgear, Arc Killer is a unique worldwide patented system developed in Europe for the DF2 series air insulated modular type switchgear. It provides an efficient and also simple arc fault protection not only for switchgear in substations but also in the ring network without the need to send a remote trip signal to upstream CB, unlike typical systems based on arc flash relay.

Arc Killer from NHP protects medium voltage switchgear from internal arc damage and allows fast restoration of switchgear avoiding long downtime and huge financial loss. It also ensures the highest level of operator safety in the unlikely event of an internal arc fault, going beyond requirements of the Australian standards.

Arc Killer takes arc quenching to a new level providing an improved security that protects valuable switchgear and eliminates blast damage to switchrooms caused by the expanding gas high pressures and temperature generated by arc faults. Not only are the operator and the environment are shielded from harm, but the super-swift arc extinguishing system allows cubicles to be back in operation very quickly in case of an internal fault. Moreover, The Arc Killer fast operation allows full containment of the arc fault within switchgear enclosure without need for external ducting or venting. Consequently the substation design is simplified and the arc fault safety rating of switchgear is always maintained irrespective of where and how it is installed.

The Arc Killer technology and the benefits that it brings to a site highlights the advantage of partnering with a medium voltage supplier such as NHP. In additional to the market leading range of switchgear complete with Arc Killer technology, the extended NHP medium voltage range can be called upon to help users leverage information to improve their operations, network efficiency and ultimate reliability. From the successful monitoring, evaluation and intelligent control of a distribution substation as well as substation control systems architecture, NHP is your trusted partner.

Looking beyond the F-35: Penetrating Counter Air

The US is looking beyond the fifth-generation F-35 with plans already underway for the sixth-generation 'Penetrating Counter Air' concept, which will be operated by the US Air Force and Navy and, potentially, allies like Australia.

With the growing success of Russian and Chinese fifth-generation fighter aircraft like the Su-57, J-20 and JF-31, the US has kicked off a suite of development programs to replace the ageing F-15 Eagle and fifth-generation F-22 Raptor air frames.

This Penetrating Counter Air (PCA) concept will seek to complement the US Air Force F-35 and the US Navy's F/A-18E/F Super Hornet fleets, serving niche roles including air dominance, air supremacy, fleet air defence, air interdiction and precision strike.

Stemming from the the US Air Force 'Air Superiority 2030' study in 2016, which proposed that the US Air Force would require a 'Next Generation Tactical Aircraft' (Next Gen TACAIR) air superiority/dominance fight jet to enter service in the 2030s.

"The future system will have to counter adversaries equipped with next generation advanced electronic attack, sophisticated integrated air defence systems (IADS), passive detection, integrated self-protection, directed energy weapons, and cyber attack capabilities. It must be able to operate in the anti-access/area-denial (A2AD) environment that will exist in the 2030-2050 time frame," the US Air Force solicitation states.

The US Navy is also looking to capitalise on the program to develop a next-generation fighter aircraft, building on the initial Navy plan to replace the Super Hornet fleet as announced in 2012, particularly when it comes to service interoperability and sensor fusion to enable enhanced target designation, intelligence, surveillance and reconnaissance data communication with their Air Force counterparts.

However, the Navy requirements do differ from the requirements of the Air Force, particularly with a focus on increased range and speed over the existing Super Hornet platforms to serve in A2AD environments, especially in the western Pacific to improve the survivability of the US Navy's aircraft carriers, which are increasingly becoming targets for advanced Chinese anti-ship cruise and ballistic missile systems.

The US is looking beyond the fifth-generation F-35 with plans already underway for the sixth-generation 'Penetrating Counter Air' concept. *Photo SGT Christopher Dickson.*

These capability differences mean that the Pentagon, Air Force and Navy would avoid the joint development program model established by the F-35 Joint Strike Fighter.

Despite this, there is a focus on ensuring that both branches would procure common systems and subsystems to be integrated with the next-generation fighter aircraft.

This early stage of solicitation has seen a number of aerospace companies, including Lockheed Martin, Boeing and Northrop Grumman, present preliminary designs for consideration, with features including:

- Low observable, flying wing shaped air frames;
- Both twin and single engine variants;
- High precision, high capability directed energy weapons;
- Large, traditional weapons (air-to-air, air-to-ground) payloads;
- Command and control capabilities to support 'swarm' drone operations;
- Advanced sensor suites, combining traditional ISR and sensor fusion;
- Optionally manned/unmanned pilot configurations;
- Electronic warfare capabilities; and
- The potential for artificial intelligence to support pilot decision making.

The US is not the only nation beginning development of such platforms, as both the UK and a joint French-German team have begun developing their own sixth-generation air superiority combat fighters.

BAE Systems announced the Tempest in July 2018. The Tempest program will incorporate industrial cooperation and collaboration between some of the largest and most advanced aerospace and defence companies in the world to deliver an unrivalled air combat capability for the RAF, including:

- **BAE Systems** – advanced combat air systems and integration;
- **Rolls-Royce** – advanced power and propulsion systems;
- **Leonardo** – advanced sensors, electronics and avionics; and
- **MBDA** – advanced weapons systems.

It is anticipated that the UK, in conjunction with its industry partners, will deliver the Tempest next-generation air combat capability by 2035 to operate in conjunction with the RAF F-35s and the later tranche of Eurofighter Typhoons, which they will eventually replace.

Meanwhile, the joint French-German Airbus Defence Future Combat Air System (FCAS) will see a twin-engine, twin tail, dual pilot aircraft to be operational between 2030 and 2040.

The European design will also include a focus on incorporating a command and control for 'swarm' drone operations and will, like the UK Tempest, support the Eurofighter Typhoons in operation with the German Air Force, Rafale in operation with the French Air Force and replacing the Panavia Tornados in the strike role.

For Australia, the future operating environment to the nation's immediate north will necessitate investment in a highly capable, long-range, air dominance fighter aircraft to compliment the F-35 Joint Strike Fighters and replacing the

ageing F/A-18 E/F Super Hornets, by the mid 2030s.

Australia's industrial capability and value adding capacity as developed throughout the F-35 program places Australia in an ideal position to integrate and participate in the development of any number of sixth-generation fighter designs to ensure continued air combat capability and interoperability with key regional and global allies in increasingly contested environments, beyond 2030.

Courtesy Defence Connect

US successfully demonstrates hypersonic rounds for 5" Navy guns

The US Navy has successfully fired 20 hyper-velocity projectiles (HVP) from the standard Mk 45 five-inch naval gun as part of a test conducted during the 2018 Rim of the Pacific (RIMPAC) exercises, in the latest round of the arms-race between the US and competitors in Russia and China.

The HVP is a next-generation, common, low drag, guided projectile capable of executing multiple missions for a number of maritime and land-based gun systems, operated by both the US and key NATO and global allies like Australia, including the Navy Mk 45 series five-inch; Navy, 155 mm artillery systems; and future electromagnetic (EM) railguns.

Designed as a 'domain common' munition, the HVP is capable of performing a number of missions, dictated by the gun system and platform, which range from naval surface fire (NSF) to cruise and ballistic missile defence, anti-surface warfare and other future Naval mission areas.

The EM rail gun, currently under development, uses magnetic force to propel projectiles to hypersonic velocities. This differs from the traditional Mk 45 naval gun, which uses explosive-powder charges.

'Hypersonic' vehicles and projectiles are defined as anything travelling faster than five times the speed of sound, the 12-kilogram (28-pound) HVP reportedly has a range of 80 kilometres at a speed of Mach 7.3.

HVPs leverage a low-drag, aerodynamic design enabling high-velocity, manoeuvrability and a decreased time-to-target. The HVP travels at about Mach 3 with a range of 65 kilometres, three times the range of traditional naval rounds. These attributes, coupled with accurate guidance electronics, provide low-cost mission effectiveness against current threats and the ability to adapt to air and surface threats of the future.

The compact design of the HVP relieves the need for a rocket motor to extend gun range, firing smaller, more accurate rounds decreases the likelihood for collateral damage and provides for deeper magazines and improved shipboard safety.

Currently, both the US and allies like Australia use a combination of missile systems including the Evolved Sea Sparrow Missile (ESSM), Rolling Airframe Missile (RAM) and the Standard Missile 2 (SM-2) and Standard Missile 3 (SM-3) systems to provide comprehensive air and missile defence capabilities.

The HVP serves to fill the niche capability currently provided by expensive missile systems at a significantly reduced cost. Systems like the ESSM and SM-2 and SM-3 ranging in cost from about US$500,000 and US$2 million, for the ballistic missile defence specialised variants of the SM-3 systems.

Currently, both the US and allies like Australia use a combination of missile systems including the Evolved Sea Sparrow Missile

In contrast, the HVP system is projected to cost about $100,000 per unit, dramatically reducing the procurement and logistics supply chains needed to support sustained, high-intensity conflict.

The announcement of the successful US test follows recent technology announcements and demonstrations made by both Russia and China. In particular the air-deployable, Russian Kinzhal missile, reportedly capable of velocities as fast as 12,500km/h, the currently in service Kalibr cruise missile and China's recently unveiled EM rail gun have all spurred a new approach as a result of development delays for the US rail gun program.

The Mk 45 Mod 4 provides NSFS range of more than 20 nautical miles (36 kilometres) with the Navy's new five-inch Cargo projectile and an improved propelling charge. Starting with DDG 81, Mk 45 Mod 4 is being forward-fit to US Navy's Arleigh Burke Class destroyers. Other Mod 4 applications include installations for the fleets of Australia (Hobart Class), South Korea (Seejong the Great and Chungmugong Yi Sun-sin Class), Japan (Maya, Atago, Kongo, Asahi and Akizuki Class) and Denmark (Absalon Class).

Courtesy Defence Connect

What will a military vehicle look like in five years?

Warfare is changing, and governments are being forced to adapt their military vehicle fleets to keep up. The next five years will see the rapid adoption and adaptation of intelligent technology to disruptive military applications.

Rise of the ultra-light military vehicle

Some military vehicle manufacturers are receiving orders worth more than $195 million from the US Army. Take the Joint Light Tactical Vehicle (JLTV) program as an example. These vehicles will displace one-third of the Marine Corps high mobility multi-purpose wheeled vehicles (HMMWV) by 2019.

The impressive payload, range and speed of light military vehicles explains why they're generating so much interest. Some of these large vehicle orders are set to have planned operating capability by the end of 2020.

So how is this all possible? Well, engineers are accounting for every milligram of weight during the design

The impressive payload, miles range and speed of light military vehicles explains why they're generating so much interest

and development process — without compromising on performance and survivability. This weight consideration includes the vehicle's steering system, many of which have been crucially made up of light weight and durable parts to ensure the success of the overall design.

Another benefit of some of these light weight military vehicles is adjustable height. Compared with the vehicle's operational height, the fording height can be up to 60 inches higher, making them exceptionally amphibious and able to clear water obstacles. The steering system further complements these efforts, with parts designed for deep water wading and preventing water ingress.

Autonomous supply convoys

According to figures released from the Pentagon, in just 12 months, 60 per cent of US combat causalities were related to convoy resupply. Military leaders have now pledged to make vehicle autonomy a top modernisation priority in a bid to address this issue.

The US Army has recently awarded a $49.7 million contract to Robotic Research LLC. The investment will fund autonomous kit testing on large supply vehicles, with the objective of safely sending unmanned resupply convoys into warzones. The US Army aims to have its first Robotic Combat Vehicles(RCV) technology demonstrator ready by 2021, but how will it meet this deadline?

According to a release from Robotic Research, the three-year contract is part of the Expedient Leader Follower program, designed to extend the scope of the *Autonomous Ground Resupply program.*

The *Next Generation Combat Vehicle* program will be designed to train soldiers to manage both manned and unmanned combat vehicles, giving commanders the option to send robotic vehicles against the enemy before committing manned combat forces.

If all goes to plan, the early RCVs will help program officials develop future designs of autonomous combat vehicles. This will prove revolutionary and demonstrate the potential of taking humans out of the equation in supply delivery. Will the US Army meet its 2021 goals? Watch this space.

Steering capabilities that change the game

The modernisation of military fleets is crucial, but even the most high-tech vehicles must be designed to withstand the tough terrains of military service — including the steering system.

Unlike off-the-shelf products, vehicle manufacturers are opting for bespoke steering systems, where parts are tested against dynamic loads and extreme environmental fluctuation. This means adverse weather conditions, such as sandstorms, black ice and dust, which challenges even the best military vehicles in the industry, are accounted for in the design process.

Steering components for military vehicles must be designed to take on extreme debris, moisture and temperature variation, without resulting in water ingress or high torque steering. These challenges can wreak havoc on steering systems that are not designed for the correct application.

As governments in the US, UK, and Australia make important decisions to leverage technology for military vehicles, what will always remain at the forefront of this process is designing for survivability.

New technology could improve the survival rates of personnel — whether it is a result of increased agility, autonomous resupply or high-performance steering, and it's this notion that makes the implementation of such technology incredibly important.

Courtesy Australian Defence Magazine

BUPA Chosen for ADF Health Services

Minister for Defence Christopher Pyne has announced that Bupa Health Services has been awarded the ADF Health Services Contract for the provision of health services to Defence members, effective 1 July.

These arrangements support the delivery of a range of primary and specialist health services at both on-base health facilities and through a network of off-base service providers.

"Delivering health services to over 80,000 ADF members and reservists is a complex and important undertaking and after a rigorous procurement process Bupa demonstrated it is able to deliver Defence's requirements," Minister Pyne said. "Under the new contract, ADF members will continue to receive the full scope of health services they currently receive.

"Defence remains committed to maintaining continuity of care in delivering high quality health services for ADF members".

The new contract moves health services from an existing arrangement with Medibank, which signed a $1.3 billion contract with Defence in June 2012 to deliver a comprehensive suite of five health services to ADF personnel.

In a statement, Defence thanked Medibank Health Solutions "for the service it has provided to ADF members under the existing contract."

Courtesy Australian Defence Magazine

Delivering health services to over 80,000 ADF members and reservists is a complex and important undertaking. *Photo CPL Jesse Kane.*

INFORMATION SUPERIORITY

360’ SITUATIONAL AWARENESS IN COMPLEX OPERATING ENVIRONMENTS

Ocean Software is a 100% Australian owned SME, with expertise in complex operations, aviation systems, and health knowledge management.

- SOFTWARE ENGINEERING
- REPORTING & DATA ANALYSIS
- E-HEALTH
- AVIATION OPERATIONS
- IT SERVICES & PROJECT MNGMT
- LMS, LCMS & TRAINING SERVICES
- COMMAND & CONTROL
- SYSTEM INTEGRATION
- PROCESS OPTIMISATION
- CURRENCY & QUALIFICATIONS

ocean.com.au

AEROSPACE NDI Pty Ltd

Aerospace NDI prides itself on being one of the premier aviation support companies within Australia for the past 25 years. Since our inception the company has grown to be a stand-alone "One Stop Shop" for all types of aircraft components for large civil, military and general aviation aircraft.

- NON-DESTRUCTIVE TESTING - MT/PT/RT/UT/ET, LEVEL 3 SUPPORT, PROCEDURES AND REFERENCE STANDARD MANUFACTURE
- UNDERCARRIAGE MAINTENANCE FOR LARGE AND SMALL AIRCRAFT
- LARGE AIRCRAFT THRUST REVERSERS
- FLIGHT CONTROLS
- WHEELS AND BRAKES
- HYDRAULIC AND PNEUMATIC COMPONENTS
- MACHINING AND MANUFACTURING OF AIRCRAFT PARTS AND GROUND SUPPORT EQUIPMENT
- ELECTROPLATING, PAINTING AND WELDING
- PART 21J ENGINEERING SUPPORT
- CASA PART 145 CERTIFICATE HOLDER 1-RT6UE

P: (08) 6278 3300 **F: (08) 6278 3399** **W: aerospacendi.com** **E: ndi@aerospacendi.com**

CAMP IN THE DESERT UNDER THE STARS FAMILY FRIENDLY

IT'S LIVE! in Queensland

BIRDSVILLE BIG RED BASH

World's Most Remote Music Festival

MIDNIGHT OIL

THE LIVING END * KASEY CHAMBERS

RICHARD CLAPTON * 1927 * BUSBY MAROU * BJORN AGAIN

WENDY MATTHEWS * MARK GABLE (THE CHOIRBOYS)

STEVE KILBEY (THE CHURCH) * EUROGLIDERS

CHOCOLATE STARFISH * NEIL MURRAY

STEVE BALBI (NOISEWORKS) * THE CHANTOOZIES

MARK WILLIAMS (DRAGON) * DALE RYDER (EX BOOM CRASH OPERA)

GET A GROUP TOGETHER for the ULTIMATE OUTBACK ADVENTURE DESERT DREAMING

DOG FRIENDLY EVENT

16-18 JULY 2019 SIMPSON DESERT QUEENSLAND

BIGREDBASH.COM.AU

FESTIVALS & EVENTS

WINNER 2018 OUTBACK QUEENSLAND TOURISM ASSOCIATION

6 Wing Remembers the Fallen Centenary of the Armistice 2018

For Remembrance Day last year, Air Force Cadets from 6WG again honoured the sacrifice of the fallen by participating in commemorative activities throughout South Australia.

This was a particularly special series of events, marking the centenary of the Armistice in 1918 which effectively brought about the end of hostilities in WW1 – on the 11th hour of the 11th day of the 11th month.

In the lead up to Remembrance Day, two Cadets gave the 'Service Voices' program some insight into why they consider it important to participate in these ceremonies.

Cadet Sergeant Tegan Thomas of 622 (Rural City of Murray Bridge) SQN was on duty last year for Australia Day, the Macclesfield RSL ANZAC Twilight Service and ANZAC Day service, Mount Pleasant.

In her interview, CSGT Thomas said on Remembrance Day she planned to honour the service of her great-grandfather, Bomber Command veteran FLTLT Cyril Kroemer, DFC, who was captain of a Lancaster with 625SQN RAF.

Over the last two years, Cadet Corporal Erika Gardner from 602SQN (Adelaide Hills) has participated in a Remembrance Day activity at Littlehampton, ANZAC Day activities in Echunga and Canberra, and activities in support of Legacy. In September, she was Honour Guard Commander for the RAAF Association (SA) Battle of Britain Memorial Service in Adelaide.

CCPL Gardner said she was planning to honour the service of her grandfather Kevin Gardner of the Royal Australian Navy Reserve, who was mobilised for active duty in 1944-46 with HMAS *Gawler* in the Admiralty Islands and then served aboard HMAS *Warramunga.*

School based activities took place during November. Cadets from 602SQN joined with soldiers from 16 Air Land Defence Regiment, Woodside Barracks, to support a commemorative service at Oakbank Area School.

Modbury High School's annual commemoration was supported by a Catafalque Party from 604SQN (Hampstead Barracks), commanded by Cadet Flight Sergeant Tomasz Kocimski.

Cadets from 608 (Town of Gawler) SQN mounted a Catafalque Party at Nuriootpa High School, Barossa Valley. Cadets from 609 (Woodside Barracks) SQN also supported the Plympton/Glenelg RSL Remembrance Day Dinner.

On Remembrance Day, 6WG Cadets from a variety of metropolitan squadrons represented the AAFC in a tri-service ceremony at Centennial Park Cross of Remembrance.

To the north of the city, 613SQN (RAAF Edinburgh) provided a Guard of Honour for the 100 Year Armistice Service at the Salisbury War Memorial, and 608SQN provided a Catafalque Party and Honour Guard at Pioneer Park in Gawler – as they have done for 24 consecutive years.

In the Adelaide Hills, 602SQN supported the Mt Barker RSL Armistice Day Memorial Service, and set up an information stand at the 'Centenary of Armistice Street Function' hosted by the Mount Barker Council and RSL Mt Barker Sub Branch.

To the south of Adelaide, Cadets from 617SQN (Unley High School) provided a Catafalque Party in support of the Unley RSL service in the Unley Soldiers' Memorial Garden, and 609 SQN cadets mounted an Honour Guard for a community event in Hallett Cove.

Cadets from 605 ('City of Onkaparinga') SQN took part in a service at the District War Memorial in Yankalilla, while others supported the Morphett Vale RSL Remembrance Day Service at the Eternal Flame in Morphett Vale.

Some cadets from 619 ('City of Onkaparinga') SQN supported the Remembrance Day Service run by the Port Noarlunga/Christies Beach RSL on the esplanade at Port Noarlunga. Others provided Catafalque Party and flag raising support to the McLaren Vale RSL Remembrance Day service at the McLaren Vale War Memorial Gardens.

Meanwhile, in Mount Gambier 612 Squadron joined the wreath laying service at the Vansittart Gardens Memorial. The wreath layers were CSGT Breydon Verryt-Reid and CCPL Brian Telford.

On Remembrance Day, Air Force Cadets understand the importance of honouring the sacrifices our forebears made during war. They also enjoy these opportunities to spend time with our veterans and reflect on their wartime experiences, their cadet service helping to bridge the generations.

Lest we Forget

(left) CSGT Tegan Thomas (622SQN), and CCPL Erika Gardner (602SQN) in the Radio Adelaide studio with Ms Helen Meyer, Executive Producer of 'Service Voices – service to country, service to community'.

612 SQN cadets, Vansittart Gardens Cross of Sacrifice, Mt Gambier, Remembrance Day. Rear rank, l-r: CSGT Breydon Verryt-Reid, CDT Angus Aitken, CCPLs Brian Telford, Megan Laube, CDT Daisy Yates, FLGOFF(AAFC) Geoffrey Yates. Front rank: Cadets Logan Burr, Tobias Flett.

CSGT Lucy Tassell, in Gawler with 608SQN Catafalque Party.
Photo: FLGOFF (AAFC) Paul Rosenzweig

608SQN Honour Guard at the 2018 Remembrance Day memorial service, Gawler.
Photo: FLGOFF (AAFC) Paul Rosenzweig

BOMBER COMMAND VETERAN

visits Squadron Banner Blessing Parade

At Woodside Barracks during last October, 602SQN (Adelaide Hills) hosted the Combined Annual Parade of 602 and 622 SQNs. This parade included a special ceremony for the Banner Blessing and Presentation of the new Banner of 622 (Rural City of Murray Bridge) SQN.

Based in Murray Bridge, 622SQN provides learning, leadership and development opportunities for youth from the Murraylands, mid-Murray, Mallee, Bremer and Strathalbyn regions.

Once the parade had marched on, the cased 622SQN Banner was marched on by CWOFF Walter Harris, and placed in position on a drum pile, in preparation for blessing and presentation. CFSGT Tyler Willis was Banner WOFF.

The drum pile is a significant and traditional part of a banner blessing, representing the way in which an impromptu 'altar' was made during wartime to conduct religious ceremonies.

In late 2017, 611SQN was granted Freedom of Entry to Murray Bridge. A Banner was commissioned bearing this new title, based on the existing approved emblem. The insignia of 622SQN – a long-eared owl carrying in its claws a flash of lightning – is derived from the heraldry of 622SQN (Heavy Bomber), a wartime unit of RAF Bomber Command.

CO 622 SQN, SQNLDR (AAFC) Lawrence Ng said, "The Banner is a solemn symbol of loyalty, service and allegiance to the Sovereign and nation. This blessing ceremony encourages those who serve under the Banner to follow, protect and guard its honour with pride".

Announced as the 622SQN 2018 Cadet of the Year was CSGT Tegan Thomas. CSGT Thomas received a perpetual shield trophy kindly donated by the RSL Mannum Sub Branch. She has been a member of the AAFC for four years, and currently serves as the Assistant Training Officer and Assistant Administration Officer of 622SQN.

In a significant connection, CSGT Thomas is the great-grand-daughter of Bomber Command veteran FLTLT Cyril Kroemer DFC, from Wilmington, SA. Cyril Kroemer served in the RAAF from May 1941- October 1945.

He flew his first operational missions with 12SQN (as a FSGT pilot) based at RAF Wickenby. From October 1943, he was captain of a Lancaster with 625SQN RAF (Bomber Command), conducting mostly night raids over Europe from RAF Kelstern in Lincolnshire, UK. Cyril Kroemer was also involved in Operation 'Manna' and Operation 'Exodus' missions, and was awarded the DFC for bravery.

In a third Bomber Command connection, a special guest at Woodside Barracks was 94 year old FLGOFF (Retd) Ern Milde Ld'H (Fr) from Mitcham Branch , RAAF Association (SA Division).

Born in Kilkenny, SA in March 1924, FLGOFF Milde was pilot of Avro Lancaster heavy bombers during WWII. He enlisted in Adelaide, June 1942, and served until December 1945, earning the France and Germany Star for his operational flights over Europe with 460SQN (Bomber Command). He was one of a select few who were decorated in the name of the President of the French Republic for service which contributed to the Liberation of France – as a Chevalier (5th Class or 'Knight') in the French National Order of the *Légion d'Honneur* – the Legion of Honour.

Ern was accompanied by Mitcham Branch President Dr Robert Black, AM, RFD (GPCAPT Retd), the incoming President of the RAAF Association (SA Division).

FLGOFF (Retd) Ern Milde Ld'H with award winners CSGT Tegan Thomas, 622SQN 2018 Cadet of the Year, CFSGT Blake Harding, 602SQN Senior Cadet of the Year.
Photo: FLGOFF (AAFC) Paul Rosenzweig

Smith Fund Grant Awarded to South Australia Air League

The AAL received a major boost last December when The Sir Ross and Sir Keith Smith Fund was once again awarded a grant to assist them further develop an interest in aviation in its cadets in SA.

The grant was announced at a presentation evening in Adelaide in December 2018. On the evening, SA Wing was also formally granted Group status, and Governor of South Australia, His Excellency the Honourable Hieu Van Le AC, presented the former SA Wing with its Group Flag.

Sir Ross and Sir Keith Smith who with SGT Jim Bennett and Sergeant Wally Shiers flew their Vickers Vimy G-EAOU from London to Australia 1919.

The Sir Ross and Sir Keith Smith Fund was established in 1986 by Lady Anita Smith, the widow of Sir Keith Smith to commemorate the achievements of these two South Australian aviation pioneers, Captain Sir Ross Smith KBE., MC, DFC, AFC and his brother Lieutenant Sir Keith Smith KBE, Lady Smith recognised the need to stimulate local knowledge and innovation in aerospace technology, and directed the Fund be applied in perpetuity for advancement in SA of the science and education of aeronautics.

The grant will help support the South Australian Group in delivery of a comprehensive range of activities focused at encouraging an interest in aviation in the cadets. These include a range of flying experiences in powered aircraft, helicopters and gliders, flying scholarships for cadets and arranging for cadets to attend the Avalon Airshow.

The Sir Ross and Sir Keith Smith Fund has previously assisted the SA Air League in a number of activities including their trip to Ballarat to take part in the Air League's biennial review

In 1919 a prize of £10,000 was offered by Australian Prime Minister Billy Hughes to the first aircraft to fly from London to Australia in 30 days or less. Taking up the challenge, the Smith brothers along with two mechanics SGT W.H. Shiers AFM and SGT J.M. Bennett AFM, MSM departed the UK in a surplus Vickers Vimy bomber, completing the challenge in 27 days and 20 hours, earning them the prize money and a place in Australian aviation folklore.

Whilst Sir Ross was tragically killed in 1922 as he was preparing for an around the world flight, Sir Keith went on to become the Australian representative of Vickers aircraft company and a director of several airlines and other public companies. Sir Keith also served as a Vice President on the Council of the AAL during the 1940s, which gives this award a special significance for the Air League.

Lieutenant Commissioner Martin Ball, the Group Executive Commissioner of South Australia Group stated "The support provided to the South Australia Group of the Air League by the Smith Fund over the last four years has been greatly appreciated and it has assisted in the delivery of a comprehensive activities and education program focused at encouraging the interest in aviation in our cadets. There is little doubt that the high participation rates in these activities were the result of the financial support from the Smith Fund."

Further information on The Sir Ross and Sir Keith Smith Fund can be found at http://www.smithfund.org.au

About the Australian Air League

The AAL is a youth group for boys and girls aged 8 years and older who have an interest in aviation either as a career or as a hobby.

In the Air League they learn about aviation in all its forms through classes in theory of flight, navigation, aircraft engines and a variety of interesting subjects. The Air League also aims to enable them to achieve their full potential and become better citizens who can effectively serve the community.

With squadrons in most states of Australia, the Air League has been serving the community in Australia since 1934. It is entirely self-funding and is staffed by volunteers who give their time to achieve its goals.

www.airleague.com.au or 1800 502 175

What is the Air League?

The AAL is a youth organisation for boys and girls aged from 8 years which encourages an interest in aviation as a career or as a hobby for the youth of Australia. The organisation is entirely self-funding and is staffed by volunteers who give their time generously to achieve its goals. The AAL has no political, racial or religious connections.

The aims and objectives of the AAL include:

- To promote and encourage the development of Aviation in the Youth of Australia
- To promote good citizenship
- To promote ingenuity and resourcefulness of its members
- To develop the physical and mental abilities of its members

The League's motto "A Vinculo Terrae" translates into

Cadets and officers of the AAL take part in ANZAC Day, Sydney

"Free from the bonds of the Earth". This motto contains the very essence of flight into space.

The AAL was formed in 1934, in an era when Australian Aviators such as Sir Charles Kingsford-Smith, Charles Ulm, Bert Hinkler, Sir Ross and Keith Smith and others were household names and heroes. The first Squadron was opened in Manly (NSW) and the Air League quickly spread throughout that state. In early 1939 the first squadron was opened in Victoria and in 1944 the first girls' section was formed. Today the AAL is active in NSW, ACT, VIC, QLD, SA and is still expanding.

Girls and boys from 8 years through to 18, are eligible to join a squadron as a cadet and participate in the weekly meetings and regular activities. On reaching 18 years, many cadets choose to remain in the organisation as officers or instructors, with some members having life long associations with the Air League.

AAL caters for boys and girls from 8 to 18 who have an interest in aviation

Adults who have a passion for aviation, care about the welfare of our youth and would like to contribute to Australian society can also join the Air League as trainee officers.

Parents and friends who would like to be involved but don't have time to be attend regular squadron activities can also help support their child's squadron with fundraising and other tasks.

What do Air League members do?

Cadets in AAL Flag Party and members of the AAL attend squadron parade nights once a week for approximately two hours, where they take part in a variety of interesting activities. These include ceremonial drill, physical training, model aircraft building, and aviation theory classes, such as navigation and aircraft engines. Training in first aid, life saving, camp craft and other interesting subjects are also available.

In addition to weekly squadron parade nights there are several parades and reviews conducted in each state during the year and nationally every two years. Several squadrons also have marching bands that compete keenly in competition, as well as take part in community events and special occasions such as ANZAC Day parades.

Air Activities are encouraged throughout the Air League and flying, both powered and gliding, is an important part of the training syllabus. The Air League operates a very successful Air Activities Centre at Camden Aerodrome, NSW which is fully staffed by volunteers mainly from the Aviation Industry who are dedicated to providing our young people flying at the cheapest rates available. In other states air activities are conducted in association with local flying training organisations who assist the Air League to provide air experience flights and flying training at competitive prices. Gliding is conducted through association with local gliding clubs and the Gliding Federation of Australia, and training and glider experience flights is available to all members.

Cadets of the AAL get to take part in a variety of activities including air experience flight.

In addition to flying training, the Air League holds regular air activity flying days where squadron members are taken for joy flights and are introduced to aviation. Many Cadets have experienced their first flight at one of these days.

Aviation is a dynamic industry and the AAL, sometimes called the Primary School of Aviation, is proud of the role it has played for over 80 years in promoting aviation to young Australians and helping to make them better members of our society.

AAL
A VINCULO TERRAE

Australian Air League

30 SQN Bloodhound Surface-to-Air Missile Unit

30 SQN Bloodhound MkI surface to air missiles, RAAF Base Williamtown. *Photo: RAAF*

Responding to British expectations during the 1950s that guided missiles would replace manned fighter aircraft, particularly for point defence of high-value ground targets, the RAAF made plans to enter the 'missile age'. In 1959 the Australian Cabinet approved the acquisition of the British-built Bloodhound Mk 1 surface-to-air missile (SAM), which utilised a semi-active pulsed radar system and was suited to static defence against single and multiple targets travelling at altitudes up to 60 000 feet and at a range of up to 45 kilometres.

On 11 January 1961, No 30 Squadron, a WW II Beaufighter unit which had previously been re-raised for target towing duty in 1948–56, was re-formed. Stationed at RAAF Base Williamtown, from February 1962, the unit became operational in January 1963. In June 1965 a detachment was sent to Darwin, where it remained until the squadron disbanded in November 1968.

Office of Air Force History

3BAGS formed at West Sale

West Sale, 1943

On 12 Jan 1942, No 3 Bombing and Gunnery School (BAGS) was formed at West Sale, Victoria. The School was formed to carry out the function of completing the training of air gunners with a course of instruction in gunnery, and to train air observers in bombing and gunnery. The unit's first aircraft -- a Fairey Battle -- arrived on 2 February 1942 from No 1 Aircraft Park. Training commenced on 8 March 1942 with 43 trainees arriving from Mount Gambier, South Australia. The casualty rate for No 3 BAGS could actually have been a lot worse than it was. Normally in an aircraft accident, both the pilot and crew (or trainees) would have been killed. But on several occasions the crew were able to escape death either because the pilot sacrificed himself in trying to land the aircraft, or because the trainees were able to parachute out of the aircraft. The School operated until 9 December

1943 when it became Air Gunnery School. The strength of aircraft for the unit at that time was 67 Fairey Battles, 24 Avro Ansons, 33 Airspeed Oxfords, 5 Ryans and 1 Moth Minor. The Air Gunnery School operated until December 1945 when the airfield reverted to civilian use.

RAF Aircraft - Battle of Britain and France

Much has been written about the relative performances of British and German fighter aircraft during the Battle of Britain. A few more words may re-kindle the claims and counter claims that exist.

During the Battle of Britain, the RAF had 650 combat aircraft, 250 of which were Spitfires. An additional 290 of both types were in storage, as replacement aircraft. Mostly, the Spitfires were targeted on the Me109s and the Hurricanes targeted the bomber aircraft, Junkers and Heinkels.

Spitfire Mk 1 P9374, on its first flight in 2017 after restoration. *Photo: John Dibbs, via Daily Mail UK*

The Luftwaffe had three air fleets: a total of 1000 fighters, 250 dive bombers and 1000 long range bombers.

The accepted view post the Battle of Britain was that the Spitfire could not have won the battle by itself; however, the Hurricane could not have won without the Spitfire. The Spitfire was difficult to build and not easy to maintain. It was fitted

Fw 190 G-1 carrying a 250 kg (550 lb) bomb, and the underwing 300 litre drop tanks.

with eight .303 machine guns and although they carried 2400 rounds, the Spitfire was no match for the Me109 until the MkV was fitted with a more powerful engine and 2 x 20mm cannon. The speed of the earlier versions was about 350mph and the MkV was 405mph. A few early Spitfires were fitted with Hispano 20mm cannon, but they suffered jamming in early operations.

Although not involved in the Battle of Britain, the FW-190 started flying operationally over France in August 1941 and quickly proved superior, in all but turn radius, to the Spitfire Mk V, particularly at low and medium altitudes. With a speed of about 408mph, the FW 190A was a match for the Spitfire and maintained superiority over Allied fighters until the introduction of the improved Spitfire Mk IX.

By Royal Air Force official photographer - http://media.iwm.org.uk/iwm/mediaLib//61/media-61242/large.jpgThis is photograph CH 16121 from the collections of the Imperial War Museums. Public Domain, https://commons.wikimedia.org/w/index.php?curid=24470361

Lance Halvorson, from articles in: 'War in the Air'. Gerald Bowman 1958 and RAF History in the Battle of Britain. Purnell 1968

Supporting Australia

Alec Howard

Rathmines of NSW became an extension to Point Cook, Victoria, due to decisions of the Government War Cabinet, relative to the future and existing 'defence' to our country which appeared looming through the Asian and Pacific regions.

Britain was drawn into WWII, thus involving Australia and its citizens, when a request for support from Commonwealth countries in September 1939.

Previously the Government had been advised of this impending happening, but didn't take it too seriously.

Initially, our Air Force, many existing pilots and airmen did volunteer, even to the extent to go abroad out of pocket. Of this call, the EATS program was put into play with the Commonwealth raising some 30,000 ranks.

Of those days, air cadets such as McMahan, Thurstan, Hodgkinson, Cohen and Wearne, to name a few, attended conversion courses with the view to transfer to 10SQN.

On 27 November 1939, 2 officers and 185 airmen boarded the RMS Orontes for England, arriving at Pembroke Dock. 10SQN RAAF was established, and then moved to RAF Station Mt Batten-Plymouth Sound.

As U-boat patrols were most important, the British Officer in charge of accepting embarkation yelled "all you Australians, any amongst you" before completing "those to a man" all stepped forward.

The officer, taken by surprise said "behave yourselves, you Australians are behaving like pigs." So, the name stuck and PIGS became their motto.

These Sunderlands were gigantic, not seen before say the airmen.

Vic Hodgkinson, Attie Wearne, Hugh Birch, Leon Lachel, Charles Pearce, Dick Cohen, Tom Stokes and Geoff Havyatt were some of the men who didn't return, not surprisingly, to Rathmines at the end of their tour, being instructors or commanders (unit).

After a 6 month tour, an American war news correspondent Virginea Contes (Cowles) stated "the squadron had flown 97,000 miles. The command totalled 14,000 miles, 179 submarines attacked and 50,000 ships convoyed – some achievement."

Rathmines was an important base for Catalina flying boats and their squadrons, which played a significant role in Australia's defensive operations during WWII.

Parade at Rathmines 1942

Early aerial view of Rathmines

AFTER THE WAR

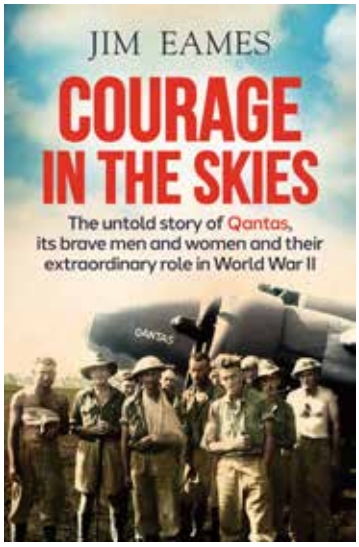
An Australian Light Horseman collecting anemones near Belah in Palestine. James Francis (Frank) Hurley, P03631.046

AUSTRALIAN WAR MEMORIAL

An exhibition exploring the personal stories of hope, loss, and love of ordinary Australians whose lives have been altered by war, from those who have served to loved ones left behind.

Take an intimate journey of the personal costs and consequences of war, unfolding over 100 years from 1918 to 2018.

AWM.GOV.AU/AFTERTHEWAR



Courage in the Skies

The untold story of Qantas, its brave men and women and their extraordinary role in World War II

Author: Jim Eames
Published by: Allen & Unwin - www.allenandunwin.com
352 pages
RRP $29.99 in paperback

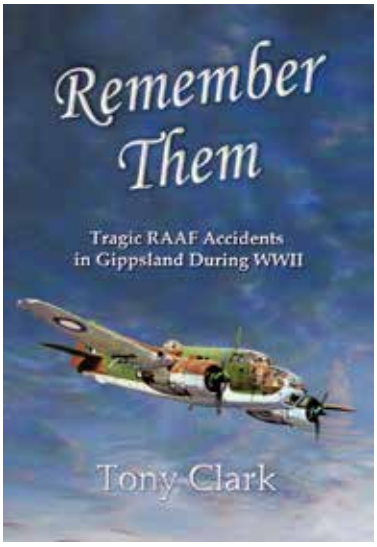
This is the extraordinary and little known story of Qantas' significant role during World War II, particularly in its campaigns against the Japanese.

Between 1942 and 1943, Qantas lost eight aircraft during its involvement in Australia's war against the Japanese. Over sixty passengers and crew died as a result. Yet Qantas' exemplary contribution to Australia's war effort and the courage of its people in those difficult times has been forgotten.

Courage in the Skies is the remarkable story of Qantas at war and the truly heroic deeds of its crew and ground staff as the Japanese advanced towards Australia. Flying unarmed planes through war zones and at times under enemy fire, the airline supplied the front lines, evacuated the wounded and undertook surprising escapes, including carrying more than forty anxious civilians on the last aircraft to leave besieged Singapore.

Absorbing, spirited and fast-paced, above all this is a story of an extraordinary group of Australians who confronted the dark days of World War II with bravery, commitment and initiative. They just happened to be Qantas people.

'In this most readable book, Jim Eames captures the experiences of a small band of brave, professional and pioneering aircrew who confronted the dangers of war, the challenges of unforgiving oceanic and tropical weather and the uncertainty of navigation in unarmed flying boats and conventional aircraft.' - Air Chief Marshal Sir Angus Houston AK, AFC (Ret'd).



Remember Them

Author: Tony Clark
Soft cover: 298 pages, with many B&W photos and maps
Publisher: Beaufort Publishing, 2018
Availability: Bookshops in Melbourne
or beauforthistoryaust@bigpond.com
Price: $39.95 incl P & P

Remember Them is a book of remembrance that recalls the lives of numerous men and women who diligently and earnestly performed their duty at a time of Australia's greatest need. Tony Clark details the tragic history of hundreds of accidents that occurred in East Gippsland during World War II, including the bases at Bairnsdale, East Sale and West Sale. These bases were critical to the training of RAAF crews who went on to serve in Australia and overseas.

Drawing on official records and the narratives of those who were present, Tony's book tells the stories of pilots, navigators, wireless operators/air gunners (WAGS) and ground crew and honours those who lost their lives in Gippsland during World War II whilst serving in the RAAF and WAAAR.

Many people who joined the Air Force during World War II acquitted themselves with skill and distinction. Tony's book reminds all Australians that these veterans must not be forgotten. Their lives meant something in the defence of Australia in the days when we as a nation were threatened by forces that wanted to overturn our way of life. Their RAAF service was marked by determination, courage, sacrifice and awe-inspiring accomplishments that led to victory.

The stories follow the training of aircrew in preparation for duties in operational areas both in Australia and overseas. Many personnel died or suffered injuries after they left Gippsland and where these later accidents have been identified, limited information regarding these personnel has been included.

The RAAF bases in Gippsland formed a crucial part of the necessary network of units. At the time war was declared, some bases were planned, but few were completed. Similarly, aircraft availability was limited and those at hand were unsuitable for the modern warfare that lay ahead. In February 1939, Australia's front line aircraft, including reserve aircraft, were identified as 55 Hawker Demons, 73 Avro Ansons and 22 Supermarine Seagulls; aircraft that were obsolescent and clearly inadequate for the task ahead.

An education that will liberate hearts and minds

St Joseph's Nudgee College holds a special place within Catholic education in the state of Queensland, across the nation, and beyond our shores. The College has an outstanding reputation that has been built by successive generations of students, Christian Brothers, staff, parents, Old Boys, and community members over the past 128 years. Not only is this rich history celebrated, the current generation of students, staff and families actively works to build on it.

This is achieved on a daily basis by students who are taught, cared for and challenged by teachers who want the best for each student.

The holistic education, personal development, and wellbeing of each student is the key focus of the College. At Nudgee College, a rich diversity of educational opportunities is offered – in the classroom, in sport, and in cultural pursuits and activities – as well as in faith development and social justice initiatives.

The College is positioned on a 136 hectare campus with a range of facilities that provide an engaging environment to learn, to grow, and to be challenged.

As a leading Catholic school in the Edmund Rice Tradition, Nudgee College strives to develop young men of character and spirit.

More than 1,580 boys and young men call St Joseph's Nudgee College their school. For more than 280 of these students it is also their home as boarders.

Nudgee College Boarding is committed to providing our boys and young men with a unique educational experience that will shape the rest of their lives.

Our Bathersby Boarding Village is a contemporary and inviting home away from home for our boarders, and is the heart and soul of the College.

The high quality of this residential facility complements the high quality of care provided by our professional staff.

"We knew that Nudgee College Boarding could provide so many more opportunities. Not just in normal everyday education, but in a way that would expose Tom to new challenges, that could help him to grow into a young man who will leave an indelible footprint on his surrounding world."

- Nudgee College Boarding parent

ST JOSEPH'S
NUDGEE
COLLEGE

BOYS' DAY AND BOARDING YEARS 5-12

www.nudgee.com

2199 Sandgate Road, Boondall, QLD 4034 Australia
Tel: 07 3865 0555 | Email: enrolments@nudgee.com

CRICOS Provider No. 00572G

EDMUND RICE EDUCATION
AUSTRALIA

Tony derived much of the information from records in the Australian War Memorial (AWM) and the National Archives of Australia (NAA), both such valuable sources of Defence and Air Force information.

Not all aircraft accidents have clearly identified causes. Many are the result of a string of incidents, which build up to an irrecoverable situation, often with the loss of life and aircraft. The modern aviators 'rule' that 'power+attitude=performance' was probably known in the early training days, but maybe not as well understood as it is in modern air forces.

Many issues contributed to the accidents in Gippsland. Tony lists a number of causes responsible for most of the losses; some occur many more times than others. The locally manufactured Beaufort figured prominently in many of the crashed aircraft and loss of life.

A good read for those interested in Air Force activities in Gippsland in World War II and to gain more facts, figures and personal details on so much loss of life.

By Lance Halvorson

Sandakan1942 – 1945

Author: Doreen Hurst
Soft Cover: 127 pages.
First Published 2009
2nd Edition 2018
ISBN 9 780980 671506
Availability: from author Email: sainturiel@bigpond.com

Stories of the local people who heroically helped the Australian POWs

This update to an earlier publication is timely. At present we are seeing a fundamental reassessment of Australia's national security policy as we seek to adjust to an emerging balance of power within our region of the Asia/Pacific. A perceived relative decline in the influence of our major ally, the United States, has forced policy planners to look to Australia's role within the region, in a manner not seen since the end of the Cold War. This reassessment requires working from first principles, the most basic being some agreed common values and shared interests on which any regional policy should rest. This requires closer regard to the wishes of regional countries, and their right to be heard in relation to the security of the region in the light of emerging threats, such as that posed by religious fundamentalism. This reality was identified quite recently in a regional forum, which highlighted the role of ISIS in seeking to establish an Islamic State within Sabah and the Southern Philippines.

Doreen Hurst has, in my opinion, given us valuable food for thought in this regard, demonstrating that within our region, we have a classic historical example of selfless support from a little recognised ally, namely the ordinary folk from Sabah, Malaysia (then North Borneo). Wisely, Doreen has allowed the survivors and the relatives of those brave souls who answered the call, to tell their story in their own words.

And a remarkable and poignant testament it is. What was the motivation for these people, with no great love or affiliation with the Colonial Power, to provide succour to our POWs at such terrible risk to themselves and their families, and to persist in spite of the barbaric retribution inflicted upon them mercilessly by the Imperial Japanese Army and Navy? How do we account for the supremely heroic and selfless actions of those brave souls from Sabah who risked their lives for the Sandakan POWs?

The Japanese conquest of World War Two brought our nation perilously close to invasion and subsequent subjugation by a powerful, brutal and pitiless enemy. In those now distant times, after Pearl Harbor and the fall of Singapore, our nation was in a desperate fight for survival. We acknowledge that the US, Britain and our formal Allies came to our aid, but the important role of local peoples, themselves of different ethnicities and faiths, in the security of our region has been neglected in the past. Some have corrected this appreciation, and while the internal politics of regional countries must remain their own concern, we should be mindful that all developments in the region, especially ethnic and religious tensions, impact the overall security equation.

With this book Doreen Hurst does much to redress this imbalance. It would be timely if our Government and the AWM, could put in place some tangible and lasting recognition of the sacrifice of those Sabahans of Sandakan: the bravest of the brave. In my view, a Sandakan Memorial Defence Fellowship at the Australian Defence College would be appropriate, with perhaps a Sandakan Essay Prize to be awarded for the best student thesis on a regional Defence subject, as well as recognised awards for courage. This would be a major contribution to their legacy as we commemorate the Centenary of the First World War.

This would honour the memory of those valiant hearts, and highlight the critical importance of a harmony of common values and shared interests, as we are drawn towards a closer relationship for regional security, in a post Cold War era.

By Denis Stubbs
GPCAPT(Retd) BA, MDefStudies, GradDipMngmt, Sir Robert Brooke-Popham Prize (RAF Staff College Bracknell Berks.UK).

Over 20 years with Directing Staff RAAF Staff College Fairbairn and author of the Exercise based on the proposed Sandakan POW rescue attempt (Project Kingfisher)

Cover photograph is of 'HEROES GRAVE' at Kuching, Sarawak where are buried the members of the underground who were executed by the Japanese and those who died in captivity.

Photos cover courtesy: Lim Kian Hock
Infografik Press Sdn Bhd
Kuching, SARAWAK.

St Peters Lutheran College Springfield is the place to be…..

Celebrating 11 years of education, **St Peters Lutheran College Springfield** feels justifiably proud in the strong achievements and continued growth in this medium sized school. Over many years, St Peters Lutheran College has been a highly respected academic school in Brisbane and their Springfield College is no exception.

This College community enjoys a culturally rich and diverse environment underpinned by the core values of **Care Dignity and Respect** evident in every interaction between staff, students and their families. Principal, Mr Craig Schmidt shakes hands with every new student to the College as they agree to abide by these core values and understand the expectation associated with the school motto *Plus Ultra* (ever higher). New families have a strong understanding that their children will be safe at St Peters and older families can confirm it.

Another special and unique St Peters experience is the **Ironbark Program**, a compulsory five-week "boarding experience" for Year 9 students, located at the St Peters Ironbark Outdoor Education Centre at Crows Nest. This Ironbark experience is a focus on personal growth and development aimed at challenging students physically, socially, intellectually and spiritually and is always voted "the best memory of school days" by our old scholars.

The College is accessible through a wide range of transport options, including close proximity to the train with a bus connection to and from the College and a comprehensive bus service which includes to and from the Greenbank area.

The College is committed to working with our students to realise their full potential and achieve *Excellence in Christian Co-education* and has plans for future building in 2019 to support their ongoing and projected growth.

You can be assured of a warm welcome at St Peters Lutheran College Springfield. Visit them during 2019 and meet the Principal, staff and students at their **Open Day** on **Saturday 2 June 2019 9am – 12pm.** Or, attend **Group Tours** being held from **9am on 14 March 2019** and **23 October 2019.** Visit the website to register at www.stpeters.qld.edu.au.

Should you wish to contact the school directly to find out more about why *St Peters is the place to be* please call the Enrolments Registrar on (07) 3470 3888, or email for further information at s.enrolments@stpeters.qld.edu.au.

St Peters Lutheran College
Springfield

Kindergarten to Year 12

Discover the St Peters Difference

Group Tour

Thursday 14 March 2019, 9:00am

42 Wellness Way, Springfield Central

Registration essential at: www.stpeters.qld.edu.au

STAY AHEAD OF THE THREATS.

ADVANCED MULTI-MISSION SOLUTIONS.

Multiple solutions for multiple missions

L3 Technologies delivers advanced aviation solutions, from rapid insertion of the latest technology to rapid response, in support of mission availability for today's operating environment and tomorrow's threats. We integrate and sustain missionised platforms that include ISR/SIGINT, electronic warfare/standoff jamming, maritime patrol & surveillance, tactical ISR, ground-based support and light attack. With speed and innovation, L3's multi-mission solutions keep our customers ahead of threats today and into the future.

Accelerating the pace of change.

L3 Technologies

L3T.COM

The Hon Darren Chester MP
Minister for Veterans' Affairs
Minister for Defence Personnel
Minister Assisting the Prime Minister for the Centenary of ANZAC

APPOINTMENT OF MEMBERS TO THE VETERANS' REVIEW BOARD

Members of the Veterans' Review Board (VRB) have been appointed by the Governor-General, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Ret'd), the Minister for Veterans' Affairs Darren Chester announced today.

There will be 17 members of the Board appointed for a term of five years and two members reappointed until 11 November 2020 to mentor and develop the skills of the new appointees.

The 11 senior members appointed will be Mr Gary Barrow, Dr Peter Habersberger AM RFD, Mr Douglas Humphreys OAM, Ms Louise Hunt, Mr Christopher Keher, Mr Michael Kelly, Ms Hilary Kramer, Associate Professor David Letts AM CSM, Mr David Thomae, Ms Susan Trotter, Mr Leslie Young OAM.

Captain Steven Coghlan, Brigadier Alison Creagh CSC, Colonel Robin Regan, Commander Sophia White, Colonel Warwick Young will be appointed as the five services members.

Ms Mary Desses, Dr Bernard Hockings and Professor Robert McLaughlin will be appointed as the three members of the Veterans' Review Board.

"These appointments ensure the Board will have relevant experience suitable for deciding applications for review of decisions of the Repatriation and Military Rehabilitation and Compensation Commissions," Mr Chester said.

"The members have outstanding experience and achievements in their fields and I am confident that each member will serve the veteran community with distinction in this important role.

"I congratulate all the appointees and look forward to their contribution to the important work of the VRB."

The VRB is part of the veterans and military rehabilitation and compensation determining systems. It is a tribunal created by Parliament to review decisions about disability pensions, war widows' and widowers' pensions, and attendant allowance under the Veterans' Entitlements Act 1986 and rehabilitation, compensation and other benefits under the *Military Rehabilitation and Compensation Act 2004*.

Biographies of the appointees are available on the VRB website.

The Hon Darren Chester MP
Minister for Veterans' Affairs
Minister for Defence Personnel
Minister Assisting the Prime Minister for the Centenary of ANZAC

APPOINTMENT OF NEW OFFICE OF WAR GRAVES DIRECTOR

BRIGADIER Paul Nothard will take up the role of Director of the Office of Australian War Graves from 11 January 2019, the Minister for Veterans' Affairs Darren Chester announced today.

Mr Chester congratulated Mr Nothard on the appointment saying his highly experienced career as an Army officer would prove invaluable in his new role.

"Mr Nothard has more than 30 years of experience in the Australian Army with his most recent appointment as the Deputy Commander Joint Task Force 633 in the Middle East," Mr Chester said.

"He has had an impressive military career demonstrating strategic leadership in complex and difficult environments including roles in logistics, transport operations, fleet management, career management and personnel policy.

"Mr Nothard holds a Bachelor of Professional Studies, a Masters of Management and a Masters of Strategic Studies.

"He is a Graduate and Member of the Australian Institute of Company Directors and is an Executive Director on the Board of the Army Amenities Fund. I look forward to working with him."

Mr Nothard said he was excited to take up the role of Director of the Office of Australian War Graves and looking forward to draw upon his defence knowledge and experience to acknowledge and recognise those who have served and made the ultimate sacrifice for Australia.

"Australia has a long-standing commitment to remembering our war dead and I am honoured to have been given responsibility for this important task," Mr Nothard said.

Mr Chester thanked the outgoing Director, Ken Corke, for his work over the past three years.

"Mr Corke has done an outstanding job during his tenure with the Office of Australian War Graves during a very significant period leading up to the Anzac Centenary," Mr Chester said.

"On behalf of the Australian Government and the ex-service community, I sincerely thank Mr Corke and wish him all the best for his future."

Mr Nothard was awarded the Conspicuous Service Cross in 1999 and in 2008 was made a Member of the Order of Australia for exceptional service for senior officer management in the Australian Army,

Commanding Officer of the 1st Combat Service Support Battalion and as the Commander of the Force Level Logistic Asset in the Middle East Area of Operations.

ADVOCACY, ENTITLEMENTS AND SUPPORT (AES) SPOT[1]

Introduction

Even the least discerning will, by now, have detected the slightest hint of a bias in these articles. It's time to come out. To state the obvious. Infusing my articles is a fundamental belief about Ex-Service Organisations - and Air Force Association Ltd in particular:

We are the custodians of the past, and the stewards of the future.

What has brought this admission to the point of revelation? Well might you ask, dear reader. The two current Reviews into veterans and family support have certainly focused the mind. But the crucial arbiter is National Council's resolution that the future of our Association vests in creation of veterans' support services, which may now be extended to crisis support.

[1] Article prepared by R.N. (Dick) Kelloway, National VP, ATDP-accredited Level 3 Compensation and Level 2 Wellbeing Advocate.

With the Productivity Commission Draft Report released for Public Responses, due by (the delayed date) 28 February, it is time to discuss how key findings in the Draft impact on AFA's strategic objective. At the time of writing, the Minister is likely to have released the Scoping Study before the Avalon Air Show.

The URL for the PC's Draft is: https://www.pc.gov.au/inquiries/current/veterans/draft

Background

By way of introduction to the PC's key findings, its Draft reinforces the criticism that AFA through ADSO levelled at the Issues Paper. The Draft is unequivocally grounded in 'market economic' assumptions. Initiated by Margaret Thatcher in the UK around 1980, this economic theory was finessed by the Reagan Administration as 'financialisation'. Forty years later, even the International Monetary Fund is trenchantly critical of the failure of 'neo-liberal economics'. (The IMF is the global father organisation for Structural Adjustment for Nations stricken by the indebtedness that accompanied the theory.)

Our concern is that austerity and Efficiency Dividends have stripped DVA of capability and contracting to the private sector the services has sacrificed service quality in the name of profit. There are a couple of fundamental flaws in outsourcing service delivery – all have an economic basis, but also have a social consequence.

First, market theory suggests that contracting services to the private sector will engender competition and therefore improve service delivery. Second, contracting service delivery will result in Budgetary savings over the cost of Public Service delivery. (The assumption being that the Public Sector is less efficient that the private.) Third, the less the government intrudes in the market, the more effectively the market will work. 'Market failure' in a significant number of privatised sectors illustrate the extent to which quality takes second place to profit. Economists term this 'rent seeking'. No matter the term, it is the 'consumer' of the service that wears the failure of the market.

Put another way, adherence to neo-liberal economics has disadvantaged those that need a quality service. As Clinton said: "It's the Economy, stupid". Or, as Margaret Thatcher said even more pertinently: "Economics are the method; the object is to change the heart and soul [of the Nation]."

PC Draft Report Key Findings

Please forgive my brief foray into Critical Economics 101. I'll now get the point. The Draft, which is titled 'A Better Way to Support Veterans', extends to 704 pages, including its bibliography, and includes 48 recommendations (see pp43 to 67). Of the findings and 48 recommendations, AFA believes the following are critical to the future of veterans' support:

- Veterans' entitlements are 'overly generous'
- Veterans' entitlements are inequitable
- There should be only on Permanent Impairment rate of compensation
- Statements of Principles should have only one Standard of Proof
- DRCA and MRCA should be amalgamated
- A single Appeal pathway should be established for all Acts
- VRB Hearings should be abolished
- Some veterans' families' entitlements should be means-tested or needs-based
- DVA should be abolished
- Veterans' support should be a Department of Defence responsibility
- A Veterans' Services Commission should be created in Defence
- A Joint Transition Command should be created in Defence
- A levy should be imposed on Defence to fully-funded veterans' compensation

AFA will be assisting ADSO to prepare a response to the PC Draft Report. Our intended approach is to view the Draft from a 'helicopter' not to get down on the weeds responding to every finding or recommendation. We have proposed that the other 17 ADSO Members have specific interests in certain findings and recommendations. Attacking the detail is best left to them. The ADSO Response will provide the overarching framework for their detailed responses.

From this perspective the key framework points are:

- In many instances the Draft demonstrates a clear lack of a deep understanding of issues of concern to a majority of the veteran community including families.
- If implemented, it would leave many younger veterans and future generations of veterans with much worse post-discharge care and compensation than current senior veterans and widows receive under VEA.
- The Draft is a re-arrangement for economic reasons of responsibility for veterans' support rather than a clear strategy to meet their and their families ongoing needs.
- The increased responsibilities and financial premium imposed on the Department of Defence would be a major diversion for the Department whose prime responsibility is to protect Australia by training for and prosecuting military operations.
- The worsening global geo-strategic environment suggests this is an ill-conceived and risky proposition.
- The improvements made by DVA through Veteran-Centric Reform have remedied fundamentally the Public Service Commission's criticisms in 2013.
- The Secretary's Transformation program and the ESO Round Table's refocus on strategic outcomes promise to accelerate the pace with which enhanced service delivery is being progressed.
- Other than a time-line, the Draft fails to include a change plan for implementation of its recommendations.

  As it acknowledges the complexity of its recommendations, this failing is a fundamental.

Needless-to-say, there will be more said than this brief outline. AFA will advise Division Secretaries about the ADSO URL for the Response when it has been drafted. National Council may also submit a Response, depending on the content of ADSO's Response. Again, we will circulate the Response to Members.

Conclusion

The Productivity Commission is holding Public Hearings in all capital cities and many regional centres. I hope you have had an opportunity to attend and to express robustly your misgivings.

It is our heritage that is at risk. We are either the effective stewards of the future, or we will be damned by the future for being nothing more than custodians of the past. The choice is ours to make. Let's be prepared to educate ourselves in the issues, identify

the range of possible consequences, accept our responsibility and engage with each other and other ESOs to prevent injustice.

Summer 2018 Lost Section

Finally, as the last paragraphs in the Summer 2018 edition fell off the back of the Journal, the missing paragraphs are included here in this article.

Models for Professional Advocacy.

ADSO contends that the Canadian Bureau of Pension Advocates (like its counterparts elsewhere) is the product of that nation's unique culture, imperatives and experiences.

ADSO has proposed incorporation of an Institute of Professional Military Advocates that is built on Australia's military and veterans' traditions and legislative provisions.

Currently, around 40-50 advocates of the 1,600 are paid. ADSO accepts, however, that some movement towards a higher proportion of paid advocates is inevitable. Be that as it may, the tradition of Mates helping Mates is as strong amongst younger veterans as it is for the current cohort of Vietnam-era advocates.

ADSO submits that the future will involve an amalgam of volunteer and paid advocates

Sustainability, Consistency and Reliability

(i) ADSO contends that the advent of ATDP has set in place the foundations for national consistency as advocated in the Rolfe Review.

(ii) The increasing number of accredited advocates are supported by the experienced and competent TIP-trained advocates that either remain in practice at Levels 3 or 4 until December 2021. Together these cohorts will ensure that service delivery is reliable. If their ESO/VSC can encourage the latter cohort to stay on as mentors, the prospects of reliability will be further enhanced.

(iii) Sustainability has a numerical limb that is, at this stage, perceived widely to be the most problematic. ADSO contends that there are, however, pools of potential candidates that have to date not been tapped. These include veterans that are on INCAP/PI, and spouses of veterans. Clearly, the nature and level of incapacity of the former and the freedom of the latter to find time away from family commitments or work are relevant considerations.

(iv) ADSO has suggested a concerted recruitment drive and the paying of some advocates to access the latent pools.

Efficiency and Effectiveness

(i) ADSO agrees with the wider view that transition is a particular need that collaboratively by Defence, DVA and the ESO/VSC community must attend.

(ii) The introduction of legally trained public servants or legally qualified professionals, however, has the potential to be so disruptive that it would incur inefficiencies.

(iii) ADSO is frankly concerned that the decision to employ legal professionals would be destructive of voluntary advocacy. Just as the introduction of ATDP has led to the loss of valued volunteers from advocacy, so too would lawyers would lead to further losses.

(iv) ADSO cautions that the ramifications of the proposal be weighed very carefully. At the moment, the cost to Government of veterans' advocacy is the $4m allocation to BEST. Contrary to the Contestability Programme's cost-saving objective, the Government may find itself with another ill-considered policy initiative that ends up costing many times the current budgetary outlay. ADSO estimates the annual expense would be around $120m.

Level of Service

(i) ADSO contends that, as is befitting for those who have been prepared to lay down their life for their fellow citizens, the level of service delivered by DVA is markedly superior to that accessed by society's most disadvantaged and most disabled.

(ii) To contemplate transfer of services to a mega-department would therefore render ADF members and veterans' commitment and their families' steadfast support as being of no value to society. To create this impression – let alone reality - would place Australia's national security in jeopardy.

(iii) Again, ADSO cautions Government to consider thoroughly the full range of ramifications of policy driven by dogma.

Interest-focused Services

(i) ESOs' role has long been to bring the interests of its veteran members to the attention of Government.

(ii) ADSO notes that its efforts are complemented well by the various forums in DVA's National Consultation Framework and by the workshops that have been conducted by Project Lighthouse and ATDP. Indeed, the participatory research methodology adopted by the workshops is the 'gold standard'.

(iii) ADSO proposes that the interests of veteran groups will be enhanced if the findings of the various Forums and workshops are integrated into DVA's annual planning cycle. This proposal is consistent with Professor Peter Shergold's recommendations in many reports for and to governments.

Appeals

ADSO is trenchantly opposed to amending VEA 1986 to allow legal practitioners to represent veterans at the VRB. ADSO contends that it would make the VRB:

(i) a full-cost jurisdiction;

(ii) incur unacceptable financial risk for veterans;

(iii) divert the focus from the merits of facts and contentions to points of law;

(iv) deny veterans the Board's full attention to them and their circumstances; traumatise those already traumatised; and
undermine the veteran community's trust in the fairness of the appeal pathway.

Governance and Quality

ADSO draws the Study's attention to the governance and QA features of its proposed Institute of Professional Military Advocates. These include:

(i) incorporation with a professional Board;

(ii) adoption of a social enterprise model, with social benefit and economic sustainability objectives;

(iii) joint ESO-DVA funding and public donations;

(iv) responsibility for training, standards, service delivery and quality assurance;

(v) independent oversight by ASQA; and

(vi) adoption of a 'market stewardship' approach to ensure independent monitoring of service delivery.

Stakeholders' Roles and Responsibilities

(i) ADSO submits that one of the consequences of VCR has been to strengthen the partnership between its 18 Members and DVA. Amendment of the ESORT agenda to facilitate discussion of strategic concern to ESOs has further strengthened the ADSO-DVA partnership.

(ii) Completion of ESORT's shift of focus to the strategic issues that are relevant to the national leadership will cement collaboration.

(iii) Robust, but respectful engagement, focused on issues appropriate to the Forum's level can only have benefits for service delivery in general and to advocacy services in particular.

Implementation and Costings

ADSO would welcome an opportunity to engage with the Study in developing an implementation plan and costings for the models it considers."

Stop Press

At the time of writing on the final day of the INVICTUS Games, the Prime Minister and Minister for Veterans' Affairs announced that the Government *'will develop'* a Veterans' Covenant and issue a Veterans' Card and Veterans' lapel pin. The Media Release can be accessed at: https://www.medianet.com.au/releases/169227/

In parallel, the Commonwealth Minister and State/Territory Ministers for Veterans Affairs released a Joint Communique following their Ministerial Round Table. The Communique can be accessed at: http://minister.dva.gov.au/media_releases/2017/nov/joint_vmm.

The Hon Darren Chester MP
Minister for Veterans' Affairs
Minister for Defence Personnel
Minister Assisting the Prime Minister for the Centenary of ANZAC

EXPANDED ONLINE CLAIMING FOR VETERANS

Faster claim submissions and processing times for veterans and their families are being delivered through a number of recent improvements and features to MyService – the Department of Veterans' Affairs (DVA) online platform.

Minister for Veterans' Affairs Darren Chester said veterans and their families can now submit claims for Incapacity Payments online, which is one of the most significant enhancements since the platform's inception in 2017.

"Our Government is putting veterans and their families first and provides more than $11.2 billion each year to deliver the essential services and programs they rely on," Mr Chester said.

"DVA's transformation is about not only upgrading out-dated computer systems but also looking at improving our service delivery to ensure the best possible outcome for veterans and their families.

"Adding incapacity payments to the ever growing list of claims you can now submit online is a significant benefit for those veterans and their families who most need to access to support quickly and easily.

"By providing enhanced online services, veterans and their families are able to access DVA services when and where they need them and the MyService platform has already seen significant reductions to the time and effort required to submit and process claims."

MyService continues to improve and is focused heavily on collaboration with veterans and their families to ensure DVA is building the programs and services veterans need. The online platform has reduced paper based forms containing 40+ questions on a single form to only 3–7 questions online and already had a significant impact on the average time it takes to process a claim. In some instances the time taken to process a claim can be less than 24 hours.

Eligible veterans who have not registered are encouraged to visit MyService to sign up.

DEFENCE PARTNERSHIPS

Aerospace
Land Systems
Maritime

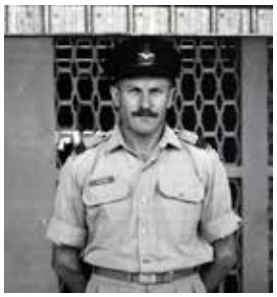
MARAND

celebrating 50 YEARS
Creating the future. Together.

Melbourne · Australia

sales@marand.com.au www.marand.com.au

Wing Commander Stanley John Wilson 1932 - 2019



WGCDR John Wilson passed away peacefully on 13 January 2019 in Canberra with his family by his side. He was interred with his wife of many years, Sue, in the Woden Cemetery, Canberra on 21 January 2019.

Stanley John Wilson was born in Ware, Hertfordshire in England on the 7th March, 1932. Always known as John, the eldest of 4 children, of Stanley Joseph and Ellen Winifred. His father had served in the British Army in World War 1, and thought there was more to life than the farm work - the family then decided to move to Australia. At the age of six, John and his family embarked on the "Strath-allan", a magnificent P&O liner of 23,722 tons, on its maiden voyage to Australia, arriving in Fremantle on the 19 April 1938.

John's dream was to be a pilot in the Air Force. However, after he was diagnosed as colour deficient, his dream was not achievable & although most disappointed, he was still keen on the Air Force. He joined the RAAF on 1 September 1953 at 21 years of age, initially as an Equipment Assistant, before being commissioned as a Junior Intelligence Officer on communication duties, specialising as a photo interpreter. This was the beginning of a long career in the defence force.

An Air Force career option at the time was to be a linguist – a choice of Russian, Mandarin or Indonesian. John chose Mandarin, a language that has over 50,000 Chinese characters and five tonal ranges – this language became a lifelong love and learning experience. John went to the RAAF School of Languages at Point Cook from 1954-55 to learn Chinese and after some further study was posted to Hong Kong in early 1956.

During his time in Hong Kong he lived with two Chinese families, as was sometimes the practice with Air Force students. After an 18-month tour, John was posted back to Point Cook for two years as an instructor. He then returned to Hong Kong for a full time, two-year diploma course at Hong Kong University followed by six months work as a linguist and other associated intelligence duties at the RAF Unit Hong Kong called Little Sai Wan - officially known as RAAF Butterworth Det A.

Duties also involved operating from another RAF Unit at Batty's Belvedere, located at The Peak - which developed into a fully integrated operational and residential site. Unit personnel also worked in a mountain top station at Tai Mo San in the New Territories and lived at RAF Sek Kong with British Army/ Gurkha units.

John was posted in 1968 to Colorado, USA for four months, to undergo training as a Photographic Interpreter (PI). On the way, he detoured to Bundaberg to see his future wife, Sue. After his training in USA John was posted to Canberra and after only six months of marriage, to Vietnam in February 1969. He spent six months in Saigon as a PI with the 16th Tactical Reconnaissance Intelligence Technical Squadron, based at the Tan Son Nhut air base. He was a supervisor of the photo intelligence unit from February to August 1969.

In 1970 John was posted to RAAF Base Amberley in Queensland where he & Sue bought their first home in Ipswich – a classic Queenslander. He was the Intelligence Officer at No 82 Wing, where the author first met him when a navigator with No 6 Squadron. He was posted again in October 1972 to Laverton, Victoria. In 1974 he was posted back to Canberra, before promotion to Squadron Leader and a posting to RAAF London in February 1976, - back to his homeland - to work in joint intelligence at the Ministry of Defence.

Back in Australia in February 1979, resuming life back in Canberra. But in less than a year John was unexpectedly posted to RAAF Base Pearce, in Western Australia, back to his 'home state'. After 18 months, he was back in Canberra, to work at RAAF Fairbairn in the 'Barn'.

After 29 years in the Air Force and reaching the rank of Wing Commander, John decided it was time to leave. In his resignation application, he said , "I've had a long and satisfying career in the service and with less than five years remaining before reaching retiring age, I wish to return to civilian life".

After retiring from the Air Force in 1982, he took nine months off before

returning to work in Russell offices, Department of Defence, as a civilian in the intelligence section. John joined the RAAF Association (ACT Division) in 1996 and he and Sue did a lot of work to help with fundraising and organising events, especially during his time as Vice President from 2003 to 2007. They were stalwarts of the Association, had so much energy, and loved doing things together. When Editor, John assisted me with editing the Newsletter and earlier issues of Wings. He was meticulous in this task and would edit every character, punctuation and paragraph format. The final copy was always just right.

John was a gentleman and well known to his ex RAAF friends for his warm smile, deep thinking, intelligence, courtesy, friendliness and his Mandarin language skills. He was a frequent visitor to Department of Foreign Affairs in Canberra for his weekly Mandarin 'discussion group' with his tutor, Lucy Liu and other linguists; an activity he kept up for 20 years. When I was an active member of the Canberra Yacht Club, I saw John regularly in his trailer-sailer, mostly solo, sailing on Lake Burley Griffin. He would ride his motor cycle all over; to Association meetings, Mandarin language meetings and even to Broulee on the south coast of NSW, until he stopped riding at age 86.

Farewell to John on his last flight; he will be remembered by his family and his RAAF friends for a life well lived, full of adventure, love and humility. He was a gentleman.

Lance Halvorson

TRANSITION SIMPLIFIED

A Defence career offers many strengths, skills and achievements that are relevant and transferable to a civilian workplace. After your initial training, you will have accrued skills such as adaptability, attention to detail, cooperation, cultural sensitivity, professional ethics, reliability, situational awareness, stress management and teamwork (to name a few).

After managing a team, you will have also accumulated skills such as coaching, facilitating group discussions, managing a team to meet deadlines, mentoring, personnel management, team building and supervisory/ management skills, etc.

However, while you're still serving it is typical to think that your military role equates only to further military work. I know I certainly did after a 20 year Army career. So don't beat yourself up if you're thinking like that. With a broader understanding and a little help, you will be able to see beyond 'pigeon-holing' yourself into only similar roles you had in your military career. So we encourage you to take the time to explore career options and seek guidance on aligning your transferable skills to other industries and jobs. When you do this, it opens up many more opportunities and greatly increases your ability to see beyond the uniform more clearly.

Consider a new career direction well before you leave Defence. Remember that what you decide to do is not final or absolute. In today's job market, the average time spent with any one employer is now approximately five years and the younger generations are changing jobs every two years. This means long-term careers are becoming less likely. Statistics show that young job seekers who leave school today will change careers (not just jobs) nine times before they retire. Therefore, whatever decision you make today, won't necessarily lock you in until retirement.

Your written application is typically the "first impression" employers see of you. First impressions have a massive impact on your success or failure during this process. A written application includes:

CV/Resume | Cover Letter | Selection Criteria/Suitability Statement | Linked-In profile | Social Media presence

Your written application should include more than what's on your Duty Statement and the list of things you have been responsible for. If this describes your written application – stop and get help now! It should include your demilitarised transferable skills (targeted toward the industry/job you wish to attract) and your workplace achievements. Achievements tell an employer about you from a cultural perspective - for example, your work ethic, initiative, team work, management performance, customer service and desire to improve your professional skillsets.

The most effective written application is one that quickly highlights to the employer how your skills match the skills required for their job. This is the area where most job search frustration occurs. So, spend time getting this area right and you'll have much greater success. The same principle also applies to the best way of promoting yourself at the job interview. Talk specifically to the points the employer is looking to use to grade applicants and you'll be doing the best you can to secure that job.

We recommend that at everything step of finding new employment, remove or replace military terms with every-day language. This will be challenging if you've never thought of doing this before. But you can if you avoid language like "*I have commanded teams of various sizes on many deployments in different situations*", or "*I managed a team to achieve the Commander's intent at sea and at shore*". While these examples aren't using military-specific terms, they make statements that only you know the context of. If you wish to use statements like these, then add examples of what you refer to. For example; "*on my last overseas deployment to Iraq, I managed a team of 10 staff for nine months to provide close protection and surveillance at airports, compounds and small villages*." Or "*I managed a team of four highly skilled technicians over six months to operate the ship's combat radar systems whilst under pressure on high-intensity operations*".

Bottom line - The effectiveness of any written application is only determined by the ratio of applications sent to interviews gained. If you're sending out many applications, but not getting at least 50% success rate of being invited to an interview, then your written application needs adjusting. Similarly; the effectiveness of promoting yourself at a job interview is assessed by the number of job offers you get in relation to the number of interviews you attend. If either of these ratios aren't what you'd like, ask for help. Right at this moment, in Australia there are a number of funding sources available if the lack of finances is preventing you from seeking assistance.

Defence invest significant time and money in training you to think and perform your military role to achieve the military mandate. We all know that this 'regimented way' of operating is different to most non-Defence workplaces. However, little is offered to help you know how it is different, how to adjust when engaging with civilian employers and also with new team mates when entering a non-Defence workplace.

When engaging with employers, you should know that typically the following traits are much stronger in Defence - focus on safety, teamwork, work rate and work ethic, professionalism and attitude to task completion.

The greatest transition challenge is in relating the commercial value you bring to civilian employers. You know you can work hard, but just saying that isn't enough. Most ex-Defence members are already very well equipped to get a civilian job in either Operations, Security, Work Health & Safety or Teaching. If you think you have little to offer a commercial organisation, think again.

There are any number of people and organisations wanting to offer help. But who is best placed to help you with your transition and find a job on a good salary? Our experience is that only someone who personally understands how challenging it is to relate military experiences to civilians and who has also worked in commercial workplaces can understand you, your current situation and help you through the next few months of your transition.

Its your choice to either find your feet through trial and error (which will take time), or seek assistance from those who have gone before you. How

much time do you have to learn through trial and error on how to compete with other job seekers for commercial opportunities?

Seeking transition assistance can be challenging, given there are so many organisations out there offering help. But think of it as learning a new language, because talking in military terms to a civilian employer won't work in such a competitive environment. Would you prefer to learn Chinese from the Aussie bloke down the road who has only ever taught from a book, or would you prefer to learn from someone who grew up in China and now lives in Australia? In both circumstances, you will be taught Chinese, but you will be able to speak the new language much better from someone who knows both languages and can help with the Aussie dialogue. Choose wisely who you seek help from.

For help in your smooth "Transition to Civilian", contact Trans-Civ www.transciv.com.au.

10 TRANSITION TRAPS

The following transition traps are what the team at Trans-Civ have observed over their 14 years in helping ADF members in their transition to civilian life:

1. Not thinking about your transition until you're almost out of Defence. Your loyalty won't be reciprocated.
2. Thinking that your next career move must be the job you have until retirement. The average time in any job now is only five years.
3. Thinking that because you can talk well with people in general, you'll be fine at job interviews. Talking about yourself in a promoting manner is more difficult than you think.
4. Compiling a Résumé from your own perspective and thinking it will be competitive in this job market. There are over 100 applications on average per job vacancy – above average applications are no longer competitive. Only the best applications get through.
5. Thinking that testing the waters with an average Résumé will be OK. You're asking an employer to judge you on an average Résumé. You can't decide to send them a better version of you later, as they will already have formed an opinion about your suitability.
6. Using a Resume that has grammatical and spelling errors (this is a major problem). Far too many job seekers send applications out before having them proof read.
7. Thinking a civilian employer will understand the context of your military terms in a written application and at a job interview. In all forms of communication with civilian employers, speak plain language only.
8. Not knowing how to use your existing network to open job opportunities. Your existing network is the best source of securing your first job outside Defence.
9. Thinking that everyone in your new organisation will love you because you served in the Australian military. Know that not everyone will love you and respect what you have done in Defence.
10. Working really hard to prove yourself in your new civilian workplace (it may show up your work colleagues). Be careful of the unintended collateral damage of working too hard in your new job.

THE LOVE OF COFFEE

The Love of Coffee is supporting our veterans and their families through the entire transition from the Defence environment into the commercial workforce and integrating back into our communities.

3 Elements Coffee (a veteran owned Australian coffee company) has developed several blends of high-end premium coffee:

- Allied (full bodied with a hint of chocolate)
- Terra Firma (Army – Strong, robust blend)
- Hydro (RAN - Full bodied blend)
- Airbourne (RAAF - Light blend, but full of flavour)

A percentage of each bag of coffee sold is donated into the EDIT (Ex-Defence Integration Team) program to provide formal transition training to our veterans and their families, in order that they may have a better chance of gaining employment after leaving the military.

Terry McNally Director of 3Elements coffee says ex ADF personnel aren't looking for charity after leaving the military, they are looking for meaningful employment. They want to contribute to the commercial workforce by adding value from skills they have developed whilst being in the military. The only real barrier preventing this happening is in the military to civilian translation of skill sets and languages. For example; when commercial businesses talk about using programs like Six Sigma and 5S, Defence personnel use instilled discipline to follow processes and maintain safety within the workplace to achieve similar outcomes.

Many civilian companies simply don't understand what military trained personnel can do or offer the commercial workplace, and exiting military personnel don't know what commercial value they have to offer. This is just one of the reasons leaving Defence personnel must be retrained in their thinking. Through organisations like 3 Elements Coffee, Trans-Civ and EDIT, we aim to change the current employer perception of someone with a military background, through empowering each exiting member to fully understand their value proposition and to be able to promote this effectively to commercial employers.

The EDIT Program is a fully recognised transitioning and workplace integration course designed to be undertaken prior to stepping out into the commercial workplace. It goes without saying that being part of the wider Defence community, spouses are also supported through the EDIT Program.

The EDIT Career Transition and Integration Program is a three-day course with two additional practice interviews to ensure each participant not only understands their commercial value, but it also assists with the all-important workplace integration. It is facilitated by ex-Defence members who have also experienced their own Defence transition and have also successfully integrated into a commercial workplace.

3Elements coffee also supports other Defence charities through hiring out of coffee carts and has pledged to support the EDIT transitioning course. You can also help your mates through purchasing 3 Elements Coffee directly from the website www.3elements.coffee.

3 Elements Coffee supports the not-for profit EDIT Program (www.edit.org.au).

The Clayfield College Way

Clayfield College students know that everything is possible. Empowered by an understanding of the significant role they play in their own learning, they are motivated to engage in the behaviours that result in excellent outcomes. Clayfield's rich tradition of providing quality education to generations of boys and girls is combined with a commitment to innovative educational practice to ensure an optimal learning environment, which is creative and challenging. With a co-educational Primary School from Pre-Prep to Year 6, girls only from Years 7 to 12 and boarding for girls from Years 5 to 12, the College is a vibrant learning community.

We offer a stimulating curriculum and comprehensive co-curricular opportunities to meet the needs of each individual within our community. Students are extended, supported and assisted to develop the dispositions required for success. The skills of critical and creative thinking together with a capacity for self-regulation are a product of the College's strong academic focus. Opportunities to participate and excel in the areas of sport, the arts and service leadership ensure that at Clayfield College education is holistic and personalised.

At Clayfield College, we want our students to be happy, laugh often, work hard and give back to the community. As we are a small school, we know each student and have a close partnership between parents and teachers.

Through the Pastoral Care program students develop commitment, self-discipline, self-motivation and a sense of social and community responsibility. This holistic program targets the needs of each individual. Its ultimate aim is for students to feel they are valued and worthwhile members of the community. Feeling connected in this way is essential for young people to thrive and succeed.

The opportunities available for students at Clayfield College from Pre-Prep to Year 12 are exceptional. The structures in place to ensure that your child will be able to use those opportunities to flourish are unique. Our values and the relationships that emerge from them, sit at the heart of the College providing the context for every individual to achieve.

Come and have a look at what Clayfield College has to offer by arranging a personal tour or try our 'Come and be a student for the day'. To find out more, visit our website www.clayfield.qld.edu.au.

RAAF MUSEUM
POINT COOK

The RAAF Museum, located at Point Cook, is home to an amazing range of historic military aircraft. A great chance to view these rare birds is at the Interactive flying displays which are held every Tuesday, Thursday and Sunday at 1:00pm (weather permitting). The Museum has a vast collection of historical material on show including several hangars with static aircraft, and offers visitors an exciting experience and insight into the history of the Air Force. Models, books, patches, clothing, mementos can be purchased at the Museum shop.

FREE ENTRY!!!

Opening Hours

Tuesday to Friday	10:00am to 3:00pm
Weekends and Public Holidays	10:00am to 5:00pm

Closed Mondays, Christmas Day & Good Friday

T: 03 8348 6040 F: 03 8348 6692
W: www.airforce.gov.au/raafmuseum
E: raaf.museuminfo@defence.gov.au
F: www.facebook.com/raaf.museum

RAAFMUSEUM
POINT COOK

Her dreams for tomorrow are our focus today

Our students know everything is possible...we build powerful learners through connection, rigour and perseverance.

Choose Clayfield College and let her light shine.

CLAYFIELD COLLEGE

P: 07 3262 0262 | **E:** enrol@clayfield.qld.edu.au | **www.clayfield.qld.edu.au**

CO-ED: PRE-PREP - YEAR 6 **GIRLS ONLY: YEARS 7 - 12** **GIRLS BOARDING: YEARS 5 - 12**

A School of the Presbyterian and Methodist Schools Association. Cricos Code: 00493G

GO BEYOND

MILITARY ENGINES

OPERATIONAL READINESS TODAY. UNLEASHING CAPABILITY FOR TOMORROW.

Pratt & Whitney's F135 propulsion system for the fifth generation F-35 Lightning II continues to redefine what's possible for our customers and their missions. And we're not done innovating. With a suite of unmatched propulsion technologies that can enable capability growth for the F-35, we stand ready to help take the world's most advanced fighter to the next level.

FLY FURTHER AT **PW.UTC.COM**

A UNITED TECHNOLOGIES COMPANY

KC-390. THE TRUE FIRST RESPONDER.

INTRODUCING THE MOST VERSATILE, EFFECTIVE AND COST-EFFICIENT MULTI-MISSION TRANSPORT IN THE SKY.

Building on our 48-year heritage of producing the most ruggedly reliable, low-maintenance aircraft, the KC-390 delivers the lowest life cycle cost and longest maintenance intervals in the industry. Add in the fastest reconfiguration time, higher flight speeds and the most efficient use of cargo space and you can see why there's no better aircraft for tough scenarios. Mission efficiency that saves money. Reliability that saves time. Performance that saves lives.

EMBRAER

CHALLENGE.
CREATE.
OUTPERFORM.