

ADM AUSTRALIAN DEFENCE MAGAZINE
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DEFENCE WEEK
PREMIUM EDITION



The upgrade is intended to retain the Hawk's relevance as a Lead-In Fighter trainer.

NIGEL PITTAWAY

BAE completes Hawk LIFCAP upgrade

Nigel Pittaway | Williamtown

The final Hawk Mk.127 aircraft to be upgraded under the Lead-In Fighter Capability Assurance Program (LIFCAP) was handed back to RAAF in a ceremony at BAE Systems Australia's Williamtown facility on March 7.

Performed under Project Air 5438, the LIFCAP program was delivered by BAE Systems Australia, in partnership with BAE Systems (UK), the RAAF, CASG and industry partners including CAE and Cubic Defence Applications.

The upgrade is intended to retain the Hawk's relevance as a Lead-In Fighter trainer as fast jet candidates graduate from the RAAF's new Pilot Training System (PTS) flying the new glass-cockpit Pilatus PC-21, and prepare them for operational conversion to a fifth-generation platform such as the Lockheed Martin F-35A Lightning II.

The upgrade is very similar to the Hawk T.2 (Mk.128) now in service with the Royal Air Force and includes simulated radar, electronic warfare systems, digital mapping, enhanced ground proximity warning

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(EGPWS) and traffic collision and avoidance (TCAS). Also included in the LIFCAP program was the replacement of legacy simulators and training aids by three full mission simulators (FMS) supplied by CAE.

“The RAAF’s fleet is now among the most capable in the world following this major capability upgrade”

One difference between the RAAF’s Hawk LIFCAP baseline aircraft and its RAF equivalent is that the Australian jets retain the original aircraft’s ability to employ live weapons. British Hawk T.2s have a simulated weapons capability only and additional software development and certification had to be undertaken under Air 5438, therefore adding complexity and risk to the program.

Work began on the LIFCAP program at Williamstown in September 2014 and the 33rd and last aircraft was handed back to the RAAF one month earlier than originally scheduled and within budget, according to BAE Systems Australia.

“The RAAF’s fleet is now among the most capable in the world following this major capability upgrade. The modified aircraft provides Air Force with a Lead-In Fighter that is comparable to the RAF’s Hawk T.2 Advanced Jet Trainer and ensures the Australian Hawk aircraft is suitable for a fifth-generation air force, preparing pilots for the F-35 Joint Strike Fighter,” Steve Drury, Director of Aerospace, BAE Systems Australia said.

“The enduring partnership we have built in that time with 78 Wing, 76 Squadron, 79 Squadron and the Tactical Fighter Systems Program Office (TFSPPO) is one we are extremely proud of and has helped deliver milestones for the Air Force like the completion of over 100,000 accident-free flying hours on the Hawk.”

An in-depth study of the LIFCAP program will appear in the May issue of *ADM*.

SYPAQ gets the nod for logistics UAS

Katherine Ziesing | Canberra

The Army has partnered with the Defence Innovation Hub to award an Army Innovation Day contract to SYPAQ to develop and demonstrate a next generation battlefield logistics small unmanned aerial system (UAS) called the Precision Payload Delivery System (PPDS).

The contract, valued at over \$1 million, was awarded using the Defence Innovation Hub’s Special Notice solicitation process. Special Notices allow Defence to call on industry and research organisations to submit proposals that can solve specific capability challenges.

Minister for Defence Industry Senator Linda Reynolds thanked SYPAQ for stepping up to answer the challenges of Accelerated Warfare.

“Defence units have an enduring need to be able to resupply their combat forces in the most hazardous environments,” Minister Reynolds said.

“Ensuring our Defence Force personnel have the most innovative, cutting-edge technology will ensure they are supported in their mission to defend Australia and its interests on the battlefield.”

Head of Land Capability Major General Kath Toohey said robotic innovations were key for the Army adapting to the challenges of the modern and future battlefield.



The PPDS in flight.

SYPAQ

“Army’s soldiers will get the opportunity to test this platform later this year and guide the development of advanced capabilities like the PPDS,” MAJGEN Toohey said.

“Through initiatives such as the Defence Innovation Hub and Army Innovation Day, SYPAQ has had access to opportunities not typically available to small and medium sized businesses, including direct collaboration between innovators and end-users,” CEO of SYPAQ Amanda Holt said.

The company has now been awarded five [innovation contracts](#) for concept exploration and capability demonstration.

“Army’s soldiers will get the opportunity to test this platform later this year”

ASC and Schneider team on submarine engineering

Schneider Electric has entered into an agreement with ASC to support Collins class submarine sustainment and plan for the Future Submarine program.

Schneider Electric is an established supplier to ASC of major power switching and circuit breaker equipment for the six Collins class submarines.

According to ASC CEO Stuart Whiley, the collaboration will improve obsolescence management of key electrical equipment for the Collins class, to remain in service into the 2030s, as well as explore opportunities for innovation and growth in support of future programs.

As part of the collaboration, graduate engineers from Schneider Electric and ASC will spend time working in each company’s submarine-related operations.

Schneider Electric Graduate Engineer Nicole Tang recently started at ASC’s deep maintenance operations at the Osborne Naval Shipyard precinct in Adelaide.



Dan Sage of ASC and Nicole Tang pictured at ASC's submarine deep maintenance facility at the Osborne Naval Shipyard. ASC

“The companies see the exchange of graduates as a significant step to growing Australia’s submarine engineering capability”

“Being able to work on the Collins class submarine provides unparalleled opportunities to observe and understand how Schneider Electric’s products are integrated and how they’re solving real-world problems,” Tang said. “There’s also the challenge of working on Australia’s most complex defence asset.”

In a statement, ASC and Schneider Electric said that the companies see the exchange of graduates as a significant step to growing Australia’s submarine engineering capability through the development of professional networks

and shared experience.

“It is through collaborations like this one, with Schneider Electric, that ASC will grow Australian industry’s capacity to meet our sovereign submarine requirements in coming decades, across both Collins Class and Future Submarines,” Whiley said.

The companies also said the collaboration is aimed at achieving a future strategic support agreement.

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



1. [Is the F-35 obsolete?](#)
2. [Rethinking the FFG\(X\) Program: Why a new contender must be considered](#)
3. [Design contract signed for submarines](#)
4. [Queensland backs new Rheinmetall shell plant](#)
5. [Equipment needed for Osborne sub yard](#)

World-first technology to revolutionise space imaging

A world-first approach to space imaging led by Western Sydney University's International Centre for Neuromorphic Systems (ICNS) was demonstrated for the first time publicly at this year's [Avalon Airshow](#).

The Astrosite, a mobile space situational awareness (SSA) module, is set to have game-changing impacts on a number of fields, including Defence.

Using biologically-inspired event-based cameras – cameras that function like the eye and brain to overcome the limitations of exposure times and saturation – the Astrosite can capture objects in space with unprecedented temporal resolution, and during the day in real time.

According to Professor André van Schaik, Director of ICNS, the technique could be the key to making space a safer place.

“With tens of thousands of man-made objects currently orbiting in space, the risk of collision between debris, satellites and spacecraft is real. This has become a serious concern not only for organisations with a commercial interest in space, but also for national and international defence agencies.

“By using technology inspired by nature and biology, we have developed a dynamic imaging system that runs faster, computes more efficiently, uses far less power and produces less data than anything currently on the market,” Professor van Schaik said.

Defence application of this technology has already sparked interest, with the RAAF's Plan Jericho supporting the design and development of the Astrosite.

“The potential uses of this technology are endless. For example, the Astrosite can observe high-speed phenomena such as satellites and provide early warnings

“The Astrosite can capture objects in space with unprecedented temporal resolution”



The Astrosite is a mobile space situational awareness (SSA) module.

SALLYTSOUTAS

of potential collisions; allow the daytime recording of objects in low earth orbit; facilitate imaging in low-visibility environments; monitor space debris and allow the high-speed tracking of objects,” project research lead Associate Professor Greg Cohen said.

The Astrosite research team is based at the University’s International Centre for Neuromorphic Systems (ICNS).

New armour piercing round launched for F-35

Rheinmetall has launched a new munition product in Australia designed specifically for the F-35 Joint Strike Fighter.

The 25mm Frangible Armour Piercing (FAP) ammunition, which is already in service with the USAF, is designed to engage vehicles in air-to-ground engagement and aircraft in air-to-air engagements.

The ammunition combines high penetration performance, low dispersion, and handling safety.

“Unlike conventional aircraft ammunition, FAP cartridges do not ricochet”

“The 25mm FAP is a true all-purpose munition for the twenty-first century,” Rheinmetall Defence Australia Managing Director Gary Stewart said.

“Importantly, the FAP technology contains no explosives, ensuring maximum safety in the aircraft or in storage and transportation, as well as enabling it to be used in training.”

The 25mm FAP ammunition expands Rheinmetall’s munitions activities in Australia. The company is working with its munitions partner NIOA to establish and operate a \$60 million 155mm artillery [shell forging facility](#) in Maryborough, Queensland. The plant is designed to be able to manufacture steel artillery shell cases for the domestic and export markets.



Two Australian F-35s over the Hopi Reservation, Arizona, USA.

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The Queensland Government [recently announced](#) that it will contribute \$7.5 million towards the build.

The FAP round was specifically developed by Rheinmetall for NATO air forces to provide the F-35 a non-DU and non-HE cartridge to engage modern Infantry Fighting Vehicles (IFVs) at extreme slant ranges while still able to engage aircraft in air-to-air engagements.

Unlike conventional aircraft ammunition, FAP cartridges do not ricochet as the projectile core disintegrates upon impact.

PEOPLE ON THE MOVE

JFD has announced the appointment of a new non-executive Australian Chair to oversee its future growth and direction in the local defence sector. Allan du Toit, who completed full-time service with the RAN as a Rear Admiral in 2016 assumed the role on 1 March. "There are few people in Australia who bring Allan's depth of experience to a leadership role of this nature," JFD Australia Managing Director, Toff Idrus, said.



Industry aboard as Indo-Pacific Endeavour gets underway

Indo-Pacific Endeavour 19 (IPE 19), now in its third iteration, has commenced with the departure of HMA Ships *Canberra*, *Success*, *Newcastle*, and *Parramatta* from Fremantle.

Embarked ADF personnel will carry out a series of engagement activities and military training exercises during port visits in India, Indonesia, Malaysia, Singapore, Sri Lanka, Thailand and Vietnam.



HMAS *Canberra* departs the Port of Fremantle for Indo-Pacific Endeavour 2019.

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Attending the launch on behalf of Minister for Defence Christopher Pyne, Minister for Defence Industry Senator Linda Reynolds said she was pleased with the level of engagement planned with Australia's Indian Ocean Region partners over the next three months.

"The ADF enjoys a long-standing relationship with security forces throughout South and Southeast Asia," Minister Reynolds said.

"These relationships are strengthened by annual exercises and engagements, such as the Indo-Pacific Endeavour series."

IPE 19 will incorporate Australia's defence industry into the port visits.

"We are pleased to have the opportunity to demonstrate Australian Defence capacity across the spectrum of ADF activities during IPE19, with defence industry representatives participating to highlight their products and services," Minister Reynolds said.

Minister Pyne said building interoperability with key partners and improving coordination of humanitarian and security responses is a priority for Defence.

"IPE 19 is a major regional engagement activity for the ADF, which delivers on the promise of the 2016 Defence White Paper to strengthen Australia's engagement and partnerships with regional security forces," Minister Pyne said.

"Our strong and enduring relationships with regional militaries, governments and local communities are critical to this."

"We are pleased to have the opportunity to demonstrate Australian Defence capacity"

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Forthcoming Events

ADM EVENTS

More detail on **ADM** Events can be found on our dedicated website:

- [ADM Space Summit](#) – 30 April 2019
- [Women in Defence Awards](#) – 11 July 2019
- [ADM STEM and Defence Summit](#) – 14 August 2019
- [ADM Defence Estate and Base Services Summit](#) – 12 September 2019
- [ADM North Australian Defence Summit](#) – 23-24 October 2019

Lockheed Martin Australia Combat System Industry Forum #7

Date 19 March 2019

Location Engineering Australia – Level 31, 600 Bourke Street, Melbourne, VIC

Website <https://gateway.icn.org.au/>

Lockheed Martin Australia's Combat System Industry Forum #7 is focused on presenting the opportunity for Australian Industry to participate in an exciting and strategically important program to build and maintain an enduring and regionally superior Australian submarine capability. The forum will allow Engineering and Project Management Professional Services providers to inform industry on the internal resources/processes that the Combat System Integrator (CSI) already has in place.

What Does a Project Manager of the Future Look Like?

Date 28 March 2019

Location EAST Hotel, Canberra

Website [https://iccpm.com/events-2/
what-does-a-project-manager-of-the-future-look-like/](https://iccpm.com/events-2/what-does-a-project-manager-of-the-future-look-like/)

The future success of an organisation relies on the ability to manage a diverse body of talent that can bring innovative ideas, perspectives and views to their work. The challenge and problems created by workplace diversity can be turned into a strategic organisational asset if an organisation is able to capitalise on this melting pot of diverse talents. Come and join our ICCPM hosted Breakfast Panel Discussion where our panellists will be sharing their experiences and perspectives from different industries and positions on managing and leveraging diverse talents.

The National Police, Defence and Emergency Services Women's Leadership Summit

Date 29 March

Location Hyatt Hotel, Canberra

Website www.wla.edu.au

The National Police, Defence and Emergency Services Leadership Summit is a major annual event for women at all levels to connect, share ideas and build their

leadership skills. Created by Australia's leading authority on women's leadership, Women & Leadership Australia, the Summit has been developed in consultation with a broad range of stakeholders across these sectors.

Export Control Training Session

Date 03 April 2019

Location 60 Clarence St, Sydney

Web <https://www.stickytickets.com.au/81012>

Join us for a 1-day face-to-face training course to de-mystify the complex area of Export Control regulations. The course will address an overview of the ITAR, EAR, and DEC; how the ITAR and EAR apply to all areas of your business; advice on employing dual and third country nationals; licensing and permit requirements; and more.

Williams Foundation – Seminar: Hi-Intensity Operations and Sustaining Self Reliance

Date 11 April 2019

Location National Gallery of Australia – ACT

Website <http://www.williamsfoundation.org.au/event-3159758>

Since 2013 the Sir Richard Williams Foundation seminars have focused on building an integrated fifth generation force. In doing so they have, among other things, highlighted the challenges of making the strategic shift from counterinsurgency operations in Iraq and Afghanistan to higher tempo and higher intensity operations involving peer competitors. Allies are crucial to the Australian concept of defence; however, the emerging strategic circumstances demand it is vital we reconsider the ways and means of enhancing Australian sovereignty to better contribute to our relationships and ensure a more sophisticated and independent defence of Australian interests. During the 2019 seminars, the Sir Richard Williams Foundation will develop this theme and address more broadly the question of how to look at the evolution of the Australian Defence Force from the perspective of the sovereign lens and setting the conditions for future success.

Defence Synthetic Environment Working Group (SEWG)

Date 15 April

Location QT Hotel – Canberra

Website

Established as a government and industry communication forum; the requirement for the SEWG has evolved into an interactive working group exploring innovative uses of Modelling and Simulation (M&S) and investigate the future for emerging M&S technologies. Additionally, the SEWG represents an opportunity to explore how to integrate the M&S Industry as part of the ninth Fundamental Input to Capability.

ASPI China Masterclass – Canberra

Date 15 Apr 2019

Location Hotel Realm

Website <https://www.aspi.org.au/>

The ASPI China masterclass is a one-day intensive event that will give participants a strategic understanding of how China is seeking to shape the world around it. Participants will learn and debate with specialists on China with deep knowledge of the current security, political and thematic landscapes. The Masterclass will track China's global and regional ambitions, and review the Chinese Communist Party's (CCP) investments in cyber, intelligence, defence, space & social credit. This event will offer a deeper understanding of China, the CCP and its rapidly evolving place in the world and explore the policy implications for Australia and the Indo-Pacific region more broadly.

ASPI China Masterclass – Melbourne

Date 17 April 2019

Location Melbourne

Website <https://www.aspi.org.au/>

The ASPI China masterclass is a one-day intensive event that will give participants a strategic understanding of how China is seeking to shape the world around it. Participants will learn and debate with specialists on China with deep knowledge of the current security, political and thematic landscapes. The Masterclass will track China's global and regional ambitions, and review the Chinese Communist Party's (CCP) investments in cyber, intelligence, defence, space & social credit. This event will offer a deeper understanding of China, the CCP and its rapidly evolving place in the world and explore the policy implications for Australia and the Indo-Pacific region more broadly.

BMT's Introduction to Fleet Life Cycle Management (Perth)

Date 01-05 May 2019

Location Perth

Website <https://www.bmt.org/training/introduction-to-fleet-life-cycle-management-course/>

BMT's, five-day Introduction to Fleet Life Cycle Management course covers all aspects of naval life cycle management. The modules provide detailed insight into Asset Management and its applications to naval ships and support systems in Defence's maritime environment.

IMDEX Asia 2019

Date 14-16 May

Location Changi Exhibition Centre, Singapore

Website imdexasia.com

Coming to its 12th edition, the biennial IMDEX Asia is Asia Pacific's premier international maritime defence show and a must-attend event in the global naval and maritime security calendar. With established conferences and real-time discussions on maritime security, IMDEX Asia draws a plethora of global leaders and distinguished guests.

AusCERT Conference 2019

Date 28-31 May

Location Surfers Paradise Marriott, Gold Coast Australia

Website <https://conference.auscert.org.au>

The AusCERT Conference is the oldest information security conference in Australia. Each year, we attract in the vicinity of 700 participants and approximately 50 sponsors. This year's conference is focused on gaining as many tools for you and your team's toolbox as possible to ensure you are armed and ready for any battle you may face.

Paris Air Show

Date 17-23 June 2019

Location Le Bourget

Website

The 53rd Paris Air Show will once again bring together all the players in this global industry around the latest technological innovations. The first four days of the Show will be reserved for trade visitors, followed by three days open to the general public.

PGCS 2019

Date 20 – 22 August 2019

Location The Canberra Rex Hotel, Canberra

Website <https://www.pgcsymposium.org.au>

Now in its 7th year, PGCS 2019 will focus on ways to build the foundations needed to create project and program success. Creating the organisational capability needed to underpin the consistent delivery of successful projects in the 2020's starts at the top. Leadership and a sustained focus are required to build a culture of excellence that can balance innovation with surveillance and accountability, encourage learning, and manage knowledge effectively.

Australasian Simulation Congress

Date 2 – 5 September 2019

Location Gold Coast Convention and Exhibition Centre, Gold Coast

Website www.simulationcongress.com

The Australasian Simulation Congress provides a focused opportunity for industry development, business growth, training, discussion and distribution of information related to Simulation, Modelling, Training and Decision Support. Simulation Australasia can help you directly engage with industry, policy makers, Government and relevant stakeholders to facilitate you and your organisation achieving the success only a truly international Congress can provide.

Australian Cyber Conference 2019

Date 7-9 October 2019

Location Melbourne Convention and Exhibition Centre

Website <https://cyberconference.com.au>

The Australian Cyber Conference 2019 will provide business leaders with insights and best practices taught by the industry's top experts through keynotes, panel sessions and live demonstrations. Attending the conference will enable you to network with these practitioners to help you better understand and manage current threats, as well as identify and prepare to meet emerging challenges.

Pacific 2019

Date 8-10 October 2019

Location Sydney Convention Centre

Website <http://www.pacificexpo.com.au/>

As the only comprehensive international exhibition of its kind in the Indo-Asia-Pacific region, PACIFIC 2019 will again provide the essential showcase for commercial maritime and naval defence industries to promote their capabilities to decision-makers from around the world.

MilCIS 2019

Date 12-14 November 2019

Location Canberra Convention Centre

Website <http://www.milcis.com.au/>

In November each year, the Defence Chief Information Officer Group (CIOG) partners with the UNSW Canberra and the Institute of Electronic and Electrical Engineers (IEEE) to present MilCIS. The annual Military Communications and Information Systems (MilCIS) Conference welcomes military and government organisations, academia, and defence industries to contribute to the future direction of military communications and information systems.

Land Forces 2020

Date 1-3 September 2020

Location Brisbane Convention Centre

Website <http://www.landforces.com.au/>

The biennial LAND FORCES exposition is an international industry event to showcase equipment, technology and services for the armies of Australia and the Indo-Asia-Pacific. The Land Forces 2020 team is now setting about ensuring the event will achieve its goals of providing an effective platform for the exchange of ideas on key land forces issues and of taking Australian industry to the world.