

ADM **DEFENCE WEEK** AUSTRALIAN DEFENCE MAGAZINE SERVING THE BUSINESS OF DEFENCE **PREMIUM EDITION**



Soldiers will soon have an immersive experience before going into battle.

DEFENCE

Information age warfare in 2025

Naomi Thomas | Canberra

One of the topics covered in depth at ASPI's War in 2025 conference was information operations. What role will cyber, space and electromagnetics play in the 2025 timeframe?

As the technological era evolves, the gaps in Defence's information warfare strategy are showing, as highlighted in [General Angus Campbell's speech](#) on the issue. As the US and China are technologically and analytically preparing for a potential war, they are honing their digital tactics, techniques and procedures (TTPs). Will Australia be prepared for a cyber or space war in 2025?

Vice Chief of the Defence Force Vice Admiral David Johnston announced the Department is undertaking

IN THIS ISSUE

| | |
|--|-----------|
| Information age warfare in 2025 | 1 |
| The hangars on the Hunter class frigates are inadequate | 3 |
| Time to revisit the north: ASPI | 5 |
| DST seeks greater role in enforcing chemical weapons ban | 7 |
| New RAAF chief takes the pilot seat | 8 |
| New cyber defence centre launched in SA | 9 |
| Forthcoming Events | 12 |

the nation's first mobilisation strategy review since WW2. This will include a range of factors that were not in play during WW2, such as the rise of the Internet of Things and the resilience of sovereign capabilities and their relative capacities. Space will also feature heavily in this effort.

"A cyber 9/11 could have happened and we wouldn't even know about it," VADM Johnston said. "We need to build into our forces resistance and stability, and improve our ability to act independently. Mobilisation is key."

Space is not an untouched sanctuary and is a war-fighting domain, according to Senior ASPI analyst Dr Malcolm Davis.

"A war in space would create a larger war as everyone can access it," Dr Davis said.

China is seeking to become a global leader in space. China is aiming to establish a power station in space by 2025 and one megawatt-level [solar facility](#) in space by 2030.

"China is preparing for space warfare," Dr Davis said. "China could stage a space Pearl Harbour in order to cripple capabilities as part of a wider campaign."

If China's declared space goals are successful, it may be the only country to have an active space station after the US.

"Cyber attacks on satellites will cause major issues," Dr Davis said. "We need to start thinking of astro-policies and astro-strategies."

Hyper warfare is injecting commercial technologies into military technology, according to Microsoft's Defence and Intelligence Solutions Manager Jamie Wylly. Hyper warfare can improve any existing military system and add revolutionary approaches to potential conflict.

"Computing will advance how you live your life and how we win the battle," Wylly said. "We'll move war games into a virtual experience, and gamify cyber security training for young people and how they want to work."

"Virtual reality technology will redefine military training institutions for soldiers to have an immersive experience before going into the battlefield.

"We need to embrace new technology."

Communications and connections have never been closer: Social media is a communication revelation that some individuals and organisations have weaponised.

"We are at war with ourselves," Charles Sturt University's Nicole Matejic said. "Social media is a fuel to the fire. Echo chambers amplify discord."

There is nothing to suggest that social media is a widespread problem by its own nature, but rather, the nature of individual decisions can be a problem. With the increasing speed of technology evolution, policy can become out-dated quickly.

"Leaders must demonstrate values-led decision making," Matejic said. "2025 will look much like today – or worse – if we do not address the fundamental societal issues that make information operations campaigns successful for agents of influence."

"A cyber 9/11 could have happened and we wouldn't even know about it"

The hangars on the Hunter class frigates are inadequate

DJAC | Online

The RAN may be going forward with UAVs, but the hangar facilities on its new destroyers and pending frigates are going backward from those of the

obsolescing Adelaide class. The design for the nine Hunter-class ASW frigates should be modified with the planned main and smaller UAV doorways on the stern end of the hangar replaced by two wide side-by-side doorways.

“The flexibility provided by side-by-side doors would allow joint operation of an ASW helicopter with a large UAV”

Press images suggest that the Hunter-class, which is derived from the British Type 26, has hangar arrangements tailored to satisfy the Royal Navy (RN), which routinely operates with one ASW helicopter per escort. Those arrangements are fundamentally inadequate for sub hunting and the wide area needs of the RAN where two ASW helicopters are more than [twice as useful as one](#). The proposed hangar arrangements would similarly limit the manner in which a manned ASW helicopter could be operated in conjunction with a UAV large enough to be equipped with ASW sensors and weaponry.

The problem with the Type 26 design

The rear superstructure of the RN's Type 26 frigate includes separate hangar doorways for ASW helicopters and UAVs. One helicopter is stowed and maintained in a hangar on the centreline of the hull and is moved onto the flight deck via a doorway closed by a roll-up shutter. A smaller shuttered doorway to starboard, and possibly another small portside doorway, are provided for UAVs. Both shoulders of the whole beam superstructure are cut away to provide a short deck and a lightweight 30mm DP gun to port and starboard.



A redesigned hangar on the Hunter class could store two MH-60R helicopters instead of one.

DEFENCE

At the forward end of the main hangar, a centreline doorway is provided so that a second helicopter can be moved into a mid-ship mission bay. That bay is also intended for stowing up to four side-loaded rigid hull inflatable boats and other cargo. Storing a second helicopter in that bay would pre-empt much of its space, and moving the second helicopter – or a large UAV – back out for use could necessitate an awkward shuffling of both onto the flight deck and then transposing the stern-most back into the hangar.

Side-by-side doors are future proof

Embarking two ASW helicopters on a fleet combatant is standard practice in several navies. The Adelaide class frigates can hangar two SH-60 Seahawks side-by-side on a 139 metre hull with a maximum beam of 14 metres. Modern multi-role frigates are larger. The Italian version of the FREMM frigate has a double

hangar with side-by-side doors designed to hold two SH-90 ASW helicopters or one SH-90 and one AW101 Merlin. That frigate has a hull length of 145 metres and a beam of 19.7 metres.

The SH-90 is the Italian ASW version of a medium size helicopter that is also in service with the RAN as the MRH-90 Taipan. It is not known which UAVs are embarked on the Italian frigate. But with the exception of helicopters converted for unmanned use, most in-service UAVs employed by NATO navies are small and readily moved, and probably stowed in hangar spaces shared with helicopters. Moreover, the flexibility provided by side-by-side doors would allow joint operation of an ASW helicopter with a large yet-to-be developed sensor and weapon-carrying UAV.

The RAN does not employ the AW101 Merlin but instead uses the MH-60R Seahawk, which is slightly smaller than the AW101. With its main rotor folded rearward and tail boom folded against the portside of its fuselage, the MH-60R occupies a cube 12.51 metres long by 3.35 metres wide and 3.94 metres high. The Hunter class has a hull length of 150 metres and a maximum beam of 20.8 metres. That beam is clearly adequate for a whole beam double hangar with two wide side-by-side doors and two medium-size ASW helicopters stowed one to port and one to starboard.

The Schiebel S-100 Camcopter occupies a cube about 3.3 metres long by 1.12 metres wide and 1.24 metres high. At that size a Hunter-class frigate could stow two or more UAVs on the hangar centreline for ready movement around a MH-60R and out through either of the side-by-side doorways. A more capable surveillance UAV with sonar/sonobuoy and weapons would be much larger, but no such purpose-designed UAV is yet in service with a NATO or affiliated navy. It is worth noting that the RAN reportedly intends to procure a UAV that will also be small enough to be operated from the Arafura class OPVs.

Conclusion

In short: to operate a mix of ASW helicopters and UAVs, the design of the Hunter class needs to be modified to have a double hangar with two doors. Each must be large enough for a MH-60R or similar helicopter (or a large UAV) and small UAVs stored on the centreline. The hangar arrangements and roof/hoist supports

“That beam is clearly adequate for a whole beam double hangar with two wide side-by-side doors”

would need modification for stowage and movement of the helicopters and UAVs. Those modifications might preclude stowage of a helicopter or large UAV in the mid-ship mission bay, but that limitation might not apply to small UAVs. If either limitation did apply, it would enhance availability of the bay as a garage for RHIBs and containers/stores.

This is more than enough words to establish the basics; the hangar arrangements planned for the Hunter class are inadequate and need to be thoroughly revised.

Note: This article originally appeared [as a comment](#) on our website.

Time to revisit the north: ASPI

Ewen Levick | Sydney

Intellectual preparations for the war of the future continue unabated at ASPI with the release of a [new report](#): North of 26 degrees south and the security of Australia.

The report is a series of articles written for The Strategist and opens with an introduction by Paul Dibb, who explains the background to the famous 1986 Dibb Review that later heavily influenced the 1987 Defence White Paper. Interestingly, Dibb reveals that the real reason he was asked to write the review was to reconcile major differences between the Secretary and the Chief of the Defence Force, who were engaged in a 'hostile' debate involving 130 memos on the 'theology of defence policy.'

The review prioritised the territorial defence of Australia, advocating for an increased Army and Air Force presence across the north and a redeployment of Navy assets to better protect Australia's maritime approaches. The force posture



Members of 51st Battalion, Far North Queensland Regiment conduct a patrol and surveillance exercise off Thursday Island in the Torres Strait.

DEFENCE

Dibb advocated was designed to protect Australia against an attack by Indonesia, which at the time had the world's third largest communist party and a modern submarine and bomber force provided by the Soviet Union.

Dibb was criticised particularly from Army quarters for hollowing out expeditionary capability in favour of territorial defence, although Dibb could not have foreseen the decades of expeditionary operations in southeast Asia and the Middle East that followed the collapse of the Soviet Union only a few years later. Navy also resisted the paper's argument that it should shift submarine operations to Fremantle because of the likely difficulty in recruiting submariners from the east

coast; a problem that echoes today as HMAS *Perth* remains in dry dock due to crewing shortages.

33 years after Dibb's review, the threat is China. Michael Shoebridge notes that the argument remains as 'simplistic' as ever, divided between those that have a sense of 'paranoia' about defending the north and those 'defeatist' types that would see the ADF withdraw south in the event of conflict. Reality, Shoebridge argues, is more complex. Power projection cannot escape geography, and so proximity still matters – not just for the defence of

the north itself, but also for the ADF's ability to project power further north to meet the challenge from China.

Len Notaras uses the example of the National Critical Care and Trauma Response Centre in Darwin as a demonstration of the importance of location and preparedness. The Centre has conducted pioneering work in emergency medical assistance, setting standards now used by the World Health Organisation globally.

Genevieve Feely argues that whilst LNG is becoming a major export from the north to meet soaring demand in Asia, the product will lose out to renewables in the next three decades. This, Feely argues, requires forward thinking to build Australia's renewables sector and maintain a market-leading position in energy exports.

Other submissions include a piece from Michael Crane, who notes that the expanding US force presence in the NT has largely gone well, although neither side should take the 'social license' to operate for granted; from Chris Clarke, who writes on why Indigenous Australians are over-represented in units tasked with defending the north and how to improve Indigenous participation in industry projects; and from John Coyne, who notes the gap between Defence's declaratory policy on the north and its actual presence.

"Power projection cannot escape geography, and so proximity still matters"

MOST READ ONLINE AT WWW.AUSTRALIANDEFENCE.COM.AU



1. [Two ships decommission at Garden Island](#)
2. [Rheinmetall and BAE join forces on British Boxers](#)
3. [Schiebel Pacific opens Australian office](#)
4. [The rise of the robot in Defence](#)
5. [Bids open for Hunter class prototypes](#)



DST develops methods to accurately analyse chemical warfare agents to enforce global bans on their use.

DEFENCE

DST seeks greater role in enforcing chemical weapons ban

Since WW1 when more than 90,000 soldiers suffered agonizing deaths from exposure to chlorine, phosgene, mustard gas and other chemical agents, and close to a million others were left with debilitating injuries, chemical weapons have been abhorred by most countries and are broadly regarded as being an unnecessarily cruel and unfair method of warfare.

However, despite almost universal condemnation, the threat of chemical warfare continues to exist.

DST scientists have supported international efforts to obtain a total and comprehensive ban on the development, production, stockpiling and use of chemical weapons since the early 1980s. These efforts have included providing scientific advice to diplomats from the Department of Foreign Affairs and Trade during the negotiation of the Chemical Weapons Convention, and, later, supporting the Organisation for the Prohibition of Chemical Weapons (OPCW), the international agency tasked with the implementation of that convention.

A critical part of the support provided by DST is the development of methods to accurately analyse chemical warfare agents and their degradation products. This analysis capability is necessary for the effective verification of the provisions of the Chemical Weapons Convention, including the destruction of all existing stockpiles of chemical weapons and investigations into their alleged use.

One way in which the OPCW has ensured that it can maintain a capacity to investigate allegations of chemical weapons use is through the establishment of a network of OPCW designated laboratories. Designated laboratories must be able to rapidly and accurately

“The samples we receive may be spiked with compounds at concentrations as low as 4 parts per billion”

perform analysis of chemical samples collected by OPCW inspectors from suspected chemical weapons production facilities, storage depots or sites of alleged chemical weapons incidents.

DST is one of a relatively small number of laboratories among the 193 member states of the Chemical Weapons Convention that has earned the status of 'designated laboratory' with the OPCW, achieving designated laboratory status for the analysis of biomedical samples (plasma and urine) in 2016.

According to the leader of DST's Chemical and Biological Verification Team, Dr Craig Brinkworth, in order to become designated, nominated laboratories are required to participate in rigorous proficiency testing.

"To achieve and maintain designated status for biomedical samples, we must successfully complete annual proficiency testing across two consecutive tests. Failure of any subsequent test results in loss of this status," Brinkworth said.

The team is given 15 days to analyse samples and report their results.

"The samples we receive may be spiked with compounds at concentrations as low as 4 parts per billion, so we need to be sure that our techniques are both sensitive and accurate," Brinkworth said.

DST is now working towards achieving designated laboratory status for the analysis of environmental samples.

"Unlike biomedical samples where we are measuring for evidence of exposure to a small number of select agents, when we analyse environmental samples we are measuring for the possible presence of a large number of different chemical warfare agents and their related products," Dr Brinkworth said.

Dr Brinkworth and his team are now waiting for the legal agreements to be put in place to enable them to start receiving samples obtained during OPCW inspections.

New RAAF chief takes the pilot seat

The RAAF has welcomed its new Chief, Air Marshal Mel Hupfeld, during a ceremonial parade and flypast in Canberra this week.

Outgoing Chief of Air Force Air Marshal Leo Davies said it has been a privilege to lead the RAAF for the last four years.

**"It is humbling
to have been
chosen to lead"**

"I have been fortunate to have spent most of my life in this wonderful institution with its long record of service to our nation," AIRMSHL Davies said.

"I am grateful for the tireless support of my family throughout my career, and for the dedication and commitment of all the men and women of the RAAF during my time as Chief."

AIRMSHL Hupfeld said it was both an incredible honour and a substantial responsibility to be taking over command of Air Force.

"Our people are the key to our capability, and it is humbling to have been chosen to lead them," AIRMSHL Hupfeld said.

"I am grateful for the enduring legacy of AIRMSHL Davies' leadership, with today's RAAF on a strong and solid vector for the future."

AIRMSHL Hupfeld has served in the RAAF for almost 40 years. He was



Air Marshal Leo Davies presents Air Marshal Mel Hupfeld with Sir Richard Williams' sword during the ceremonial parade. DEFENCE

awarded the Distinguished Service Cross (DSC) in recognition of his performance as Commanding Officer of Number 75 Squadron on Operation Falconer, and his Squadron was awarded a Meritorious Unit Citation.

AIRMSHL Hupfeld has commanded Air Combat Group, posted as Air Commander Australia and Head Force Design. He received an appointment as Officer of the Order of Australia (AO) for distinguished service to the ADF in senior command and staff appointments.

Prior to being appointed Chief of Air Force, AIRMSHL Hupfeld served as Chief Joint Operations.

Earlier this year, AIRMSHL Leo Davies told *ADM* that he is proud of two achievements during his tenure; getting RAAF to 'open the aperture' to the art of the possible, and successfully delivering the first two F-35s to Australia.

New cyber defence centre launched in SA

Foreign meddling in democratic elections, the proliferation of fake news and threats to national security through the 'weaponisation of social media' will be tackled by a new research Centre launched last week at Flinders University.

The Jeff Bleich Centre for the US Alliance in Digital Technology, Security, and Governance will be the first research centre in Australia to adopt a multidisciplinary approach to social science by bringing together the three key areas of technology, security and governance.

The Centre will undertake research in areas of mutual concern to Australia and the US to improve the capacity of governments and industry to respond to these cyber challenges and threats.

This includes digital media manipulation in fostering divisions in civil society, challenging national security and contesting democratic governance.

The Centre's launch coincides with the release of the latest Lowy Institute Annual Poll ranking cyber security as the most significant threat to Australia's vital interests after climate change.

The Jeff Bleich Centre is named in honour of Ambassador Jeff Bleich, Special Counsel to President Barack Obama and a diplomat who served as Ambassador to Australia from 2009 to 2013.

According to Vice-Chancellor Professor Colin Stirling, the Centre will create opportunities for industry, particularly defence, government and NGOs to work with Flinders University to address current and emerging issues in cybersecurity.

"It will consolidate Flinders University's research expertise and strengths in digital technologies, security and governance, and build upon Flinders existing strengths in US policy studies and the university's strong US alliance," Professor Stirling said.

"The Jeff Bleich Centre will undertake research to identify reforms, including regulatory models, that preserve the gains of the digital revolution, but enhance the protection of democratic freedoms, and restore trust in the institutions of democratic societies."

The digital revolution has initiated societal change on a scale comparable to the invention of the printing press and the arrival of the industrial revolution, but while the cyber revolution offers incalculable benefit, there have also been high costs.

The disruptive costs of the digital revolution on democracy have been high,



Attacks include efforts to impair individual, corporate and government decision-making through information campaigns. THINKSTOCK

largely unanticipated and only recently addressed as some have escalated into crises.

“The disruptive costs of the digital revolution on democracy have been high”

Ambassador Bleich says these have included deliberate efforts to impair individual, corporate and government decision-making through corrupt, distorted, or false information campaigns.

“We know that the advent of digital technology has fundamentally changed the way we each work, eat, shop, and live. But it has also changed our societies and how we defend ourselves.

“Our nations — both separately and together—must operate in new ways to preserve our values and protect our people and allies in new battle spaces.

“This is the mission of the Jeff Bleich Centre for the US Alliance in Digital Technology, Security, and Governance.”

CONTACT DETAILS

MANAGING EDITOR

Katherine Ziesing
T: 0419 014 308

katherineziesing@yaffa.com.au

ONLINE EDITOR

Ewen Levick
T: 02 9213 8249

ewenlevick@yaffa.com.au

ASSOCIATE PUBLISHER

Kylie Leonard
T: 07 3087 5101

kylieleonard@yaffa.com.au

ART DIRECTOR

Ana Heraud

SUBSCRIPTIONS

Martin Phillpott
Toll Free 1800 807 760

martinphillpott@yaffa.com.au

CONTRIBUTORS

Julian Kerr
T: 0418 635 823

jhrhkerr@bigpond.net.au

Nigel Pittaway

M: 0418596131

cnpittaway@bigpond.com

Copyright © 2019



PUBLISHED BY

Yaffa Media Pty Ltd
17-21 Bellevue St,
Surry Hills NSW 2010
T: 02 9281 2333

www.greatmagazines.com.au

ADM CANBERRA OFFICE

PO Box 4783, Kingston ACT 2604
T: 02 6203 9535

ADM BRISBANE OFFICE

PO Box 9165,
Wynnum Plaza Qld 4178
T: 07 3348 6966

www.australiandefence.com.au

SUBSCRIPTIONS GREATMAGAZINES.COM.AU **CALL** 1800 807 760 **EMAIL** SUBSCRIPTIONS@YAFFA.COM.AU

All material appearing in ADM is copyright. Reproduction in whole or in part is not permitted without permission in writing from the publisher. The publishers accept sole responsibility for the contents of this publication, which may in no way be taken to represent the views of the Department of Defence, the Australian Defence Force or any other agency of the Commonwealth of Australia.

Forthcoming Events

ADM EVENTS

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

- [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

The Future of Australia-Indonesia Relations in a Contested Indo-Pacific Order

Date 05 July 2019

Location Tattersalls Club, Brisbane

Website www.rusi.org.au/event-3331760

This seminar is RUSI Queensland's blue-ribbon event for 2019. Constant examination of the Australia-Indonesia bilateral relationship is required to understand the dynamic shifts in political, diplomatic and social foundations of these two close neighbours. This year provides a special opportunity to recalibrate the strengths and weaknesses in this key regional relationship.

Women in Emergency Services, Enforcement & Defence Leadership Workshops

Date 9-10 July, 24-25 July, 30-31 July

Location Sydney, Brisbane & Adelaide

Website www.eventbrite.com.au/e/women-in-emergency-services-enforcement-defence-leadership-workshop-tickets-59135290245

The Defence Force, Emergency Services and Enforcement agencies are the cornerstone of a functional society, ensuring the health, safety and wellbeing of the communities they serve. The high pressure and ever-changing nature of this work requires a unique blend of reactive and proactive leadership skills and an awareness of not only how to deal with a situation, but to ensure the safety and wellbeing of your team. This two-day workshop explores resilience, stress and confidence as weapons in the leadership arsenal, and will give you the ability to apply them to their own behaviours and work.

Women in Defence Industry Panel Discussion and Report Launch

Date: 11 July 2019

Location: Parliament House

Website: www.eventbrite.com.au/e/63362167950

If defence industry is to meet the projected growth in demand for skilled workers, it must become an employer of choice for all segments of the workforce. This

means finding new ways to attract and, just as importantly retain, women with critical skills. Facilitated by Dr Samantha Crompvoets, the panel will discuss challenges and opportunities for defence industry organisations – from four different vantage points – as they reflect on career choices, and/or prepare their workforce and workplace to take advantage of these growth opportunities.

AIDN QLD Annual Gala Dinner 2019

Date 18 July 2019

Location Figs on Sylvan Toowong, Brisbane

Website www.eventbrite.com.au/e/2019-aidn-qld-annual-gala-dinner-tickets-61677344598

Join guests from across the Australian SME community, Defence Primes, Defence Force and industry organisations for an evening of unmissable entertainment, great food and wine. The event will feature keynote and guest speakers from Defence and Industry.

Defence Maritime Environment Working Group

Date 24 July 2019

Location National Gallery of Australia, Parkes, Canberra

Website www.business.gov.au

The Maritime Environment Working Group (MEWG) is a forum for engagement between Defence and the Maritime Industry to consider opportunities for innovation and collaboration early in the capability life cycle. It provides an opportunity to test the strength of capability requirements and proposals, to inform industry regarding future capability programs and challenges and to foster the development of Navy's capability modernisation program.

ADM Essington Lewis Awards

Date 31 July 2019

Location National Convention Centre, Canberra

Website www.defence.gov.au/casg/dplusi

ADM's Essington Lewis Awards will return to the National Convention Centre on Wednesday 31 July 2019 to recognise excellence in Defence projects. The event is limited to the first 1000 attendees wishing to network and interact with Defence and defence industry leaders, celebrate the achievements of their peers and be entertained by our celebrity MCs. This black tie gala event is not to be missed!

Defence + Industry Conference

Date 01 August 2019

Location National Convention Centre, Canberra

Website www.defence.gov.au/casg/dplusi

The Defence + Industry Conference is the premier Defence and industry conference held in the national capital. Consistently attracting in excess of 1100 delegates to hear from Defence and industry leaders discussing collaboration in the acquisition and sustainment space. Thursday 1 August will see the National Convention Centre come alive with informative, thought-provoking presentations

from Defence decision makers and industry leaders, along with interactive Q&A sessions and networking opportunities.

DST Scindicate 2019: Partnering for Impact

Date 15-16 August

Location Adelaide, SA

Website Scindicate@dst.defence.gov.au

Once again, industry, universities and research agencies are invited to participate in the two-day activities which will include technology demonstrations, business matchups, workshops, briefings and laboratory tours, as well as opportunities for networking and forging new collaborations. A Next Generation Technologies Fund Showcase will be a special feature of the event.

PGCS 2019

Date 20 – 22 August 2019

Location The Canberra Rex Hotel, Canberra

Website 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.

Hunter Defence Conference 2019

Date 23 August

Location Crown Plaza Hunter Valley

Website www.trybooking.com/book/event?eid=503298

The 2019 10th anniversary Hunter Defence Conference will focus on driving collaboration between Defence Primes, NSW regional SMEs, academia and the Department of Defence. Key presentations at this year's conference will include capability development staff from Army, Navy and Air Force Headquarters, Defence Primes articulating the support requirements they will have over the coming decade from regional SMEs. Former Minister for Defence Christopher Pyne will present a keynote at the dinner.

Australasian Simulation Congress

Date 02 – 05 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.

Synthetic Environment Working Group (SEWG)

Date: 06 September 2019

Location: Gold Coast Convention and Exhibition Centre

Website: www.defence.gov.au

The Synthetic Environment Working Group (SEWG) 2019 is a one-day Conference/Working Group sponsored by the Department of Defence, ADSTC and managed by the Simulation Governance Directorate.

Army Innovation Day 2019

Date: 25 September, 2019

Location: Adams Auditorium, ADFA

Website: <https://www.army.gov.au/>

AID19 will be held on Wednesday, 25 September 2019 and the purpose is for selected respondents to diSchiebel Pacific ay and pitch their proposed innovations to assessors, Capability Managers and Defence Innovation Hub personnel. Respondents may also be able to verify, validate and clarify their Request for Proposal response. Request for Proposal submissions closes on 3 September 2019 and on 12 October 2019 respondents will be notified of outcomes.

Australian Cyber Conference 2019

Date 07-09 October 2019

Location Melbourne Convention and Exhibition Centre

Website 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 08-10 October 2019

Location Sydney Convention Centre

Website 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.

2019 Parari Australian Explosive Ordnance Safety Symposium

Date 05-07 November

Location ADFA

Website parari@defence.gov.au

This year's symposium brings together delegates from around the world to discuss the latest innovations and advances in explosives, munitions and weapons safety. International and local experts from industry, academia, military and

government will share their research to explore Explosive Ordnance Safety opportunities and challenges as a community.

MilCIS 2019

Date 12-14 November 2019

Location Canberra Convention Centre

Website 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.

SubSTEC 5 Conference

Date 18-21 November

Location Esplanade Hotel, Fremantle

Website www.submarineinstitute.com

The 5th Submarine Science, Technology and Engineering Conference (SubSTEC 5) will be held at the Esplanade Hotel, Fremantle, WA 18th-21st November 2019. The theme of the Conference will be: 'Innovation and Investment in the Sub-Sea Environment'. SubSTEC5 will be held with the support of the Institute of Marine Engineering, Science and Technology (IMarEST).

Corrosion and Prevention 2019

Date 24-27 November

Location Crown Promenade, Melbourne

Website conference.corrosion.com.au

Corrosion and Prevention 2019 will bring together leading researchers and industry practitioners who combat corrosion daily. Diverse technical streams will showcase the latest developments in corrosion, ranging from fundamental corrosion science to hands-on application.

Rotortech 2020

Date: 16-18 June 2020

Location: Royal International Convention Centre, Brisbane

Website: <https://www.rotortech.com.au/Index.asp>

RotorTech 2020 is the region's premier helicopter and unmanned flight systems showcase and forum, bringing together operators, manufacturers, suppliers, regulators and government across the Indo-Asia-Pacific. With a comprehensive three-day free industry conference program, RotorTech 2020 will also feature manufacturers technical workshops and an industry exhibition showcasing more than 100 helicopter and unmanned flight related companies.

Land Forces 2020

Date 01-03 September 2020

Location Brisbane Convention Centre

Website 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.