National Security Conference
Special Issue

Chief of Air Force
Exclusive interview

Defence-Industry
innovation culture

Star Wars:
Militarisation of Space

Defence Strategic
Policy Statement released

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Editor’s Note

Welcome to the Winter 2018 issue of Line of Defence Magazine. With this issue, we’re proud to be celebrating two years – and eight issues – of Line of Defence!

I’d like to take this opportunity to especially thank our expert contributors – leaders in their fields in academia, business, government and the military, and the driving force behind the magazine’s recognition as the premier publication for New Zealand’s defence and national security sector.

In Defence, much has happened in recent weeks, not least the release of the Defence Strategic Policy Statement and the Review of Defence Procurement Policies and Practices for Major Capability Projects. There’s also been the announcement that the government will be purchasing four P-8A Poseidons, putting an end to a long run of speculation. In this issue we offer some initial perspectives on the DSPS.

Weighing in on procurement, Hon. Dr Wayne Mapp talks capability projects, and we are again joined by Minister of Defence Hon. Ron Mark and opposition spokesperson Hon. Mark Mitchell who offer contending views on what we can expect in this space. Please bear in mind that these articles were penned prior to both the release of the DSPS and the P-8A announcement.

In the latest instalment of his services chiefs series, Dr Peter Greener interviews Chief of Air Force AVM Tony Davies about the important challenges facing the RNZAF; Nicholas Borroz looks at the militarisation of space; and we interview figures at the forefront of Defence-Industry partnership and innovation on both sides of the Tasman: NZDF Chief Joint Defence Services Charlie Lott and CAPT Greg Laxton of the Royal Australian Navy.

In this National Security Conference special issue of Line of Defence, we feature a specially curated collection of articles arising from presentations at the recent National Security Conference hosted by Massey University’s Centre for Defence and Security Studies. Special issue guest editor Dr William Hoverd has brought together a fantastic line-up headlined with an address by Justice Minister and Minister Responsible for the GCSB and NZSIS, Hon Andrew Little.

Among the articles, Dr John Battersby discusses counterterrorism in New Zealand, Dr Bryson Pain explains the expanding role of cyber in national security, Josie Pagani looks at the Pacific Reset, Dr Scott Hauger considers the security implications for New Zealand of climate change, Dr Reuben Steff weighs in on North Korea, and that’s just for starters.

Our Spring issue will be at the NZDIA Annual Forum again this year, and we’ll be previewing some of the best bits with commentary from the NZDIA and features with several key presenters. To be held this year in Palmerston North, the forum is set to be bigger than ever, encompassing the important roles that Defence, Industry and a range of government agencies play in national and regional security.

See you there!

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Olympus launches new portable, powerful videoscope

Olympus is pleased to announce the launch of the IPLEX G Lite industrial videoscope featuring powerful imaging capabilities and a small, rugged body. Lightweight and able to go almost anywhere, the IPLEX G Lite videoscope provides users working in challenging environments with a remote visual inspection tool that has the image quality and ease of use to get the job done.

The IPLEX G Lite is the successor to the compact and lightweight IPLEX UltraLite model, and can be used to capture images inside aircraft engines, piping, and other equipment without the need for disassembly. With two times the brightness of its predecessor, the IPLEX G is also suitable for a variety of applications within the security industry and clean energy sector, including wind turbines.

According to Jack Zhang, RVI Product General Manager at Olympus Asia Pacific, “Recent years have seen an increasing emphasis on safety management and quality assurance in fields such as aerospace, security and architecture. This has been accompanied by the use of industrial videoscopes for equipment inspections as these instruments can be used to conduct inspections without the need for disassembly.”

The IPLEX G Lite is small and lightweight making it easy to use with one hand, while also featuring enhanced image processing. The tip of the videoscope is fitted with a very small camera and can be freely manipulated, making these instruments ideal for tasks such as periodic maintenance or inspecting a component’s quality.

Ease of use has been improved in the IPLEX G with the adoption of a touch panel monitor and electrically operated scope tip bending, enabling users to complete inspections more quickly. New recording and playback functions have also been added; including constant video recording and the ability to add bookmarks to save time during video reviews and find critical moments quickly.

When inspecting in oily environments, getting oil on the scope’s lens can make it difficult to see. To address this, the IPLEX G Lite is equipped with a new oil clearing tip adaptor that uses capillary action to draw oil away from the lens. The grooves on the oil clearing tip adapter drain unnecessary oil quickly and image keeps clean and visible, preventing your inspection being suspended.

“The IPLEX G Lite also has an option that allows users to switch the light source from LED to infrared (IR) or ultraviolet (UV) illumination. IR is a very important feature, particularly for the security industry, capturing images in the dark while UV is used to detect fine scratches that are hard to see with the naked eye,” explained Zhang.

Along with these performance features, the IPLEX G videoscope is designed to meet IP65 standards and U.S Military Defense testing (MIL-STD) to support its use for accurate and efficient inspection work, even under harsh conditions.

For further information, please visit: https://www.olympus-ims.com/en/rvi-products/iplex-g-lite/#!
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The 2018 budget gave the Ministry of Defence 25 percent more money. That usually means a boost in staff numbers specialising in procurement. It is an indication that the government is gearing up to make some big equipment purchases for the Defence Force.

So far, we have not heard how the government’s review of the 2016 Capability Plan is going. But the results can’t be too far away.

New Zealand has a habit of deferring major equipment purchases as long as possible. But eventually time runs out. The Air Force’s major aircraft, the P3 Orion and the C130 Hercules, are now both nearly 50 years old. Even the last upgrades happened ten years ago.

So, serious decisions need to be made soon. They are at the heart of the review of the Capability Plan.

Anyone with even a passing knowledge of defence recognises that the New Zealand Defence Force has to have long range transport able to deliver cargo and personnel across thousands of miles. With one of the largest Exclusive Economic Zones in the world, coupled with sovereign interests in the Pacific and the Antarctic, maritime surveillance is an essential task.

Replacing the C130s will be an easy decision to make. No party in Parliament, even the quasi-pacifist Green Party, will object to that.

The logical replacement for a Hercules is a Hercules. But the somewhat larger and longer range A400M will also have a strong claim. The extra range will be particularly useful for Antarctic flights. Either way, this is a decision that one could reasonably expect in the next two or three years.

The Orion replacement is more difficult. Again, there is a logical replacement: the Poseidon P8. But the cost is eye wateringly expensive at around $500 million per aircraft. There is also the fact that the production line will soon close for new orders.

The 2016 Capability Plan forecast four aircraft. But an order of three would also be credible, especially if close inshore surveillance was cast off to a much cheaper option.

There has been discussion of alternative aircraft to the P8. None of the options are in widespread service, and they would also have much less capability than the P8. It would be a significant retrograde step for New Zealand to step out of the P3/P8 level of capability, and it would be seen as such by our closest ally, Australia.

One of my concerns as Minister of Defence from 2008 to 2011 was to sequence major purchases – those that cost in excess of $1 billion – so that a government would only be faced with one major procurement decision in any one parliamentary term. Preferably the decision would be made in the first or second year of the three-year term, rather than in election year.

The Defence Review of 2010, which was largely confirmed by the 2016 Defence Review, forecast a sequence of replacements for delivery from 2018 to 2030. One of the major purchases needed to have been made in the last parliamentary term, but because that did not happen, there is a real prospect that the two aircraft decisions will need to be made in the next three years.

Even then, delivery would not occur much before 2025. This is quite a dilemma for the current government.

There are in fact three major defence acquisitions to be made. The third is the frigate replacement. It will be the last of the three major acquisitions, but it also has the longest delivery time. New ships will be needed around 2030 when the two Anzac class frigates will be over 30 years old. However, they have held up remarkably well and it is conceivable they could last as long as 40 years old.

Both will be going through a $500 million weapons and sensor upgrade in the next five years. It seems unlikely that defence planners would only want seven years’ use of the ships after such a substantial upgrade.

The Anzac replacement may herald quite a political battle. The Capability Plan envisages replacing frigates with frigates. Logically this would be done in partnership with Australia.
just as it was with the Anzac ships. The Australians are likely to make their choice of the ships to replace their Anzac ships later this year, with construction to begin in 2020. Delivery will extend over a decade.

It is conceivable that New Zealand could choose to add two more ships at the end of the build programme. In that case the frigate replacement decision could be deferred to the parliamentary term of 2020 to 2023.

There are other options for the frigate replacement. New Zealand may choose to go for a light frigate. In that case, three ships could replace the existing two Anzac ships. Alternatively, there could only be two ships. In either case, a light frigate option comes with an acceptance that New Zealand has opted out of the more capable anti-submarine capability that the current frigates have.

For the last twenty years New Zealand defence expenditure has been around 1 percent of GDP. The Capability Plan envisages the same level of expenditure. Buying significantly less capable platforms than what is planned will inevitably reduce defence expenditure below 1 percent of GDP.

This would be a real signal, particularly to Australia, that New Zealand was choosing a lower role in defence and security.

The Australian relationship is central to New Zealand, and defence is a key part of it. If Australia perceives that New Zealand is choosing a much lower path, there are likely to be consequences to the relationship that extend beyond defence co-operation.

New Zealand decision makers will need to think long and hard whether perceived savings in defence are worth the costs that are likely to be incurred in the wider trans-Tasman relationship.
Things are changing in the way tactical and strategic operations are defined in a military context. The ascendancy of military-medium and military-heavy turbofan capabilities means that there is now convergence in how tactical and strategic operations are conducted and resourced.

No longer do you need a ‘strategic jet’ and a ‘tactical turboprop’ to cover the spectrum of operations that many Air Forces are called upon to do. The Embraer KC-390 is providing this bridge in capability for the ‘medium’ class airlifter, in much the same way as the Boeing C-17 has done in the ‘heavy’ class.

The ability for the modern breed of fixed-wing transport aircraft to quietly cruise at speeds equivalent to modern jet airliners (M0.8) and then land on an unprepared strip in the islands or abroad opens up a whole new range of capabilities for militaries to explore.

When you combine these with the unique geographical location of New Zealand, and the roles and capabilities that a modern air transport aircraft need to perform, the KC-390 provides a winning combination of strategic and tactical capabilities, future-proofed with its modern design. The aircraft enjoys new standards of reliability, maintainability and overall support compared to older aircraft design types nearing retirement.

**Standard setter: the E190-E2**

Embraer is the world’s leading manufacturer of commercial jets up to 150 seats, and is proving that it has the organisational, technological and support base to propose and deliver solutions to New Zealand for the long term. Embraer’s new E190-E2 jet is the perfect complement to the KC-390 should a dedicated passenger/VIP aircraft continue to be required by the NZDF.

Notwithstanding the KC-390’s capability to be configured for passenger and VIP operations, the E190-E2 is already making a name for itself. The E2 family of commercial jets is the second generation of the E-Jets, which have logged more than 1,800
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orders and 1,400 deliveries to some 70 airlines in 50 countries.

In February 2018, the E190-E2 received type certificates from three certification authorities: ANAC (Brazil), FAA (USA) and EASA (European Union). It is the first time that an aircraft programme with the level of complexity of the E2 has received a type certificate from three major worldwide certification authorities simultaneously. This sets a new standard in the aerospace industry.

Following type certification, the first E190-E2 was delivered to launch operator Widerøe (Norway) in April this year in a 114-seat in single-class configuration.

When it comes to reliability, Embraer targets a 99 percent dispatch reliability after 12 months, and 99.5 percent after four years. Embraer targets 16-24 percent lower fuel burn and 15-25 percent lower maintenance cost per seat when compared to the original E-Jet. Range extension has also been achieved to 2,850nm with full passenger load and reserves.

So, what is new in the E2? Its wing has been redesigned and it introduces new pylons, landing gear, horizontal stabilisers, cabin, cabin air system, air cycle machine, bleed air system, and a new fly-by-wire system. In the E190-E2, of the 16 percent better fuel burn, 11 percent comes from the geared turbofan, 3.5 percent from the improved aerodynamics of the new high aspect ratio wing and 1.5 percent from the fly-by-wire.

In January 2013, Embraer selected the Pratt & Whitney PW1000G Geared Turbo Fan (GTF) engine as the exclusive powerplant, and Honeywell Primus Epic 2 was selected as the avionics package. Similar to the KC-390, the E2 features a closed loop fly-by-wire control, which reduces weight, increases fuel efficiency, enhances control and increases safety by full envelope protection in all flight phases.

**Superior service and support**

As is often the case when introducing new aircraft to the commercial or military market, questions are asked about the maintenance services and support that will be there to ensure aircraft serviceability and availability.

Embraer has learned a lot over the years from supporting some 5,600 aircraft from 1,700 customers in over 100 countries. It is this expertise that has contributed to Embraer’s ability to reduce aircraft downtime, lower operating costs and improve operational efficiency.

Embraer has a dedicated team of professionals at their TechCare Centre providing help 24/7/365 days a year. As a global company, Embraer boasts 24 warehouses, 9 owned service centres, 71 authorised service centres and 110 field support representatives – all of which are coordinated to ensure aircraft are kept serviceable wherever you are in the world.

Embraer has merged its support network from Commercial, Executive and Defence and Security business units under a single entity such that it has been able to pool the vast expertise of 2,500 professionals in to a coordinated services and support entity.

This, combined with customer satisfaction surveys of Commercial (83 percent), Defence (85 percent) and voted 1st for Executive Aviation by AIN and Pro Pilot, Embraer’s reputation for exemplary support is unrivalled.

There is now the realisation that E190-E2 certification and the imminent certification and delivery of the KC-390 to the Brazilian Air Force strengthens the position of Embraer as one of the top aerospace companies in the world. These are real milestones that will benefit operators the world over as these aircraft replace older fleets and models.
Defence Minister Hon Ron Mark suggests that time taken scrutinising P3 replacement options has been time well spent, and that we can expect similar rigour in relation to procurement proposals to Cabinet going forward.

For many years I sat on the Foreign Affairs and Trade Select Committee. Each year, post Budget, the Minister would arrive, and we would get to question them for an hour.

It was my chance to test them on how well they knew the portfolio and to ask hard questions on decisions made in the Budget.

This year the shoe was on the other foot. It was I fronting the committee and being grilled on my plans for the Defence Force and where the future of the NZDF may lie.

The Committee members presented some excellent lines of questioning and it was a robust session. One of their questions was around the potential purchase of the P8 Poseidon as a replacement for the P3K Orion. Many of you will know, from my time in opposition, I’ve been a strong critic of Defence capability purchases. I felt we could have done better on a number of occasions, and so it will come as no surprise I’ve been running the rule over the P3 replacement options and asked some hard questions of the team at the Ministry of Defence.

This is a purchase the NZDF would have to live with for at least the next 30 years, so I want to make sure that if we decide to press ahead, it is what we need.

It’s also been important to me to ensure we have the right strategic policy and procurement processes in place before making these important decisions.

This is why two of the first pieces of work I kicked off as Minister were reviewing our strategic Defence policy settings, and a comprehensive review of the Defence procurement process. The latter was particularly important given the first paper I was required to take to Cabinet was to solve a $148m cost overrun in the ANZAC Frigate Systems Upgrade project.

The review of our strategic policy settings has gone well, and at the time of writing, New Zealand’s new Strategic Defence Policy Statement is signed off by Cabinet and about to go to the printer. The Statement not only provides updated policy direction for Defence, fit for the turbulent times we live in, it aligns Defence with the values and direction of the new Government.

The team who have been involved in the work have done a great job. Once it’s released we will load an electronic copy on the Ministry of Defence Website. I encourage you all to read it.

The independent Procurement Policies and Practices Review, led by Sir Brian Roche, has also been completed and it has found the changes made, in the last few years, to Defence’s procurement processes are robust. They have overhauled their practices and now have a well-resourced team who can be considered an exemplar for the public sector.

What this means for me is that when I take a proposal to Cabinet, which recommends the purchase of a major capability, I can assure them we have a robust plan to deliver the project, on time, to specifications, within budget and that the equipment we have purchased will be right for the job.

But, we need to keep driving continuous improvement to the system. We owe that to taxpayers of New Zealand. In reaching his conclusions, Sir Brian Roche notes that the changes are still relatively new, and strong ongoing leadership is required to embed and sustain the changes.

Indeed, it is important to note that no project has gone from concept to delivery under the new system. Therefore, we will be keeping a close eye on defence procurement performance to ensure that high standards are met and maintained.

These two pieces of work will help inform our review of the Defence Capability Plan which is due to be completed by the end of the year.

That said we will need to make a decision on the P3 replacement well before then, and we continue to work on that.

But with our new strategy in place, and the review of the Defence procurement process complete, I know that I can stand behind any recommendation I take to Cabinet.
You recently issued an updated Mission Statement for the Royal New Zealand Air Force. Can you say what this is and why it has changed?

The new Mission Statement is “The RNZAF will provide New Zealand with relevant, responsive and effective Air Power to meet its security interests.” The new statement focuses clearly on the value our operations deliver to NZ. There is a lot more to conducting military air operations and delivering Air Power effects than simply the visible element of aircraft flying.

The future depends on our people, on a joint focus, and a broader sense of air operations including the use of space and remotely piloted systems. While military air operations remain our core task, the attitude and behaviours that get us there are embodied in our values and air warfighting ethos.

We began last year with inviting Year 12 and 13 students to our first four-day programme held at Whenuapai. This year we decided to invite 48 Year 13 students from all over New Zealand to Ohakea. I’m delighted with the response we’ve had and with the high percentage who are following-through with our recruitment team.

With regards to overall recruitment, I’m pleased to say that currently 18.7 percent of our force are women and last year some of our intakes were around 35 percent women. Retention is the challenge, and that requires a complete look at our policies, ensuring we look after families and facilitate a supportive after-childbirth return to work.

Women in senior positions are also important as role models. As you are aware the current Warrant Officer of the Air Force is Warrant Officer Toni Tate and we have an increasing number of women as base, squadron, and mission commanders - all of whom, like everyone else in the organisation, have got there on merit.

There are also a number of initiatives underway supporting purposeful recruitment and retention across the diversity spectrum.

Everyone is free to be their authentic selves with support readily available if needed. This creates an environment where being outside the mainstream is a non-issue as much as is possible and people can focus on their performance and their jobs.

As the New Zealand population and the potential pool of candidates diversify, what further opportunities do you see for recruitment?
TD: Diversity is celebrated and its strength is fully recognised throughout the NZDF. We also know the value and the importance of representing the changing face of New Zealand. This means ensuring that we have a diversity programme that is equitable and where gender, ethnicity, sexuality and religious beliefs pose no barriers for a career in our organisation.

For example, at this year’s Pride Parade we had senior officer representation and we provided a very visible Hercules fly-past to support those marching. Our attention is on ensuring we increase the number of women in the Air Force, as well as other diverse groups.

PG: How important is it for Air Force to now have a permanent Marae?

TD: We refer to it as the RNZAF Turangawaewae or ‘standing place’ rather than a Marae, and this is out of respect for other local historical Marae. This project has been a huge success, and over 2,300 people have been received by the Turangawaewae so far this year.

Army and Navy support was there from the start and Army Engineers played a significant role in construction. Through a series of open forums across the Bases our people decided the kawa or protocols which are very traditional. The Tūrangawaewae truly reflects who we are as New Zealanders.

PG: When it comes to platforms, the RNZAF's helicopter fleets have been renewed and the first T-6 Texan trainers are fully operational. Can you say how this already impacts on air power capability?

TD: The NH90 provides an amazing range of capabilities. Whilst it had initial challenges, our people have developed a number of ways to enhance the aircraft in operations and maintenance. Our helicopter squadron operates across a greater number of roles and tasks than many others, from battlefield support to counter-terrorism to search and rescue. Of the fourteen operators globally, New Zealand has the highest rates of aircraft availability.

The T-6 has just recently produced its first Wings Course with a pass rate of 90 percent - a very high rate. We are seeing excellent results. We are also in the process of taking delivery of our new King Air KA350s, a King Air that will allow us to undertake a wider range of roles.

This aircraft will allow us not only to undertake the customary multi-engine conversion training, but it also means we can conduct our own Air Warfare Officer training, which was previously provided in Australia. Two of the aircraft are also being fitted with sensors and systems to conduct basic surveillance missions.

PG: The Briefing for the Incoming Minister indicated that Cabinet would need to consider the maritime patrol component of the Future Air Surveillance Capability during 2018. How important is it for New Zealand to maintain such a capability?

TD: It is of crucial importance given the nature and range of activities that require response from the NZDF. Our exclusive economic zone is the 4th largest in the world, 15 times the size of mainland New Zealand and our search and rescue (SAR) region covers about 30 million square kilometres of ocean around New Zealand, stretching from the South Pole to the Equator.

Maritime Patrol missions, whether they are immediate searches to save lives or resource protection tasks in support of partner agencies, can stretch from Antarctica to the Pacific Islands. The P-3K2 Orion is our first responder following a cyclone, tsunami or earthquake.

From SAR to fisheries protection to high-end Intelligence, Surveillance, and Reconnaissance (ISR) operations, we really need to better tell the story of how important the maritime patrol capability is to New Zealand. The P-3 is a tremendous platform, but ours are over 50 years old and they don’t make them anymore.

Whatever replaces the Orions will likely have to last another 50 years. In that regard the Boeing P-8 Poseidon is being viewed as a viable contemporary replacement capability. All the work on its development and refinement has already been done by others and importantly, given our focus on working as part of a wider coalition environment, we will be operating within a large P-8 user community.

There is no doubt in my mind that FASC is the most important security related decision the current Government is likely to have to make.

PG: With a renewed focus on operations in the Pacific and Antarctica, how important is the Future Air Mobility project?

TD: While the P-3 is feeding back information about a disaster area, the Hercules are being loaded up with relief supplies. New Zealanders have an expectation that we will respond with
aerial to a range of situations, and are always ready to be on our way. Our Air Mobility fleet must be a “Jack or Jill of all trades”.

The decision on replacing the Hercules will need to be taken in conjunction with replacing the Boeing 757s, which provide us with a faster, longer range capability, be it for transporting personnel to distant deployments, supplies to Antarctica or taking Government delegations and trade missions overseas.

Whether NZ goes for the tried and true, or for something faster and more modern, the decision will be a well-considered one.

**PG:** The Briefing for the Incoming Minister also noted the work underway on the Singapore proposal to base F-15 fighter jets at Ohakea. What opportunities might this provide not just for the RNZAF, but for the NZDF as a whole?

**TD:** New Zealand has a long history of working alongside the Singapore Armed Forces, and exploring the Singapore-Ohakea F15 proposal is an extension of that relationship.

The proposal is still under consideration, but opportunities we would want to explore with Singapore include the chance for F-15s to facilitate JTAC (Joint Terminal Attack Controller) training with the New Zealand Army, and possibly maritime strike training with the Royal New Zealand Navy. Although we currently carry out this training with other partners, there could be an opportunity for this to be more accessible if the Singaporean jets were based here.

All of these issues are yet to be discussed with Singapore and would be part of the discussion if it were to go ahead. Government is yet to make a decision on the proposal.

**PG:** In looking to the future, what contribution might remotely piloted aircraft be able to make?

**TD:** Remotely Piloted Aircraft Systems (RPAS) are a part of the future, particularly as ISR platforms, be they battlefield or long-range, high altitude or long endurance platforms. Satellite coverage over our area of responsibility is currently challenging and RPAS could make a real difference here in the future. It will be considered in conjunction with FASC.

I look forward to our Defence Industry colleagues helping provide solutions to the problem once it is more clearly identified. Perhaps there’s a place to focus on long-range high altitude RPAS for the wider NZ region?

**PG:** Looking out further, and noting that the Royal Air Force has just taken over responsibility for UK military space operations, what opportunities might there be for the future uses and benefits of New Zealand space power?

**TD:** New Zealand is a member of the Five Eyes Combined Space Operations and as such has gained valuable insights into the challenges of military space operations. We also recognise how highly integrated and co-dependent military and civil/commercial space operations are in terms of developing resilient and responsive space capabilities.

Hence, in the last three years New Zealand has put in place legislation to enable a responsive space launch industry with Rocket Lab from the Mahia Peninsula. The RNZAF has a close working relationship with Rocket Lab and we have a few staff revolving through their projects, particularly in the avionics area.

We offer Rocket Lab access to our facilities and I see some really exciting possibilities here.

Southern locations in New Zealand also present significant opportunities for the ground segment of space systems including Space Situational Awareness. In summary, the New Zealand government has a highly integrated approach to managing the benefits and risks of space and the NZDF is playing a forward leaning role in those developments.

**PG:** What do you see as the major challenges for the RNZAF out to 2035?

**TD:** We are challenged by some of our 1930/40s infrastructure, which is being addressed. Enhancing our diversity and inclusivity, which is progressing but not fast enough. School to Skies Programme is a start that we must build on. We need to be better at interacting with the public and telling the story about what we do for New Zealand’s security and wellbeing.

However, the future also looks very bright. Our capabilities are being renewed one-by-one and our people are technologically skilled and orientated. The overall attrition rate is the lowest it’s been in a very long time and morale is good. This is a very exciting time for the Air Force.
Big year for GA-ASI Remotely Piloted Aircraft

At the half-way mark of 2018, it’s already shaping up to be a banner year for General Atomics Aeronautical Systems (GA-ASI).

In April, the Predator family of aircraft, which includes the Reaper, Gray Eagle, and new MQ-9B SkyGuardian, surpassed five million flight hours, the majority of which have occurred in combat.

In May, GA-ASI undertook the first large-scale commercial demonstration of a Remotely Piloted Aircraft (RPA) over a period of three weeks on Iki Island, Japan. The Guardian (a modified MQ-9) collected data for scientific research that will be shared across multiple government agencies, and flight data will be given to airspace management organisations to help establish procedures for using RPA systems in national and international civil airspace.

The aircraft’s sensors included a long-range maritime surface-search radar, stabilised optical and infrared video cameras, and a Detect and Avoid (DAA) System, which included a short-range air-to-air radar. This configuration is similar to that operated by the US Department of Homeland Security over the maritime approaches to the US.

The Guardian flights consisted of approximately 10 five-hour sorties over a three-week period; however, this aircraft configuration is capable of more than 20-hours’ endurance in a single sortie.

In June, NASA successfully demonstrated GA-ASI’s Detect and Avoid System on their Ikhana MQ-9. The DAA system combines automatic collision avoidance with the ability to remain ‘well-clear’ of other airspace users. The DAA’s subsystems include a GA-ASI-developed airborne radar, a TCAS II and DAA tracking capability from Honeywell, ADS-B In and Conflict Prediction and Display System.

In July, GA-ASI undertook the first trans-Atlantic flight of a Medium Altitude Long Endurance (MALE) Remotely Piloted Aircraft. The flight originated at GA-ASI’s Flight Test and Training Center in Grand Forks, North Dakota and landed at RAF Fairford in Gloucestershire, United Kingdom.

SkyGuardian was first conceived as a development program by GA-ASI using Internal Research and Development (IRAD) funding. One of the driving principles was to deliver a RPA that would become the first unmanned system to achieve airworthiness approval to fly in civilian airspace. The UK will lead the way, followed by other military and civil aviation authorities around the world.

A maritime variant of the MQ-9B SkyGuardian, known as the SeaGuardian, can host a variety of maritime radars to provide long-range surveillance, small target detection and radar imaging. In addition, the SeaGuardian can be fitted with an Automatic Identification System (AIS) to provide positive identification of seagoing vessels. This aircraft has an endurance of over 40 hours.

GA-ASI has offered the SeaGuardian to the New Zealand Defence Force for the Future Air Surveillance Capability.
At the launching of the 2018 Poppy Appeal in April, Willie Apiata said: "... so that our beautiful people can live in security at home and can have freedom of speech and live a life that we want them to live, instead of the ones that we experience when we are abroad helping those that cannot live that life".

Across the New Zealand Government, defence discussions are more frequently occurring in the context of defence as a component part of a national security outcome. Within industry, engagement and delivery is increasingly focussed on relationship, partnership and alliance. The New Zealand Defence Force is further accelerating its strategy to make a truly integrated Defence Force, a reality by 2025. All these conversations and initiatives point increasingly to a focus of the enterprise of National Security that is inclusive of Defence, other Government agencies and industry.

The NZDIA Board is delighted that the 21st NZDIA Forum will be held on 30, 31 October and 01 November 2018 at the Central Energy Trust Arena, Palmerston North and that the theme is: "Exploring the role of industry in national and regional security.

The New Zealand Government describes national security as "...the condition which permits the citizens of a state to go about their daily business confidently free from fear and able to make the most of opportunities to advance their way of life. It encompasses the preparedness, protection and preservation of people, and of property and information, both tangible and intangible."

This year the Forum, in addition to a strong presence from MOD and NZDF, will see representation from other NZ Government agencies which play a part in delivering on the New Zealand National Security System. Sessions being considered include workshops, presentations, a cross government and industry discussion on defining the role of industry in the system and industry’s role in supporting Government in managing risk across the national security risk horizon.

Exhibitors and sponsors from previous NZDIA forums should attend to continue past discussions with MOD and NZDF. Organisations, with an interest in developing closer understanding and relationships with NZ Government National Security agencies, should not miss the opportunity to meet and discuss their current or possible role, in supporting the NZ Government in upholding the New Zealand way of life.

With a change of city to return to the original home of the NZDIA Forum and also New Zealand's greatest concentration of defence personnel, we are excited to introduce even greater numbers of defence and other agency personnel to the technology, innovation and ideas of industry from across the world.

"We look forward to welcoming delegates, sponsors and exhibitors to join a critical conversation about national security and how we ensure the preservation of the many ways of life valued by New Zealanders."

- Palmerston North Mayor Grant Smith
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We look forward to welcoming delegates, sponsors and exhibitors to join a critical conversation about national security and how we ensure the preservation of the many ways of life valued by New Zealanders.
Defence short-changed as decisions delayed

Hon Mark Mitchell, National Party Spokesperson for Defence, writes that the recent Budget indicates major defence procurements, such as the P8 Poseidon programme, are facing an uncertain and slow-motion future.

When I came into Opposition I made it very clear to the Minister of Defence Ron Mark, that I would support him in making sure he advanced the critical investment that the Defence Force needs around capability and infrastructure requirements.

We are in an increasingly complex and challenging global environment that places greater demands on our Defence Force, and we owe it to them to ensure they have the right equipment to do their job - whether that's close to home here in New Zealand and the Asia Pacific region, or further abroad as we work with our partners towards stability in places like the Middle East and Africa.

The key to ensuring Defence is able to deliver on the operations they are tasked with, is to continually invest in personnel, property, and equipment. The Budget should reflect this. National's time in Government saw the development of a $20 billion Defence Capability Plan, which was supported by an almost billion dollar funding boost in Budget 2017/18.

This included provisions for new initiatives including advancing a cyber security support capability, the Littoral Operations and Frigate Systems Upgrades, and wider investment into modernised and more efficient systems.

In contrast, this year’s Budget delivered little for Defence. Yes, there have been increases in operational funding for Defence, however much of this is routine and in line with forecasts, based on the expectations we have for Defence, and annual changes in personnel. However, what was noticeably absent in this year’s Budget was any provision for the much needed replacement of the P3 Orion.

The P3 Orion has been an outstanding and reliable workhorse for our Royal New Zealand Air Force and our nation for over half a century. However, they are quickly reaching the end of their service life and all available upgrades have been exhausted. It’s time to give them an honourable and much deserved retirement.

The American Congress wrote last year saying it was last orders for the P8 Poseidon under the military sales programme. The P8 Poseidon would be an outstanding replacement for the P3, as it would both increase our own capability and close the capability gap with our partners, in addition to providing the interoperability that we need when deploying and working with our partners overseas.

The absence was likely a huge blow for those in our Defence Force, who were no doubt anticipating seeing provision in the Budget for the procurement of the P8s. The personnel in our Defence Forces rightfully have the expectation that they will be supported by the Government and that they will be given the best possible equipment.

It’s disappointing, but there may be some light at the end of the tunnel. Mr Mark indicated at the Foreign Affairs and Defence Committee Estimates Hearing in June that he was now preparing Cabinet papers, and we should have an answer by July.

When pressed on his level of confidence in being able to deliver a result, his repeated response was to ‘buckle up our seatbelts, put the phone on flight mode, and fasten the tray tables.’ This seemed more appropriate from an Air New Zealand flight attendant rather than the Minister of Defence.

It does raise the question that if Mr Mark is delivering the in-flight safety brief, who’s flying the plane?

We should know the answer to that by July.
Defence Strategic Policy Statement released

The just-released Defence Strategic Policy Statement, writes editor Nicholas Dynon, is a stark rendering of the strategic environment, a front-footed articulation of where New Zealand stands, and a manifesto for strong investment in Defence.

With the Defence Strategic Policy Statement, the coalition Government has delivered a frank and fearless assessment of New Zealand’s strategic environment few would have expected.

Although sharing aspects in common with the 2016 Defence White Paper, the Statement paints an altogether darker strategic outlook. Reflecting two years of tumultuous change in the international environment, its message is clear: the world is changing in perilous ways that are at odds with New Zealand’s interests.

It will certainly have come as something of a surprise to those who’ve grown accustomed to Wellington’s ‘careful not to offend’ stance in relation to China’s growing influence and assertiveness.

While much of the media and punditry around the Statement – both here and abroad – will focus on its stinging rebuke of China and Russia, it ultimately identifies that the single greatest threat to New Zealand is posed not by any one country but rather by the accelerating erosion of the international rules-based order.

This is an important distinction. As a trade-dependent and small country, the international rules-based order is crucial to New Zealand. The UN system gives small and large countries alike an equal seat at the international governance table, while international laws and agreements allow New Zealanders to do business with certainty.

Most obviously, Chinese military-led territorial expansionism in the South China Sea and its failure to recognise Court of Arbitration rulings are noted, as is Russia’s cyber-enabled information operations. But significantly, at the Statement’s heart is a concern with countries’ domestic values – values that ultimately drive their international behaviour.

“Both domestically and as a basis for international engagement, China holds views on human rights and freedom of information that stand in contrast to those that prevail in New Zealand,” states the DSPS. “Russia, Iran and Saudi Arabia, advocate ‘values and views not aligned to those of the traditional leaders of the international rules-based order.’”

In terms of values, neither are New Zealand’s traditional friends and partners spared by the Statement. Recent political trends in United States and Europe are reflective, it says, of a trend of “liberal democracies sliding into illiberalism, some democracies incorporating authoritarian elements as they centralise power in executives…”

“Challenges to open societies and Western liberalism, driven by increasing disillusionment with existing arrangements within these societies,” it continues, “threaten to reduce the willingness of open liberal states to champion the rules-based order.”

Most importantly – and really the keystone of the document – is that in raising concerns about the values of others, it articulates exactly where New Zealand stands.

Of the Statement’s 28 mentions of ‘values’, 23 relate to New Zealand’s values. It is, as its authors claim, an attempt to align New Zealand’s strategic policy with its values.

This isn’t just fluff. It has real implications.

Together, the stark strategic picture described by the Statement and its alignment of strategic priorities with New Zealand values, serve to justify the case for investment in Defence capability at levels of at least those prescribed by the 2016 Defence Capability Plan.

In terms of capability, it means maintaining “highly sophisticated capabilities that deliver for New Zealand, and that are valued by and interoperable with those key partners that share our values and interests.”

It also means dealing with the disruptors, such as foreign cyber-based information operations and political influence activities, that may threaten New Zealand’s open society and democratic processes from the inside.

A clear rebuke of recent accusations of New Zealand as the ‘soft underbelly’ of the ‘five eyes’ alliance, it is perhaps also a strong indication – and not before time – that criticisms of New Zealand not ‘pulling its weight’ might become a thing of the past.
Chief Joint Defence Services
Charlie Lott: Engagement, innovation and ‘failing forward’

In this exclusive interview, CJDS Charlie Lott updates editor Nicholas Dynon on progress made since the launch last year of the NZDF Framework for External & Industry Engagement and what we can expect over the coming 12 months.

LoD: The NZDF Framework for External & Industry Engagement was released the better part of a year ago, representing a big step forward for Defence. To what extent have staff been able to integrate the philosophies of the framework into their roles?

CL: When we released the Framework we followed up with a soft launch around camps and bases and explained to anyone involved in procurement what we wanted to achieve by taking the bold step of ‘partnering for greater effect’. We wanted to ensure that staff got the message that it’s okay to engage, and the framework provided the means by which they could do it.

We also launched it at an NZDIA monthly members meeting so that everyone got the same message that we were serious about this new paradigm and that it’s okay for Defence and industry to engage in free and frank discussions.

I think our staff got what we were wanting to do, and for the most part have enthusiastically adopted the philosophy of engaging as partners rather than as adversaries.

This is evidenced by the growing number of NZDF staff attending NZDIA monthly meetings, the Annual Forum, the Defence Engineering, Science and Technology Conference; and a significant number of staff now visit our suppliers on a routine basis to get to know them, what their capabilities are and the like.

I think it is also evidenced by our people talking about ‘value’ rather than ‘cost’ in everyday conversations about engagement, which is a fundamental shift in the way that Defence has traditionally engaged with our suppliers.

Most importantly, it is evidenced by a fundamentally good change in what our Defence Commercial Services (DCS) folk are thinking about procurement and engagement.

LoD: Since you took on the role of CJDS, how much of a culture shift have you seen in the NZDF in terms of industry and commercial savviness?

CL: It was always there Nick, but it was latent. People were afraid to engage because they didn’t understand how far they could go, when to pull back for ethical or probity reasons, and what the left and right of arcs were. In other words, our team didn’t understand that their choices in the engagement space weren’t so much a difference between right and wrong but rather between right and more right. The Framework gives them that sort of guidance.

What I’ve seen is people ringing Deb Howarth our Director, Defence Industry Engagement, and actually asking how to engage.

LoD: Looking back over your time so far in the role, what are you most proud of?
CL: The fact that MAJGEN Keating’s partnering for greater effect is actually openly spoken about, and that we are prepared as an organisation to actually ask our partners ‘we’ve been thinking, what do you think?’ before we commit to a course of action in procurement or supply chain.

Also, the fact that value has replaced cost, and people realise that in many cases – because Defence doesn’t put a value on its people’s time – value is often quite soft but measurable all the same.

But what I’m really proud of is that Defence is starting to be regarded as an organisation that commerce and industry actually like to work with – people are now proud to be part of the ‘Force Behind The Force For New Zealand’. Sure our business drivers are different, but at the end of the day we are just like any other business – not required to generate a profit or margin but required to be fiscally prudent.

We have openly recognised in the Framework that industry has a right to make a fair and sustainable margin, and in return we have the obligation to spend taxpayers funds wisely. Somewhere in the middle there is this sweet spot that we are both finding far more easily by being open, transparent and communicating to listen rather than just communicating as a box ticking exercise.

LoD: What help are you looking for from industry for next the 6-12 months?

CL: We have adopted a deliberate policy of what I call ‘fail forward’. This recognises that as we transform, as we innovate, as we become more agile, we will inevitably try some things that won’t work.

Rather than apportion blame, I’d like Industry to help us learn from things that don’t quite go according to plan, and to offer constructive advice in the learning space. Provided that we learn from things that go awry and that we don’t make the same mistake again, there is nothing at all wrong with being a learning organisation.

In accepting this, there is a very good chance that the lessons we learn in this new space can be applied equally to the intelligence and operational environment as they can to the business and commercial environments. In my space the gold lies in the fact that if you try something with a partner that doesn’t work, no one gets hurt except a bit of pride – if you make the same mistake on operations people do get hurt – I’d like industry to help us avoid that.

I’m asking industry to give us a hand to be a Petri dish, to try some new stuff, to try some transformation, try business change and when we come and ask a question be honest. And I’m starting to see that happen. They’re coming to us now and expressing alternatives as opposed to us saying this is how we’re going to do this. Don’t be afraid to tell us where we might be going wrong.

The other question I’ll be asking for industry’s help on is “how does the NZDF cope with the mass ‘re-employment’ of people that will be caused by the 4th industrial revolution – what we call 4th Generation digit?”

I don’t subscribe to the contention that there will be mass unemployment caused by AI, AR, IoT, and the exponentiality that comes from global connectedness, but I do subscribe to the notion that our people will be employed further up the value chain as automation, artificiality and virtuality come steaming at us. I would value Industry’s countenance on how we get out in front of that… now!

LoD: The Auckland Business Hub is widely regarded as a resounding success. What plans are there for hubs in other parts of the country?

CL: I think the Auckland Hub is actually too small for what we want it to do. That’s a lesson learnt, but we didn’t know how successful it was going to be. I’m very proud to see all manner of our partners now using for all manner of meeting and gatherings, and they’re welcome to use it. It’s another part of us engaging with government and non-government partners.

We’ve just established a Defence Business Centre in Lower Hutt on a very similar construct to the business hub in Auckland.

As resources and likely usage permits, I would like to see these defence business centres established as a network in the main centres and even as offshoots in the regions for what I’ll call ‘defence innovation centres’, which might be set up as a pop-up for a specific task or reason.

If we’re serious about adopting and promoting innovation, why couldn’t we put a defence innovation centre outside the CBD in, say, Porirua or Kapiti – close enough to Defence HQ to allow ‘innovation to flow into the organisation’ but not in a downtown environment so as to stifle or paralyse by analyse.

The whole idea of the Emerging Technologies Group is to take an idea that somebody’s playing with in the marketplace and bring it into Defence, play with it and see if it has applicability before it’s employed more widely in the Defence Force – in effect reducing the time to market. It’s been a remarkable success.

The idea now is to grow that into an innovation centre model. We’re asking our partners – and encourage our young – to come and join us and play in that space. The Australian Navy’s got one, it’s a fearless environment where people can play with ideas, and if it fails nobody loses.
Starting with ‘why’: creating an innovation culture between Defence and Industry

Captain Greg Laxton of the Royal Australian Navy will be presenting at the 2018 NZDIA Forum. In this exclusive interview, he talks with editor Nicholas Dynon about failure-tolerant spaces, leaders worth following, and changing culture.

I first interviewed Captain Greg Laxton for an article in the April 2016 inaugural issue of Line of Defence that showcased the Guided Missile Frigate Systems Program Office’s (FFGSPO) adoption of relational contracting. As FFGSPO Director, he commented at the time that a relational contracting approach had driven a positive shift in behaviours focused on “keeping the FFGs capable right through to life of type.”

He’s just stepped into a new role after returning from twelve months of long service leave and having been awarded a Conspicuous Service Cross for “outstanding achievement in the field of Navy Program Management and support innovation” in the recent Australian Queen’s Birthday Honours.

Coincidentally, it’s also just over a year since the opening by Chief of Navy VADM Tim Barrett of the Royal Australian Navy’s Centre for Innovation in Sydney, a collaborative project between the Department of Defence’s Capability Acquisition and Sustainment Group (CASC), the RAN, BAE Systems Australia, and Thales Australia.

The Centre is aimed at fostering a culture of innovation through encouraging the Naval community to come forward with their ideas and to test them in a failure-tolerant space.

At its launch in June 2017, Project Leader Don Moloney commented that the project had been “motivated by the leadership of the Director of Guided Missile Frigate Enterprise’s Captain Greg Laxton and the culture he’s inspired.”

There’s also been quite a bit of interest in the Land Systems Division and Air Division. But it has to show runs on the board; people need to see it working before they decide ‘it’s better to be doing this’.

The other thing is that industry has picked it up, and that’s brilliant because that pull has been created instead of the push from the Commonwealth.

Industry partners are now saying “hey, we really like this working together business. There seems to be a lot less angst and adversarial relations than in the past. Can we do more of this?”

LoD: The RAN Centre for Innovation is said to have been “motivated by the leadership of the Director of Guided Missile Frigate Enterprise’s Captain Greg Laxton and the culture he’s inspired.” Can you talk a bit about this culture?

I’m quite excited about what’s happened in this space. The genesis for the Centre for Innovation was a trip to the US where I attended an FFG forum of sorts and was invited to visit a fab lab, or fabrication laboratory. I also had a good friend in South Australia who got me really excited about this space, and I looked at Tonsley Park there, home to an old Mitsubishi factory site where they’ve created a big innovation precinct.

I put the challenge out there to a member of my team, Don Maloney, who’s passionate about all things innovation – and he ran with it. I championed the concept, but it was Don Maloney who was the driving force behind it, and he has created an amazing environment.

LoD: A November 2016 Forbes article quoted you as saying that “relational contracting is now influencing the future of commercial and contractual relationships in Australia’s Defence arena.” 18 months on, how is this tracking?

CASC have picked it up and run with it. They’ve taken away the term ‘relational contracting’ and replaced it with ‘collaborative contracting’, and they released a ‘best practices’ guide mid last year.

Maritime Systems Division (MSD) has been active in rolling out the relational contracting model. This is the ‘together is better’ approach where you’re trying to foster an environment where you’re focusing on the outcome and not so much on the contractual mechanisms. You’re creating an environment where it’s safe to collaborate.
The idea was to create a safe environment to innovate, because if you think about it failure tends to be touted as not being an option – and for good reason. In a wartime situation, failure’s bad. But innovation doesn’t work if you can’t try, fail, learn from your mistakes, try again, try again and eventually succeed. That was the real concept behind the Centre.

All the feedback I’ve had so far is that people have really embraced it. What they’re saying is that once they’ve actually matured the operational model, they’re looking at doing more of these Centres of Innovation across Australia.

LoD: The Centre for innovation is a bricks-and-mortar crystallisation of what’s come out of the FFG Enterprise. But I imagine that the underlying substructure to that is the more difficult cultural change that needs to occur. What did this involve?

In New Zealand is a wonderful chap called Michael Henderson, a corporate anthropologist – one of the very few in the world. What he does is go around corporations and business organisations and looks at their culture. What Michael says is “a company cannot outperform its culture.” And it is so true.

He describes four things with which you can actually lift an organisation’s culture: (i) leaders worth following, (ii) work worth doing, (iii) knowledge worth sharing, and (iv) culture worth contributing to.

In the FFG Enterprise, we put a deliberate focus on culture. You can’t control culture because culture is owned by people, but the old saying that ‘a fish rots from its head’ is true as well. If the leadership is not working, that’s going to cause issues and it will permeate down.

‘Work worth doing’ was around how we change contracts from adversarial contractual relationships, and to galvanise everybody around a single mission: delivering these ships to Navy on-time every time. And that made a big difference, because previously you’d turn up to work because you’re employed to do so, and you did your stuff, but you had no overall vision about what it was you were contributing to.

‘Leaders worth following’ was not just about the people at the top; it was all of the leaders in the organisations. We had to start training them and empowering them to think for themselves, and to understand that it was okay to try things a little differently and that they didn’t have to beat people up with a stick anymore.

In terms of ‘culture worth contributing to’, in his popular ‘Start with Why’ Ted Talk, Simon Sinek describes concentric circles that start with the ‘why’, then the ‘how’ and the ‘what’. The middle circle – the most important one – is ‘why’. It’s about telling people about your ‘why’, your reason for existing – not just about what you do and how you do it.

A key aspect of this for us in the FFG Enterprise was our Charter. With the Charter, everybody understood the aim of what it is we’re doing, namely, to provide materially seaworthy FFGs on-time every time.

In essence, it’s an outcomes-focused relational contract on a single piece of paper. It has no authority apart from the fact that it’s signed by all Enterprise partners, but it is an overarching intent that sits above the contracts.

We empowered our people by saying “this is your charter, if what you’re seeing from us doesn’t accord with what the charter says, hold us to account. If the charter says we want you to be innovative and think outside the box and do things differently, and then you’ve got a great idea and no one’s listening, wave it in front of us.”

Part Two of this interview will appear in the Spring issue of Line of Defence.
Following the success of last year’s inaugural event, late August sees the return of the two-day conference. This time, the NZDF – Defence Technology Agency – Capability Branch collaboration expands its remit to include science and technology.

According to Debbie, outcomes of last year’s conference included the validation of Project Rutherford, further evidence to back up the standing up of the Emerging Technologies Group and Defence Innovation Centre of Excellence, establishment of an additive manufacturing working group and a cross NZ Inc and industry Aviation Career Professional Development Group, and a greater focus for nominations for DIAC out of engineering.

“We’re taking on board Strategy25, which focuses on our people, our information and our relationships,” said Debbie. “The goal is to make ideas accessible and spark conversation to fuel the delivery of an integrated Defence Force for 2025.”

“What will the impact of technology be on our people, how will they work, what will they be working on, what skills will be required, the pace of change is growing so how we upskill our people as new technology is adopted?

“How will we gather information, what technology will we use to gather it, analyse it and transmit it?

“How can technology be utilised to bring us together as an integrated Defence Force with our military and civilian partners in 2025 and beyond?”

The conference format will be similar to last year, with Day One setting the bigger picture for the around 600 anticipated attendees. Key areas will include STEM and the future of education, the digital spectrum of AR, MR and VR, big data, and AI and machine learning.

Alexia Hilbertidou, who recently received a Queen’s Young Leader’s Award at Buckingham Palace, has been confirmed as a speaker to give the youth view of STEM and engineering. Kerry Topp, Associate Director, Transformation & Innovation at Datacom, who Debbie describes as “passionate about cultural connection, engagement, enterprise value and social impact through open innovation & capability development,” will also be presenting.

An afternoon will feature Lillian Grace of Figure NZ, assisting to showcase the value of data in decision making using case studies to demonstrate the importance to outcome delivery. While Michael Cameron, International Research Fellow at the Law Foundation, will be talking about what autonomous technology means for New Zealand.

Day One will also feature a Tech Zone in which several industry stakeholders will be showcasing what they can offer in the areas of interest. And an ‘Annual Great Debate’ will see representatives from the three services contest a topic that’s yet to be confirmed. Jon Finderup, Maritime lead for the Ministry of Defence, will adjudicate.

Day Two brings the focus of “so what”: what are the key areas of focus for the NZDF to achieve an Engineering, Science and Technology function to deliver Strategy25. Sessions will cover the exploration of the modern learning environment and how can it support a growth mindset, smart management of fixed assets and how internal and external innovation can be harnessed.

“We have a lot of people who have great ideas internally, and there’s a lot of industry who also have great ideas externally,” noted Debbie. “How do we actually get that to fruition? How can we get better at adopting innovation?

There are limited opportunities available for companies to sponsor the event or participate in the Techzone to grow their profile and demonstrate their capabilities or simply attend to gain a better insight into the NZDF. It is shaping up to be a great event.
Ministry of Defence industry web portal proves popular

Line of Defence gains insights from Stephanie Dillon, MoD Chief Advisor – Industry and Government Engagement, about the Ministry’s industry web portal.

Assuming you’ve visited the MoD website at some point in the past several months, you may have noticed some changes. Among them is the new industry portal, which went live on the opening day of last year’s NZDIA Annual Forum – 10th October.

The intent of the new industry portal is varied, MoD Chief Advisor – Industry and Government Engagement Stephanie Dillon told Line of Defence, but essentially it’s about increasing awareness of – and communication about – capabilities between industry and Defence.

It’s about “making it easier for industry to understand our needs (smart supplier), and making it easier for Defence to understand business (smart customer),” she said. “In turn, this will result in better RFT responses and less project risk.”

The centrepiece of the portal is a defence industry capability database, which showcases information that is supplier-driven, thereby reducing the maintenance overhead of the database.

“It provides an opportunity to introduce companies to each other which is removed from the procurement team, and gives everyone a fair chance,” said Stephanie.

“In addition to Project Industry Days, it will make it easier for industries to find Prime or Sub contractor partners in advance of a project, and to then stay in touch,” she explained. “It will allow businesses to collaborate with each other on high value, high risk and complex defence projects.”

It’s envisaged as mutually beneficial for both Industry and Defence, providing Defence project managers an informal view of Industry interest in their projects, while also increasing opportunities for New Zealand Industry with global suppliers generally.

“We have heard that New Zealand companies on the portal have been approached by offshore manufacturers so business other than Ministry of Defence Business is happening. We are really happy about that.”

According to Stephanie, so far over 100 Companies and over 300 people have registered in the portal. “Generally, we have found potential suppliers to be happy with the portal,” she commented. “They feel better informed and have responded positively each time new information is added.”

She forecasts that the portal will continue to improve based on feedback.

Already, new functionalities and enhancements are planned. “We have recently added the ability for non-MoD projects which are complex and will need industry collaboration to be added,” she said. “These may one day include NZDF projects.”

An industry event calendar and improved reporting functionality are also in the pipeline.

“We believe this is a useful tool to connect people, but we also place great value on meetings, site visits and project events,” Stephanie added.

It’s important to note that the portal does not replace the New Zealand Government Electronic Tenders Service (GETS). Companies interested in registering expressions of interest, or engaging in tender processes, still need to create an account on the GETS website and follow the processes set down on that website.

The portal is accessible from the Ministry of Defence website at www.defence.govt.nz, and by clicking the ‘industry’ button located at the top-right corner of the homepage.

Registration is free and is open to registered companies. If you have questions about the portal or the registration process, email the Ministry of Defence Engagement Team at industry@defence.govt.nz.
“We will strengthen our alliances and attract new partners, not just by sharing data from monitoring, but by training and working closely with each other in space operations.”

These are the words of the United States Secretary of the Air Force, Heather Wilson. In April, she stated her department would provide space training to allied countries’ militaries. She cited China and Russia as threats, saying they “are developing capabilities to disable our satellites.”

This initiative comes after President Donald Trump called for a “Space Force”, a branch of the military that would operate off-planet. China and Russia, in turn, now recognise space as a security domain – both countries are reportedly developing anti-satellite weapons.

Nicholas Borroz, a business intelligence consultant and doctoral candidate in international business at the University of Auckland, sees the militarisation of space as a major threat to its commercialisation.

The United States has for its part demonstrated its ability to bring down satellites with missiles.

The potential for conflict in space is real, so much so that an international consortium is right now pulling together a manual on the international law of military space operations.

Militarisation is not the only phenomenon marking a new era in human space activity. There is also increasing commercialisation of space. SpaceX is spearheading this with its development of dual-use reusable rockets that can go to other planets, or simply jet us to other continents.

But this is just the tip of the iceberg. There are plans in the works for asteroid mining, space tourism, and even orbiting luxury hotels.

Nicholas Borroz is a doctoral candidate in international business at the University of Auckland, and a business intelligence consultant. Nicholas previously studied international economics at Johns Hopkins and international relations at Macalester College.

Closer to home, earth-facing satellites are providing all sorts of business services by providing useful intelligence about human and natural systems on this planet. The financial industry has taken note, with investment firms now funnelling capital into space ventures. Space is now something worth betting on.

The problem in a nutshell is this: militarisation of space threatens its commercialisation. And this is an issue because private firms are the main driver behind space exploration today. Public agencies like the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA) still have significant operations, but firms are now taking leading roles.

It has taken a private company like SpaceX, for instance, to revive interest in astronauts going to Mars. But business in space is still heinously expensive – the price tag on a launch of SpaceX’s Falcon 9 rocket is over USD 60 million. And as is true for any type of business, when risk increases, costs rise. And militarisation of space increases risk, whether real or perceived.

Directly, firms will fear that, because of militarisation, governments may target their assets in space. Firms working with the United States military, for instance, may fear that China or Russia will bring down their satellites in future space wars.

As has been often noted, these attacks would unlikely be kinetic. There will not be dogfights or space marines in space – at least not any time soon. More likely is that an attack would take
over or disable a satellite, rather than blasting it to smithereens. Regardless, that means the asset will no longer generate revenue for the firm.

No matter what form satellite attacks take, they will lead to a more indirect concern for all companies, whether or not they are exposed to political risk: the more destroyed or disabled satellites there are, the more there will be space junk, clouds of destructive uncontrolled objects hurdling in orbit.

Space junk is already a serious concern. The 2009 impact between American and Russian satellites was one of the highest-profile incidents to date. The United States Commerce Department is bringing the matter under its portfolio, and the European Space Agency is warning about the situation. Interstate conflict extending into space would certainly make the space junk problem more severe.

If firms fear warfare will hurt their satellites, directly or indirectly, there will be less civilian business.

Militarisation will not be a complete deal killer, but it will have a slowing effect. Firms’ costs will rise because they will need to conduct political risk analysis, they will need to build in redundancies for potential disaster scenarios, and they will have more concern about unknowingly working with agents of enemy states, spurring greater investment in due diligence programs.

All this means firms will have higher costs, which in turn will undermine profitability and discourage investment. In essence, militarisation will be like pushing the pause button on humanity’s collective spacefaring project, or at least slowing down its speed significantly.

Of course, one can argue that militarisation will actually end up catalysing advances in space technologies; while militarisation will slow down some areas of commercialisation, it will speed up others.

We already know this happened as a result of the Cold War. The rockets that first got us off earth were cousins of those that could rain down nuclear destruction. And the GPS functions on your smartphone are provided courtesy of satellite descendants of Sputnik (or rather, descendants of its adversaries on the other side of the Iron Curtain).

If we start seeing the United States, China, and Russia building up their space military capabilities, there will certainly be huge opportunities for government contractors. Militaries would love to be able to send hardware into space more cheaply, which would be a boon for companies specialising in launch technologies.

In short, there will be ample prospects for firms who can assist governments take out or defend satellites. For instance, New Zealand, a recent entrant to the $320 billion space market with its young space agency just founded in 2016, stands to commercially benefit from some aspects of militarisation.

Private firms such as Rocket Lab will certainly be affected by the upcoming star wars. The firm was incorporated to be based in the United States and has had contracts with the US government’s Defense Advanced Research Projects Agency (DARPA). Trying to frame itself as the “FedEx of space” in the US, a country leading the militarisation of space, means there will be plenty of military contract opportunities Rocket Lab can exploit.

But although there is certainly some upside for firms such as Rocket Lab, the overall impact of militarisation will be negative.

Fears about political risk and space junk will grow if militarisation continues, which will in turn raise costs, thereby slowing civilian commercialisation of space.

And let us not underestimate the wider negative consequences of war in space. How space war will occur is speculative, but it is a safe bet to assume it will likely hurt all humans, regardless of their nationality. Dependence on telecommunications satellites knows no borders.

To be sure, space war will not cause many “casualties” in the traditional sense of the word, but the impacts will be global. And how war in space will interplay with more traditional conflicts on earth is yet to be seen.
Reflections on the Second National Security Conference

Dr William Hoverd, Senior Lecturer at Massey University’s Centre for Defence and Security Studies, is guest editor of this 2018 National Security Conference special issue of Line of Defence. He offers his reflections on the CDSS-hosted conference, highlighting the big questions it’s raised in relation to New Zealand’s national security.

The proceedings of the first National Security Conference in 2017 were published by Massey University as an edited volume. The second conference built on this framework and sought to broaden the notion of national security away from traditional issues. Indeed, explicit discussion about defence and policing issues were notably absent.

The conference began with Hon Andrew Little giving his first official speech as the Minister with responsibility for the GSCB and NZSIS. Minister Little starts by emphasising that New Zealand national security matters tend to be approached by the Government in a bi-partisan manner, before outlining his view of the function of security intelligence, the need for transparency, the limits of transparency, oversight and the role of the Security Intelligence Act 2017.

The Minister concludes by pointing to the two largest threats facing the GCSB and NZSIS: cyber threats and counter-terrorism respectively.

Dr Bryson Paine of the University of North Georgia notes the global trend for expansion of cyber-defence capabilities in national security systems. He demonstrates that the domain of cyber-attack can now impact individuals, governments and corporations indiscriminately and discriminately.

Phones, televisions, fridges, banking systems, power grids, and government IT infrastructure can all become victims to catastrophic attacks that ransom, subvert or destroy their ability to function. Cyber-attacks can originate from individuals, nation states or organised criminal groups.

Terrifyingly, these sources of threat can target globally.

Paine concludes his review of the contemporary cyberthreat landscape by stating that, “a comprehensive national security strategy for the next twenty years must address not only the technologies and the processes involved in each of the components of national security, it must include cyber training and education for the people working across those areas as well.”

For Paine, the only effective way for internet-enabled liberal democracies to protect themselves from transnational cyber-attack will come through active engagement between individuals and governments to protect themselves.

Dr John Battersby (CDSS) contests the notion that New Zealand has been relatively insulated from acts of terrorism. He points to a series of politically motivated domestic bombings, assassination attempts and violence that have occurred in the last 40 years to argue that these events would now be likely represented as terrorist acts rather than the isolated acts of crime they were previously portrayed as.

Battersby worries that a form of collective amnesia combined with Government secrecy around historical counterterrorism actions creates an ‘optical illusion’ that obscures the ability for real progress around the weaknesses in New Zealand’s legislative environment when it comes to creating effective counter-terrorism measures.

Dr Reuben Steff from Waikato University turns the discussion to the potential nuclear threat posed by North Korea. He looks to the progress of the recent discussions between Pyongyang and Washington before asking what it means for New Zealand. Specifically, he places the discussions in relation to the great power competition taking place in the deteriorating relationship between China and the US and asks what that might mean for stability in the Asia Pacific region.

Josie Pagani (Director of the Council of International Development) and Andie Fong Toy (Former Deputy Secretary General of the Pacific Islands Forum Secretariat) both reflect upon the impact and challenges of the New Zealand Government’s Pacific reset.

For Pagani, additional government aid results in increased spending for...
vulnerable pacific island communities, which ultimately represents spending on promoting a secure region. She points to New Zealand’s relative neglect of the region, its infrastructure vulnerabilities, and the emergence of China and Russia as matters of New Zealand concern.

Fong Toy highlights cross-border Pacific Islands human security concerns, including, “climate change, rapid urbanisation, unemployment, food insecurity, depletion of natural resources, violence against women, and post-conflict reconstruction.” She is of the view that the reset is a move in the right direction, but that it will need to address some currently unaddressed critical issues, including building trusted relationships with Pacific Island leaders, pension portability, biosecurity rules for Pacific produce, and the extension of visas on arrival to Pacific Island tourists.

Crucially, she worries that the Pacific reset must be driven by a real concern for the stability and prosperity of the region, as well as a real engagement with the effects of climate change, rather than a politics where New Zealand might be losing ground to China and Russia.

Dr Scott Hauger of the Asia Pacific Centre for Security Studies outlines the risks of climate change for the Pacific region, pointing to the increase of atmospheric carbon dioxide and its effects on global warming.

The south pacific region can expect rising levels of water to impact on coastal areas, resulting in increased natural disasters. For New Zealand, there will likely be increased competition over resources resulting from climate change. In particular this might mean a challenge to Antarctic territorial claims.

Hauger argues that the security sector will have to increasingly respond to the impacts of climate change because the onus for preparing for prevention, mitigation and adaptation efforts will land on them to prepare and deliver increasingly extensive humanitarian assistance regionally and domestically.

Dr Germana Nicklin, (CDSS) asks what the concept of ‘national security’ means for New Zealanders. She highlights examples where there is a divergence between government national security priorities and the ways in which New Zealand society might consider the concept. Nicklin, argues that it will be a research priority to reconcile sections of the community and government policy.

Ailya Danzeisen’s article challenges us to envisage New Zealand civil society in a different way. As a Muslim community member, she ponders why it is that New Zealand Muslims have been relatively insulated from terror and violence since the rise of ISIL.

For Danzeisen, our society offers a model of citizenship that has been relatively successful at integrating Muslims. She argues that the ‘Kiwi difference’ is the Government and community’s willingness to invest in people.

She sees this typified in the Maori proverb: He aha te mea nui o te ao. He tāngata, he tāngata, he tāngata - What is the most important thing in the world? It is people, it is people, it is people. For Danzeisen the proverb provides an ethos for a model of integration that can be extended to the super diverse populations developing in our major cities.

The conference speakers saw the biggest threats to New Zealand national security as:
1. Cyberthreats
2. Terrorism
3. Major Power Competition
4. The Pacific Reset
5. Climate Change
6. Maritime threats
7. Biosecurity
Biosecurity and maritime threats are not directly discussed by the conference participants included in this special issue, but at the conference these were identified as mycoplasma bovis, Kauri dieback disease, illegal fishing, transnational crime, sea level rise, mass arrivals, and pollution, among others.

Absent from the conference discussion, but worthy of future discussion are the risks to national security arising from disease outbreaks (eg. influenza pandemics) and consideration of the impact of the New Zealand Space Agency on our national security landscape (in terms of territorial claims, liability and protecting the supply chains for rocket launch technology).

An unanticipated discussion focused on the need for more thinking about the role of civil society. One product of DPMC’s ‘whole of society’ definition of national security is that it also places responsibility for security onto the population.

In certain cases, a partnership is sensible – such as in the evolution of New Zealand’s cybersecurity strategy – which necessarily integrates government, business and individuals. It might make sense for civil responsibility for security to extend to biosecurity and climate change concerns as well. In the more traditional national security areas, the enforcement of a ‘whole of society’ definition could lead to concerns about restrictions on personal freedom.

So where do these conversations about national security leave us?

First, we should envisage national security as more than a concern with external threats from nation states. Second, security threats are interconnected across a number of domains, and it is the risk of harm to the population and economy which links them. Third, broader notions of threat extend governmental responsibility for meeting them to include more government agencies, such as the Ministry of Primary Industries.

These changes necessitate new thinking about national security. For government, this involves the creation and maintenance of effective mechanisms for reacting to threats and deciding upon thresholds for prevention of threats. For civil society, questions will inevitably arise about the acceptability of government approaches to national security.

For academics tasked with researching national security there are questions arising out of the conference that need to be asked, including:

**Big Questions**

1. What is it exactly that we want to protect and why?
2. How much national security is enough?
3. To what extent does including non-traditional security issues as matters of national security impact on the balance between freedom and security?

**The Role of Civil Society**

1. What is the role of civil society in considering the big questions of national security?
2. What would the logistics of a whole of society approach to national security look like?
3. How can criticism, scepticism and alternative views contribute to a robust national security discussion?

**The Mechanisms of National Security**

1. To what extent is there a shared understanding and practice of ‘national security’ across all levels of government?
2. The New Zealand National Security system is effectively reactive in nature – what are the thresholds required for implementing long term threat prevention and mitigation planning across government?
3. What are the evidence bases being used for national security decisions? Are we learning from our previous experiences?
4. How do our security mechanisms build trust and confidence from the public that they are making robust decisions for New Zealanders?
5. Given that the Intelligence and Security Act 2017 reaffirms the oversight mechanisms for the intelligence agencies; do we need other oversight mechanisms & similar legislation for the national security decisions being made by other agencies, especially those with intelligence functions?

It is these types of questions (and our inevitable criticism of such questions) that drive research agendas and inform teaching. They also guide our responsibility as critics and the conscience of society to engage with civil society, students and the government to address such questions to the best of our abilities.
Andrew Little addresses National Security Conference

In his first official speech as minister responsible for the GCSB and NZSIS, Hon Andrew Little highlights progress in intelligence agency oversight and reform, and identifies terrorism – including Daesh activity in southern Philippines – and cyber attacks as key ongoing threats to national security.

Although this is my first official speech as the Minister with responsibility for the GSCB and NZSIS – this is not my first interaction with the topic.

When you’re the Leader of the Opposition you receive regular briefings on intelligence matters relating to national security because of the statutory duty on the agencies to keep that office informed. This is critical to ensure a bipartisan approach to these important matters. As a result, I came to the role with a useful foundation of information and I have been quick to build on that.

That bi-partisanship illustrates the kind of country we are, New Zealand enjoys an enviable way of life and we have highly cherished values and ideals: open and democratic government; observance of the rule of law; freedom of the individual, including freedom to act collectively and freedom to dissent; freedom of information and freedom of trade across our borders. These things not only define our character as a nation; they also underpin our economic and social wellbeing.

Our connectedness to each other and the rest of the world, especially via the internet is a source of great opportunity, but it also brings threats. New Zealanders’ safety and prosperity benefit from having a strong and effective intelligence and security sector.

The role of good intelligence

The world is challenging and uncertain.

Strong, timely and robust intelligence and advice enables the Government to make informed decisions and set appropriate policy. This ensures New Zealanders are safe both here and abroad, and contributes to international relations and the economic wellbeing of the country.

New Zealand’s intelligence agencies collect, assess and report on the intelligence in accordance with priorities set by the Government and in line with New Zealand’s laws and its human rights obligations. They also provide protective services, such as cyber-security and physical and personal security advice.

To achieve these objectives, the GCSB and NZSIS must be focused on the core national interests they are there to serve, and they must be collaborative.

In this respect, the agencies have come a long way since their recent reviews.

Just a few years ago it was apparent their organisational cultures were internally focused, defensive to external bodies, including to other parts of the government, and lacking in rigour in complying with some parts of their legal framework. It did not help that the oversight and accountability architecture around them was inadequate.

Democratic government requires openness and transparency. They are values which have been instilled in me from a young age and go to the heart of public trust and confidence. It is important that the government – both the elected representatives and government departments – conduct themselves with appropriate accountability. This poses a predictable challenge for security and intelligence agencies. Much of the effectiveness of their work depends on their information, their methods and their people not being exposed. But accountability and oversight is important even in this sector.
To maintain public confidence, as much as to maintain the social licence to function, we have to strike the balance very carefully when it comes to our security and intelligence agencies. I expect both agencies to be as transparent as they can about the nature of the threats the country faces and their role in helping to manage these threats. I would like to take this opportunity to acknowledge the steps both agencies have taken in recent years to be more open and transparent, and I encourage them to push ahead in this respect wherever possible.

It is a positive development that the heads of our agencies regularly communicate publicly about the issues facing those agencies.

But there is an obvious limit: No one can expect our security and intelligence agencies to disclose operational details, targets of their work, methods deployed or the nature of their intelligence gathering.

We are entitled to – and should – look with great scepticism on those who make public demands for our agencies to pursue specific targets or to take particular actions against specified interests.

There is no credible public response to such calls. What it is possible to say is that the total machinery around our services – whether Ministerial or Cabinet priority-setting, the agencies themselves and the oversight bodies, whether the Parliamentary committee or the Inspector-General – means we have services that are capable and responsive.

Our intelligence and security agencies seldom get to boast of their successes. Their failures risk being well-known.

The Intelligence and Security Act 2017
As well as being the Minister responsible for the NZSIS and the GCSB, I am also the Justice Minister. As such it would be no surprise that I have a particular focus on the law, and the way in which the law interacts with the everyday needs of New Zealand and New Zealanders.

It is an absolute bottom line that the agencies must act within the law at all times. The rule of law demands nothing less.

The NZSIS and the GCSB are now operating under a new single Act - the Intelligence and Security Act 2017. The Act provides that everything they do must be lawful, necessary, reasonable and proportionate.

Labour supported the new Act through the House as we recognised the need to ensure the agencies had a modern and appropriate legislative framework, which balances the need for operational effectiveness with improved transparency.

I am pleased that the new Act sets out the NZSIS and GCSB’s objectives and functions in a more transparent way. Importantly, the new Act also states far more clearly what the agencies can do under a warrant.

Work associated with the implementation of the Act is now largely complete.

Ministerial Policy Statements are a unique instrument under the Act – these are publicly available and add another layer of transparency designed to give the public understanding and reassurance about what the two agencies do and the standards of conduct they are expected to meet.

Oversight of the intelligence agencies
“Who watches the watchers” is an age-old question which has particular relevance here.
When it comes to the NZSIS and the GCSB high public trust in the system comes from having in place the right checks and balances and oversight of the agencies. I am certain that the measures in place today are far more rigorous than they were five or ten years ago.

The main, but not the only, independent oversight body is the Inspector-General of Intelligence and Security, and this role has been further strengthened in the new Act. The present Inspector-General, working under the new legislation and with a better resourced office, has proven the office to be robustly independent. This is vital for public confidence.

I am pleased with the strong compliance regimes the GCSB and NZSIS have developed. A key part of this is having meaningful engagement with the Inspector-General. Examples of this in action could be her oversight of new processes the agencies have developed, or working to ensure their compliance framework is effective.

Achieving sound compliance systems and processes is critical to maintaining public trust and confidence.

I was pleased to note that the Inspector-General found both the GCSB and the NZIS have compliant systems and processes in her Annual Report.

The threats New Zealand faces

I’d like to finish by touching on the national security threatscape, focusing particularly on counter-terrorism and cyber threats. I raise these examples partly to highlight the work the NZSIS and GCSB do, but also as these are two threats that for me are front of mind.

Counter-terrorism

The threat of terrorism remains a reality today. The continued instability in Syria and other parts of the Middle East is still a cause of threats worldwide, especially as radical extremist messages are easy to propagate through social media. Those messages now easily reach into otherwise benign communities like New Zealand.

We are not immune to the possibility of extremist action here.

Countering the threat of terrorism remains a significant focus for the NZSIS (with the GCSB’s assistance where required).

At any one time there are between 30 and 40 people on NZSIS’s counter-terrorism risk register. These individuals are assessed to represent a potential threat to New Zealand related to terrorism.

Internationally, the number of individuals travelling to support Daesh in the Middle East conflict zone is believed to have decreased significantly.

It is possible foreign terrorist fighters in Iraq and Syria may seek to leave, either returning to their country of origin or to other countries.

Events last year in the southern Philippines city of Marawi gave rise to concerns of Daesh strengthening its footprint in South East Asia. This is a concern that the Government is aware of and something we are keeping an eye on.

Cyber threat scape

In terms of cyber threats, the GCSB noted a 15 per cent increase in serious incidents affecting New Zealand in the year to June 2017.

Incredibly nearly a third of these had indicators of connection to foreign intelligence agencies.

New Zealand organisations were subject to both direct and indirect threats, and New Zealand infrastructure is being used as staging points by threat actors to target systems in other countries.

Motivation varies from espionage to revenue generation and seeking to secure political outcomes.

In February, the Government added New Zealand’s voice to the international condemnation of the NotPetya cyber-attack which international partners have now attributed to the Russian Government. It targeted Ukraine but had a global impact – including affecting supply chains in New Zealand. In December New Zealand also expressed concern about international reports which link North Korea to the major WannaCry ransomware campaign.

While New Zealand was not significantly impacted by NotPetya or WannaCry, we are not immune from this type of threat, which is why New Zealand called out these instances of reckless and malicious cyber activity.

A key means through which the GCSB helps protect New Zealand organisations of national significance from these threats is the CORTEX malware detection and disruption programme.

An independent review assessed that in the 12 months to June 2017, CORTEX led to the avoidance of $40 million of harm to public and private sector organisations.

The Government has recently considered how best to extend CORTEX services beyond the current 66 nationally significant public and private sector organisations who receive them.

I will have more to say publicly in this space in the coming weeks.

In closing, thank you for the opportunity to speak this morning. You have a fantastic line up of speakers and I have no doubts that you will find the next two days incredibly engaging.
Global warming is a fact. According to data presented by the US National Aeronautics and Space Administration (NASA), the average surface temperature of the Earth has increased by more than 1 degree Celsius over the last hundred years, and it continues to rise at an increasing rate.

The phenomenon has been recognised by the scientific community for more than 50 years. Since 1988, the Intergovernmental Panel on Climate Change (IPCC) has synthesised and disseminated scientific research on climate change including its likely impacts on the natural and built environment. It is these projected impacts that comprise the threat of climate change to human and national security.

Why is Climate Change a Security Problem?

Simply put, higher ocean temperatures result in more evaporation and thus in increased precipitation and flooding, globally. Warmer waters provide more energy to tropical storms and also result in the thermal expansion of seawater and consequent sea-level rise.

At the same time, higher air temperatures promote the melting of ice and snow, impacting agricultural hydrology in snow-fed river systems and reducing sea ice and degrading the polar ice caps. They promote extreme weather events such as droughts, tornadoes, and forest fires. Together with higher ground temperatures, warmer air also contributes to desertification in drylands and permafrost melting in cold regions.

Atmospheric scientists broadly agree that the principal cause of the rapid, contemporary global warming is the increasing concentration of carbon dioxide (CO2) in the air. The principal source of CO2 is from the burning of fossil fuels -- the oxidation product of carbon and carbohydrates, exhausted into the atmosphere.

As a greenhouse gas, CO2 inhibits the re-radiation of thermal energy from the surface of the Earth back into space, changing the heat balance of our planet. The increased amount of CO2 in the air also crosses the air/water boundary, dissolving in water to form carbonic acid.

Thus, according to the U.S. National Oceanic and Atmospheric Administration (NOAA), the acidity of the Earth’s oceans has increased by about 30 percent since the beginning of the Industrial Revolution. Ocean acidification threatens sea life that depends on carbonate ions for their structure, with consequences throughout the marine food chain. Coral reefs are notably vulnerable to the combined impacts of acidification and warming.

These primary climate effects, which are expected to increase as long as atmospheric CO2 levels continue to increase, have important consequences for the natural and built environment. These include local decreases in fresh water availability, impacts on food production, damage to infrastructure from floods and storms, inundation of low-lying plains, salt water intrusion into aquifers, and the spread of disease vectors to more northern/southern regions and to higher elevations.

Events such as these cause people to migrate, seeking to relocate to a more secure location.

Environmental degradation and disasters comprise a threat to governance, especially in weak or failing states, and thus to national and regional security. They create or
exacerbate the potential for conflict over resources, over migration, and over blame for causing the problem.

Sherry Goodman, Deputy Undersecretary of Defense for Environmental Security under Bill Clinton, famously described climate change as a “threat multiplier,” a label that has become common currency in the security sector.

**What Is the Climate Change Impact in the Indo-Pacific Region?**

In Oceania, the major impacts of climate change on security are anticipated to be the combination of rising sea levels threatening coastal agriculture and infrastructure, combined with ocean warming and acidification and their impact on coral reefs.

These threats to food security and economic viability, and the possibility of total inundation pose an existential threat to atoll island nations, whose populations may have to relocate elsewhere. Coastal regions of New Zealand, Australia, and the fertile deltas of mainland Asian rivers are at similar risk.

Depending upon the rate of global warming, these phenomena will increasingly impact the region throughout the 21st century and beyond.

East Antarctica is currently stable, as increased precipitation and new ice formation outpace melting, but according to the British Antarctic Survey, the western Antarctic Peninsula is warming and ice shelves thinning. Moreover, the Circumpolar Current is warming more rapidly than the ocean as a whole – with negative impacts on the abundance of krill and thus on the whole Antarctic food chain.

As the resource-rich continent becomes more accessible and as global population growth and economic development necessitate increasing resource extraction, competition for fisheries may increase and the Antarctic Treaty System’s mining ban may be challenged. New Zealand’s heritage territorial claim to the lands bordering the Ross Sea could become a tempting target for those hoping to exploit the continent’s resources.

The potential impacts of climate change on Antarctica and its governance are long-term. The current mining ban may be legally reviewed after 2048, perhaps a milestone for reconsidering Antarctic governance and security.

**What Can We Do about It?**

What can the security sector do to respond to and minimize the threat of climate change? We may state at the outset that climate change is a complex problem requiring a whole-of-government, indeed a whole-of-society, approach to manage the threat.

There are four areas for action: mitigation, adaptation, response, and knowledge creation and dissemination. The security sector must participate in all these areas and play a leading role in both response and knowledge creation.

The motive for the security sector is this: to the extent that governance is unable to affect mitigation and adaptation, leading to the disastrous impacts outlined above, it is the security sector that will have to deal with the consequences of conflict.
Mitigation means reducing or minimising the load of greenhouse gases in the atmosphere and thus reducing global warming. The greatest opportunities for mitigation lie in the energy, transportation, and agriculture sectors. The security sector can provide technology demonstration and innovation and demonstrate moral authority by leadership in its own use of energy, transportation, and land use.

Adaptation means planning and action to minimise the negative impacts of anticipated warming. Even the best-case scenario reflecting the 2015 Paris Accord to the United Nations Framework Convention on Climate Change is projected to result in a rise of more than 2.5 degrees Celsius above pre-industrial levels, an additional rise of perhaps 1.5 degrees.

To the extent that mitigation efforts fail, the temperature rise will be higher. Thus, sea levels will continue to rise, and extreme weather events will increase. Adaptation will require the strengthening of coastal and riparian infrastructure, moving certain parts of the population uphill or inland and securing fresh water and food supplies for a growing global population.

Low-lying island states especially will require technical and financial assistance to address adaptation needs.

Disaster response is a traditional responsibility of the security sector. Current projections indicate that natural disasters due to storms, floods, drought and other weather-related events will increase to the extent that mitigation and adaptation fail. Security forces throughout the Indo-Pacific region can expect their humanitarian assistance and disaster relief missions to expand.

Border control in the face of human migration is also likely to increase in importance, as is maritime security and the protection of fisheries. New Zealand must consider the future need to provide sanctuary to Pacific Islanders whose homes have become uninhabitable.

The time to plan for these events is now. Moreover, an expected increase in the scale and density of climate-related disasters imply that effective response will require institution building to support greater preparation and collaboration by security forces across the region to manage effective response to the increasing threat.

Finally, there is a need for better knowledge of the threat – actionable knowledge to support security sector planning, and public knowledge so that citizens can support the security sector as it seeks to meet this emerging, non-traditional threat.

Most of what we know, or think we know, about climate change is the result of academic research into complex phenomena. Research questions are typically set or influenced by funding agencies.

In the areas of atmospheric science, earth science, and environmental science most of the funding comes from basic research agencies. Unlike weapons-related research or command and control-related topics such as cyber-security, the security sector does not generally fund research related to climate change and its impacts.

As a consequence, answers to security issues must be derived from data sets developed to answer related, but different questions. There is a need for the security sector to sponsor and fund competitive research initiatives to provide actionable knowledge to support mitigation, adaptation and response by security agencies.

Conclusion

In summary, our planet continues to experience global warming, primarily due to increasing carbon dioxide in the atmosphere. Higher temperatures will result in rising sea levels and more extreme weather events which in turn threaten food security, fresh water resources and coastal infrastructure.

Environmental degradation and disasters comprise a threat to governance, and thus to national and regional security. Pacific Island nations are especially vulnerable. In the longer term, competition for Antarctic resources may impact New Zealand’s stake in the southern continent.

The security sector has a major stake in the course of climate change because we will be called upon to respond to its impacts to the extent that global and national efforts at mitigation and adaptation fall short.

To manage the threat, security sector leaders must support and encourage global collaboration to mitigate greenhouse gas emissions. They must provide technical expertise and financial support to harden infrastructure and otherwise adapt to the inevitable impacts of further warming both at home and in assistance to

In addition to preparing for a greater number of more extensive humanitarian assistance and disaster relief missions, they should sponsor research and development to create actionable knowledge to support these activities, and they should work to educate the public about the nature and implications of climate change.
This interactive course examines current and emerging challenges to the Asia-Pacific security environment and their implications for New Zealand.

**KEY TOPICS COVERED INCLUDE:**

- the implications of the New Zealand Government policy “reset” towards the Pacific Islands
- shifts within regional geopolitics and major power competition
- the Korean Peninsula and South China Sea
- non-traditional security threats, such as climate change and cyber security
- the security-trade-development nexus
- regional security cooperation mechanisms

**LEARNING OUTCOMES**

- Participants will develop a comprehensive understanding of complex regional security challenges and stategic trends
- Participants will assess the current New Zealand responses to regional security challenges and consider alternative multi-stakeholder collaborative arrangements

**TO REGISTER, VISIT:**
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The expanding role of cyber in national security

Dr Bryson Payne of the Center for Cyber Operations Education at the University of North Georgia writes public and private will need to work together if we are to survive the next generation of cyber-enabled hybrid conflict.

Code. Vulnerable code. It distributes electrical power to our homes, businesses, hospitals and government buildings. It controls the flow of fresh drinking water to the same. It manages our stock markets, supports our border security and food distribution, and even influences our elections. Software is at the heart of our physical security systems, including smart cards, keypads, and biometric access controls that safeguard our businesses, critical systems, and government facilities.

A great deal of attention has been paid of late to cybersecurity as a component of national defence, but there is little discussion, or appreciation, of cyber’s role across and throughout the other components of national security.

Cyber is an important domain of national security, as attested by its inclusion in the national security policies of a growing number of OECD countries, with New Zealand and the United States at the head of the pack. But it is the impact of cyber across the other components of national security that remains to be sufficiently addressed at the national policy level.

In addition to standing on its own as a domain of attack, cybersecurity impacts economic and trade security, ecological and biosecurity, energy and critical infrastructure security, food security, transportation and public health, as well as communications, physical and even political security.

Unfortunately, secure coding isn’t sufficient to address the above concerns, as the Spectre and Meltdown hardware vulnerabilities have shown. First published in January 2018, the Spectre and Meltdown attacks are based on the computer processing chips that run our desktops, laptops, smartphones, automobiles, smart appliances, medical devices, and even our critical national infrastructure. Because these vulnerabilities are in the hardware chips themselves, they remain invisible to antivirus software or other security controls.

These vulnerabilities were first exposed publicly in 2018, but they affect virtually every microprocessor produced from 1995 forward. And while software patches have been applied in major operating systems (Windows, Linux and Mac OS), most so-called Internet of Things (IoT) devices will remain vulnerable until discarded – including smart TVs and appliances, as well as smart building controls and medical devices for which patches are unavailable or rarely applied.

Cybercrime, cyberterrorism, cyberwarfare, cyber espionage, and cyber vandalism all threaten to disrupt systems critical to national security and public welfare. Nation-states, criminal organisations, terrorists/insurgencies, private military contractors, corporations and individuals all play a part both in attacking and defending the public good.

In terms of economic security impact, cybercrime alone will cost the world more than $6 trillion (USD) annually by 2021 according to current estimates. Ransomware, a newly popular class of cyberattacks, cost more than $5 billion worldwide in 2017, including over $1 billion in ransom payouts, with high-profile attacks in the past year on hospitals, banks, utilities, and the city government of Atlanta, the ninth largest metropolitan area in the US, ranked 78th among the 100 largest cities in the world.

As acts of war or terror, attacks on critical infrastructure (communications, energy, food/agriculture, financial, health, safety/emergency services, transportation, water, and IT itself) are possible from anywhere in the world, by individuals, large organisations,
or by nation-states. Information operations and information warfare can achieve a scale and speed never before possible, with the influence of ‘fake news’ postings via social media site Facebook on the most recent US presidential election at the forefront of the news.

In addition to trillions of dollars and millions of hours of productivity lost to cybercrime, economic security can be threatened through industries like finance, communications and transportation. Financial industry attacks include bank hacks, like the $81 million Bangladesh Bank hack that made world news in 2016. But they also include lesser-known but more complex hybrid attacks like the Carbanak malware that was blamed for an estimated $1 billion in fraudulent transactions from 2012-2014.

Stock market attacks, communications disruptions and denial of service (DoS) attacks, and transportation attacks on both traffic systems and autonomous/semi-autonomous vehicles can have a crippling impact on economic activity.

On the energy and public utility infrastructure level, power, gas, and water distribution systems are often run by outdated legacy hardware and software that are rarely patched whether due to lack of availability of updates, lack of funding for maintenance and renewal, or fear of interrupting service. Smart-grid/ smart-city technologies combined with antiquated core systems combine to make dams, renewable energy, and nuclear SCADA (supervisory control and data acquisition) controls and legacy systems vulnerable to attack, even when ‘air-gapped’ or separated from the public Internet.

The 2007 StuxNet attack on Iranian nuclear centrifuges demonstrated that even air-gapped systems with no direct connections to the broader Internet could be penetrated, and many public utilities aren’t as isolated from the Internet as these systems were.

Physical security and human security concerns, in addition to the possibility of cyber or hybrid cyber-kinetic attacks on utilities discussed above, include medical systems, border security, and interference in communications and GPS. Military forces would be impacted by attacks on GPS and communications systems, as well as direct attacks on drones and autonomous vehicles and weapons.

Future cyber and hybrid warfare will be designed to limit the ability of military forces to defend their homeland both physically and virtually.

Finally, disruptions to any of the other elements of national security can threaten political stability and trust in the government’s ability to protect its people. But direct threats to political security through cyber exist as well, including information operations, deception, and information warfare.

The rise of ‘fake news’, manipulation of information via social media, and even election tampering, have given more visibility to the tenuous relationship between perception and reality, with potentially hundreds of millions of users on any of the major world social media systems at risk of being influenced by misinformation or disinformation at a scale and pace once unimaginable.

A generation ago, it would have required taking over an entire national broadcast network to command the attention a few hundred dollars’ worth of well-placed social media ads, photoshopped images, and misleading news articles could garner on social media.

We must address crucial cybersecurity concerns as a whole, across all public and private networks and systems that contribute to the security and stability of our nations if we are to prepare for and survive the next generation of cyber-enabled hybrid conflict. As 85 percent of the infrastructure of the Internet is privately owned, corporatons and private industry will be needed as allies in addressing network-borne threats and device vulnerabilities.

But businesses have a stake in cybersecurity themselves, so national security policies that support better protection for private industry should be well received. An ideal solution, of course, would not impose significant costs, or, in the best case, would be subsidised by national investment in improved security measures and infrastructure for the nation as a whole.

It is at the individual level that developed nations may have the disadvantage: an Internet-connected civilian can unwittingly sponsor or support our adversaries simply by having poorly-protected computing resources on a high-speed network connection, yet cyber education is virtually non-existent for the majority of our populations.

Even in our military forces, user error due to lack of basic cyber hygiene training imperils our best efforts at securing critical systems. A comprehensive national security strategy for the next twenty years must address not only the technologies and the processes involved in each of the components of national security, it must include cyber training and education for the people working across those areas as well.
Countering terrorism where there is ‘apparently’ no terrorism to counter

New Zealanders’ sense of security from the threat of terrorism, writes Dr John Battersby of Massey University’s Centre for Defence and Security Studies, is based on the belief that terrorism happens elsewhere. History tells us otherwise.

The fact remains, terrorism is – and always has been – extremely unlikely here.

The solution is simple: New Zealanders need to wake up to the fact that despite its improbability, terrorism has already occurred here.

Our reaction to it has always been a state of denial - we already have accepted terrorism as normal criminal behaviour, often even forgiven and forgotten it. This has resulted in an overarching and flawed assumption that terrorism is something remote and foreign, which does not happen here.

Terrorism was extremely unlikely to have occurred in New Zealand in the 1970s. Yet during that decade there were 20-30 bombings, fire bombings, deliberate arsons or IEDs located prior to exploding. These were prompted by domestic political reactions to our involvement in the Vietnam War, our sporting contacts with South Africa and French nuclear testing in the Pacific.

In 1975 international terrorism came to New Zealand with a plot uncovered to bomb the High Commission of India by members of a small overseas-based religious sect. The same year, a New Zealand-based Christian religious cult in North Canterbury was raided by police who found over 100 firearms and tens of thousands of rounds of ammunition, apparently in preparation for the second coming of Christ.

These events occurred more than a decade before the Waco incident starkly revealed the potential for closed cults preparing for, and prepared to use, violence.

Terrorism was extremely unlikely to have occurred in New Zealand in the 1980s, but that decade saw an increase in the frequency and lethality of politically motivated violence here.

During the 1981 Springbok Rugby tour there were no fewer than five bombings, four IEDs located prior to detonation, over 30 bomb threats and multiple death threats recorded against rugby players, rugby union officials or police officers. Two people were arrested intending to take firearms to crowded locations to shoot at those protesting against the tour – terrorism was evoked on both sides of the tour divide. However, the largely anti-
tour dominant record has deliberately omitted the uncomfortable reality of the terrorism it evoked, presumably lest it tarnish those otherwise engaged in a noble cause.

Later in 1981, a shot was fired at Queen Elizabeth during her visit to New Zealand – if the shot had struck her – the Head of State of over a dozen countries would have been gunned down on New Zealand soil. The ramifications of that would be impossible now to quantify. Fortunately the bullet missed, the incident was kept quiet, and we continued on as if nothing had happened.

The following year, another lone actor exploded a bomb inside the foyer of the National Police Computer Centre, killing himself. A bomb exploded in the Wellington Trades Hall killing its caretaker in 1984, to be followed a year later by the sinking of the Rainbow Warrior in what was the most highly organised terrorist conspiracy ever to occur here. In 1987, an Air New Zealand flight was hijacked in Fiji, following the military coup that had just taken place.

In the twenty-first century, terrorism remains unlikely in New Zealand, but all the same, threats to contaminate public utilities were made in 2003. In 2007, activists using Urewera forest camps for ‘training’ were disrupted by a much criticised police operation - the nature of the activities of those activists has never been fully explained.

In 2014, threats to contaminate milk products if the use of 1080 poison in New Zealand did not cease, cost the country an estimated $37 million in lost income. More recently, individuals have been prosecuted for possession of jihadist propaganda. New Zealand’s most well-known foreign fighter, Mark Taylor, called for sympathisers to mark the centenary of the Gallipoli landings by attacking police officers or soldiers on ANZAC Day 2015.

In recent months, several threats have emerged to damage structures and harm DOC staff over the continued used of 1080 poison.

Despite all of this, not a single individual involved in any of these events has ever been prosecuted for terrorism. This is clearly not because of an absence of violence, or threats of violence, undertaken deliberately to influence the political environment of the day.

The reason for our reticence is because we have preferred to adopt a culture of denial - not accepting that acts of political violence have happened here, and that they can, and will, happen again. On top of this, our record of being a reluctant legislator assists the assumption of terrorism's absence here.

In 1987 New Zealand enacted backward looking legislation, which lacked the flexibility to adapt to future changes in the international terrorism landscape. In 2002, we did the minimum necessary to meet international obligations in legislation that was otherwise unreferenced to a practical counter-terrorism strategy developed for New Zealand conditions.

The faults and flaws of the International Terrorism (Emergency Powers) Act 1987 and the Suppression of Terrorism Act 2002 have been discussed in a previous issue of Line of Defence.

Compounding the problem of terrorism’s invisibility here is our Public Records Act, which allows agencies to defer the transfer of records to National Archives on national security grounds, potentially indefinitely. This compares unfavourably to Australia where all agencies must transfer their holdings and assess classified material for release after 20 years.

In New Zealand, there is no such clarity, leaving much of our national security past hidden from critical and academic review, unless – in a process that resembles a game of ‘pin the tail on the donkey’ – some intrepid researcher manages to pry out files using the Official Information Act.

The mantra of greater transparency and of demystifying ‘national security,’ has been preached by a number of noted practitioners across the security sector - but much of our past remains inaccessible.

The assumption that we are safe from terrorism is an optical illusion we have created for ourselves. Terrorism has always been unlikely here, but that does not make us safe from it.

Ideas that have prompted threats or acts of violence have always been able to germinate here, and other impetuses have travelled here from outside. The harnessing of cyberspace as a conveyor of terrorist ideology has made dangerous ideas more accessible.

The ad hoc approach we have taken over the last fifty years, has functioned more by good luck than good strategy – and in a rapidly changing, high technology world – the future will need a more considered approach.

We can prepare for something that may never happen; or we can wait until some atrocity is actually carried out here, and after the fact join the chorus demanding to know why no one took steps to stop it.
After a year of rising tensions that saw North Korea accelerate its ballistic missile and nuclear weapons program, the diplomatic equation may have fundamentally changed in recent months. The first shock came in March, when US President Donald J. Trump agreed to meet with North Korea’s leader, Kim Jong-Un.

This meeting, scheduled to take place in Singapore on June 12, will be the first ever face-to-face between a sitting leader of North Korea and the United States. Since Trump agreed to meet Kim, there has been a flurry of diplomatic activity. The leaders of North and South Korea met for an inter-Korean summit in April; Kim Jong-Un made two trips to Beijing; and Japan and Russia are scrambling to try and secure their own summits.

No major state in the region wants its interests ignored during what might prove to be an immense geopolitical transformation on the peninsula.

So what has changed? Well, quite a lot. For a start there is the Trump factor. Trump is a ‘tactical opportunist’. He has an acute sense of the moment, making short-term decisions that he feels will politically benefit him. Furthermore, Trump is not a traditional politician wedded to the normal diplomatic procedures that would almost certainly have prevented a more traditional US president from agreeing to meet Kim. Trump’s penchant to personalise US foreign relations may also, in the case of North Korea, be the perfect catalyst for generating a diplomatic breakthrough when they meet in June (admittedly, it also comes with a risk that the meeting’s failure could have grave consequences).

Meanwhile, in Pyongyang, the new generation of leaders are not weighed down with the history of having fought to secure North Korea’s independence in the 1950s. Nor were they alive for much of the Cold War and schooled and indoctrinated in the Communist world.
The new generation – often educated in Western Europe – may be more willing to open up North Korea and, by being divorced from the creation of North Korea and educated in the Western technocratic-style, will have greater claim to leadership positions in a future unified Korea.

Furthermore, the perceived benefits of unification may be growing. This owes itself to regional power dynamics, where the rise of China and the regional balancing it is inducing will place pressure on the Koreas, who will be stronger together rather than apart.

One other change, and not a positive one, is that the growing optimism over the Korean peninsula comes at the same time US-Chinese relations are deteriorating.

While Trump’s first year in power was characterised by a charm offensive vis-à-vis China, the gloves have now come off. The recent US National Security Strategy and National Defence Strategy labelled China a revisionist power that “seeks to displace the United States in the Indo-Pacific region”.

The increasing US military budget, warming ties between the US and Taiwan (a state Beijing considers a ‘renegade province’), trade tariffs levelled against China and, indeed, the recent diplomatic initiatives involving North Korea should be viewed in this context.

The US may very well be looking for areas around China’s periphery where it can place pressure on Beijing. Forging the North Korean crisis into a trilateral Seoul-Pyongyang-Washington diplomatic format that excludes Beijing would do precisely this.

So what does this mean for New Zealand? Clearly, a diplomatic breakthrough that leads to a denuclearised Korea would conform with Wellington’s longstanding, and recently re-energised, dedication to nuclear non-proliferation. A fully denuclearised, yet still isolated, North Korea will ensure conflict remains a possibility and regional tensions high. Yet, there are also wider regional implications to any resolution.

As such, the best outcome would be an agreement that includes all regional players, and not one where Seoul and Washington resolve the crisis without Beijing sitting at the table. This could simply lead to the solution to one long-standing crisis but the emergence of another, as the US-China strategic competition moves to centre stage with Beijing chaffing at being humiliated and potentially strategically disadvantaged by being excluded from a diplomatic resolution on its doorstep.

This is the hidden danger of success. As such, to the extent New Zealand has a voice and can encourage the primary actors to take positions that have the best chance of ensuring stability throughout the Asia-Pacific region, it should be to encourage negotiations that will include all the major states in Northeast Asia.

Dr Reuben Steff is a lecturer of International Relations and Global Security at the University of Waikato. His latest book, co-authored with Dr Nicholas Khoo, is Security at a Price: The International Politics of US Ballistic Missile Defense (Rowman & Littlefield, November 2017).
Beyond Aid: A Pacific Reset

Josie Pagani, Director of the Council for International Development (CID), writes that with the Pacific Reset New Zealand should rethink the nature of its relationship to the Pacific from aid and to real partnership.

It was the first bit of good news for the international NGO sector in New Zealand for a long time: a budget increase of $715 million in aid over four years.

It’s overdue and it only takes us up to 0.28 percent of Gross National Income (GNI), but after lurking at the bottom end of the OCED for the last decade at 0.22% of GNI, New Zealand can hold its head high.

A thirty percent increase in the aid budget means we can do our bit as global citizens in some of the most challenging regions in the world, including South Sudan, Syria, with the Rohingya refugees in Bangladesh, as well as in our own region of the Pacific.

Spending money to give young men jobs not guns, to give kids an education, vaccinations so they make it to school in good health, build houses that don’t collapse in a cyclone, or simply to support communities to survive and speak out in conflicts and refugee camps, is not only the right thing to do, it increases security.

Getting development right is inextricably linked to better security. Communities can’t develop without security, and you can’t have security if people are given no positive options to lift themselves out of poverty.

Sometimes it’s so linked, New Zealand NGOs can find themselves working alongside our defence forces, and if we do it right, we’re all better off for the collaboration. In 2016 after Cyclone Winston in Fiji, together we managed to reach 20,000 people in just 72 hours.

But what really made us sit up and listen this year was not just the announcement of more aid money, but the promise of a Pacific Reset.

A ‘reset’ allows us to test everything we do against the simple question: is anyone better off for New Zealand’s contribution? It gives us an opportunity to come up with a new template for aid work and security.

We need to do this because the Pacific is not the benign environment the tourist pamphlets would have us believe. Some countries have not had democratic elections in decades. Others have no local government and therefore no local representation, and community groups are often silenced if they raise their voices against a sitting government.

Josie Pagani is the director of the Council for International Development and director of a boutique public affairs consultancy. She has previously been a manager at the OECD in Paris, and a communications manager for New Zealand’s aid and development agency.
26 percent of young people are unemployed in Tonga. There are independence referendums coming up in New Caledonia and Bougainville; and we know that the Pacific is becoming a key playground for geopolitical power struggles. China became the largest foreign investor in Fiji in 2016, accounting for over 40 percent of all investment that year. Russian arms shipments to Fiji that same year raised alarm bells.

We also know it’s time to move beyond a welfare model of aid where donors (New Zealand) ‘do’ development to beneficiaries (Pacific communities). People in the Pacific want economic independence rather than dependence on aid, and the New Zealand public want to move beyond an aid framework (because otherwise, why not deal with poverty at home first if it’s just about handing over money?). First we need to rethink the nature of our relationship to the Pacific. It’s not simply a foreign affairs arrangement. We’re too close for that. We’re family.

About 2,000 people live in Niue, while 24,000 Niueans live in New Zealand. 15,000 live in the Cook Islands and about 62,000 Cook Islanders live in New Zealand. Already one in five New Zealanders have Maori or Pasifika heritage, and the trend is growing. That gives us something that no other donor in the Pacific has (including China): a Pacific diaspora who identify as both New Zealanders and Pacific people.

These communities have already re-set the old aid relationships. These are Pacific business groups based in New Zealand, health organisations, Pacific women’s groups, New Zealand NGOs, and iwi organisations. They are devolving responsibility for development to the Pacific and waiting for governments to catch up.

Ultimately, we may see a Pacific Union, modelled on Europe, where labour and capital move more easily from country to country. In the spirit of reciprocity, Pacific states could commit to standards, just as countries wanting to join the European Union have to prove their commitment to democracy.

What better way to promote our values of human rights, freedom of expression, and democratic institutions, gender equality, workplace standards and access to health and education for every child?

The Pacific reset is our chance to lead the world in moving beyond aid, to do development differently. It’s what real partnership looks like.

We share a region, a climate and family ties. And families look after each other, share their talents, hold each other to account. That’s what a secure and prosperous Pacific looks like.
The Pacific has a longstanding regional security framework comprising security declarations, coordination and cooperation by law enforcement agencies, including with international agencies, and fora for identifying and agreeing responses to security threats. The most recent articulation of key security trends and challenges is referenced in the outcomes of the meeting of Forum Foreign Ministers in August 2017. They include global power relations, challenges to multilateralism, increased incidence of transnational crime and illegal fishing, and health, environmental, economic, human and cybersecurity threats. Foreign Ministers also highlighted the negative impacts of climate change and environmental degradation on development gains, economic growth and human security challenges.

Reference was also made to the importance of addressing the ongoing consequences of nuclear testing and upholding the South Pacific Nuclear Free Zone established under the Rarotonga Treaty and other disarmament and non-proliferation treaties; and concern with instability and current tensions on the Korean Peninsula.

While remoteness does not protect Pacific Island Countries (PICs) from external threats or geopolitical uncertainty in our interconnected world, it is contended that the priority for Island countries are human security challenges, where human security is defined as “the right of people to live in freedom and dignity, free from poverty and despair”. This requires looking beyond a state-centric notion of security and instead people-centred responses to challenges as diverse as climate change, rapid urbanisation, unemployment, food insecurity, depletion of natural resources, violence against women, and post-conflict reconstruction.

In the Pacific Islands, there is rising inequality in incomes and access to economic and social opportunities. We have witnessed in Solomon Islands, Tonga, Fiji, Vanuatu, Papua New Guinea, and New Caledonia the consequences of social inequality and their vulnerability to being manipulated by political interests.

The small, remote and fragile island countries suffer from natural constraints, external shocks and internal bottlenecks that make achieving and maintaining inclusive growth a constant challenge. Their high exposure to climate change and more frequent and extreme natural disasters increases the costs and risks of doing business and delivering services.

Additionally, their narrow economic base and reliance on a few often-volatile sources of revenue, make them vulnerable to economic shocks. This is compounded by stretched public administration capacity that constrains strong economic governance and public service delivery.

Although there have been development gains – and extreme poverty is rare in Pacific Island countries – hardship is widespread across the region, particularly for disadvantaged groups, rural populations, fast growing urban settlements and outer islands. Employment opportunities are limited especially for women and young people, making them vulnerable and reliant on remittances.

This is compounded by poor governance by parliaments, constitution making bodies and electoral institutions in the performance of their core functions; weak capacities and capabilities of independent and integrity institutions; and challenges to the rule of law, judicial independence and the development of judicial services.
Without governance that is transparent inclusive and accountable, there will continue to be growing inequalities, political, social and economic marginalisation, and the exclusion of different segments of the population, leading to insecurity and conflict.

The New Zealand Government has signaled a new re-energised Pacific Strategy based on mutual respect, underpinned by a set of guiding principles and increased technical and financial support to the Pacific. The reset is driven by New Zealand's Pacific identity, New Zealand's national security (which is directly affected by the Pacific's stability), and support for shared prosperity to enable Pacific Island Countries to achieve sustainable economic growth and improved public financial management.

The symbolism of both the Prime Minister and the Foreign Minister’s first formal foreign policy statements focusing on the Pacific will have been duly noted and welcomed in the region. Similarly, the Prime Minister’s first overseas visit being a Pacific tour.

The new Government is saying and doing all the right things so far, but as the Foreign Minister has noted, the Pacific leadership is changing and the post-colonial Pacific leaders are increasingly confident, independent and assertive – regionally and internationally.

They, together with the people of the Pacific, will be waiting to see whether there will be any real changes in policy, approach, and assistance. There has been the US pivot, and the Pacific is waiting for Australia to deliver its step-change in its engagement with Pacific Island countries.

Due to New Zealand’s smaller size and being the home of the largest Pacific diaspora, it has been perceived in the past as having a better understanding of the Pacific, and it has played a mediating role between the island countries and our biggest neighbour.

The Government’s intention to rebuild its diplomatic corps to ensure the right people are on the ground and in the Pacific in particular will be crucial for ensuring depth of understanding, facilitating frank and open conversations, and appreciating the impacts of New Zealand’s policies on the Pacific.

To achieve collective ambition and support greater autonomy and resilience amongst Pacific countries will require building trusted relationships at the political level and with senior officials. Most importantly, it will require listening to and responding to the priorities of the island countries and not only to New Zealand’s national interests.

As the Foreign Minister has acknowledged, there is a need to look at the things that have been put in the “too hard basket”, such as pension portability and biosecurity rules that stop the export of fruits to New Zealand. This should also include delivering on PACER Plus and allowing visas on arrival for Pacific tourists equivalent to the existing 60 visa waiver countries.

Climate change, with its existential threat to some of the low-lying atolls, and its impact on the social and economic security of all Island countries, has been a divisive issue between island countries and Australia and New Zealand.

The New Zealand Government’s commitment to limit temperature increases to 1.5 degrees Celsius and a net zero target of emissions by 2050, with the interim step of 100% renewable energy by 2035, and phasing out the use of coal generation, will be welcomed by island Leaders – as will be the offer of refuge for climate change-affected populations in the Pacific.

Similarly welcomed will be the Government’s intention to expand the size of New Zealand’s official development assistance programme with its weighting toward the Pacific.

The Government’s foreign policy statements has referred to the ‘contested space’ in the Pacific as causing a degree of strategic anxiety. One hopes that this is not the real driver for the step-up and reset policies of the two most developed countries in the region.

Low economic growth, development priorities unable to be funded by national budgets and a decrease in assistance by traditional partners have led to island countries looking to ‘non-traditional partners’, with China being the largest. At the same time, it should be noted that China has been a longstanding partner for many countries in the region.

However, it is not only China that is assisting the region. There is also renewed interest by India and Russia, and new players such as the UAE. But these are not at the scale of Chinese assistance, which is predicted to surpass New Zealand’s as the second largest to the Pacific.

Concerns with Chinese assistance and expanding presence have been well traversed. In particular, the opaqueness of China’s assistance, the quality of infrastructure being built by Chinese contractors and the lack of provision for maintenance, Chinese loans leading to debt distress, concerns over China’s assistance ‘masking’ its geostrategic ambitions in the Pacific, and China’s role as a source of transnational organised crime.

From the island countries’ perspective, China provides funding for solid infrastructure (roads, bridges and buildings) whereas traditional donors have tended to focus on policy reforms by highly paid consultants.

China’s policy of non-interference contrasts with Australia and New Zealand’s emphasis on the ideals of human rights, the rule of law, transparency, good governance and the promotion of democracy; and occasionally sanctions. China’s assistance is perceived to be with no strings attached, but this is debatable given the use of Chinese companies.

Pacific Islands Forum Leaders have committed to the principles of good governance, human rights and democracy, but are not appreciative of being lectured either publicly or privately. This includes the topic of accepting assistance from China.

Good governance, human rights, transparency, and democracy are central to security and development. This is the balancing act and challenge for the New Zealand Government as it moves forward with its promised recalibrated relations with Pacific Island countries: to uphold its principles while also being respectful of Pacific Island Countries so that it can maintain its influence in the Pacific and assist PICs in their priorities.
The concept of national security in New Zealand is familiar to government officials and academics but arguably is not part of the wider societal narrative. Of surprise to many may be that New Zealand has had a comprehensive approach to national security (though less than now) since 1987, when coordination of national security matters was formalised in the Office of Coordinator of Domestic and External Security.

This change reflects a gradual expansion of the traditional view of national security that focused on external threats and military responses. In the 21st century, the global complexity and interconnectedness of human activity have highlighted that threats to the environment, the economy and public health are also matters of national security.

The Al Qaeda 9/11 attacks in 2001 highlighted that threats to national security can also come from within the state, and from non-state actors.

The US response was to focus on homeland security, with its implied inward-looking focus. We could conclude from this that national security could be either a ‘within borders’ matter or an ‘outside borders’ matter.

However, global interconnectedness muddies this distinction – for example, overfishing in international waters threatens the food supplies of many states; terrorist propaganda on social media can radicalise young people anywhere; cyber-attacks can come from anywhere; risks such as pandemics and disruptions to the global trading system may originate in one state, but also have flow-on effects to others.

It is therefore clear that national security can incorporate cross-border and domestic aspects simultaneously.

Out of discussions at the National Security Conference came the message that civil society in New Zealand wants to be – and needs to be – more involved in this comprehensive idea of national security.

Jim Rolfe, in his 2015 article in the New Zealand International Review, opined that “the New Zealand public has to accept what is being done in its name and often the public has no basis for knowing what actually is being done.” The Conference discussions highlighted that at the core of ‘not knowing’ was a lack of common understanding of the concept of national security as used by the government.

Here we see a potential problem. If the New Zealand public understands national security in a different way from the government of the day, the legitimacy of that government’s actions might come into question. This could in turn constrain civil society support for and involvement in measures to protect national security.

Indeed, in recent times, the scrutiny directed towards surveillance powers and transparency of classified information suggests a public not wholly persuaded by the government’s approach in these areas.

This discussion is but a starting point. The programme of the National Security Conference started a move toward including civil society issues. While it began with global and regional threats, narrowing down to economic and trade security – involving domestic interests affected by global trends, the new element was on more domestically-focused security issues.

However, a core question still to be answered is what meaning the New Zealand public ascribes to the term ‘national security’.

Is it different from the state-centric meaning? What are the security priorities of different New Zealand communities and is there a gap between these priorities and what the government of the day assigns resources to? If so, what are the implications of this gap for national security?

Societal discussions on these sorts of questions do not appear spontaneously. The National Security Conference can initiate discussions, but other means are needed to develop them into a national conversation.

Research can contribute to the conversation. Another avenue suggested at the conference was the creation of a business network focused on national security. These would be small but promising steps in an area where there is much to be done.

Dr Germana Nicklin is a Senior Lecturer and Deputy Director at Massey University’s Centre for Defence and Security Studies. Much of her over 30 years experience in the public sector was with the New Zealand Customs Service. Her area of expertise is border security.
Emerging disruptive technologies, such as Artificial Intelligence (AI) and robotics, now play a ubiquitous role in everyday life, including in the manufacture of goods and services, GPS systems, user-interface software, and in self-driving vehicles.

Internationally, Unmanned Aerial Vehicles (UAVs), such as drones, are being used extensively in counterterrorist operations, while the advent of Lethally Autonomous Weapons (LAWs) raise ethical questions about the use (and misuse) of military power.

Furthermore, the most powerful states and private corporations are investing heavily in a range of disruptive emerging technologies. These complex systems are having an impact on national security establishments and are beginning to reshape military and strategic interaction across the international system.

Other emerging technologies contributing to the complexity of international security dynamics include (but are not limited to) advanced manufacturing techniques (incorporating 3D printing), nanotechnology and quantum computing (including the miniaturisation of military technology), bioengineering (such as the development of biological weapons agents and human-machine symbiosis), and digitisation technologies (such as military tools and applications to manage ‘big data’).

Little research has considered how advances in these fields at the global level will affect New Zealand’s security, and what they mean for small states and their sovereignty in an increasingly integrated yet unstable world.

This symposium aims to contribute towards filling this gap. It will bring together a range of international and national experts, and postgraduates students in New Zealand, working in this area or that are simply interested in learning more.

Abstracts by scholars and students on the security implications of emerging disruptive technologies are welcomed. Key questions that presenters may want to consider include:

- How are developments in disruptive emerging technologies affecting international peace and security?
- How do we conceptualize and make sense of this new technological era?
- Can these technologies be utilised to enhance security in the military, intelligence, commercial and governmental sectors, and to protect states against evolving threats?
- How will these technologies alter the Asia-Pacific and global balance of power? Are technological arms races, balancing and security dilemmas inevitable (and in what spheres are they already underway)?
- What are the international political, ethical and legal implications of the adoption of these technologies in the military and security sectors, and are there certain technologies New Zealand should seek to restrict with treaties, international regulations, norms and policy?
- What can be learned from prior transformative military technologies about how advances in emerging technologies will affect international security?
- What are the implications of advances in these fields for small states and what targeted investments should they be making to ensure they are not left behind?
- Are emerging technologies leading to the ‘democratisation’ of violence, and empowering non-state actors at the expense of the state?
- What responsibilities do political leaders and citizens have for the disruption to economies and society emerging technologies are producing?
- How do we keep representatives and businesses accountable? How do we manage personal privacy concerns in an age of ‘big data’, and how do we balance the desire for personal ownership over online data against the need to use it to fuel emerging AI software?
- What threats do emerging technologies pose to open societies and liberal democracy, and how can they be addressed?
- What negative trends in international affairs are emerging technologies exacerbating?

Abstracts are due 30 August 2018, with the symposium to be held at the University of Waikato on 20 September. For registration details and submission of abstracts please email rsteff@waikato.ac.nz
The Kiwi Difference: New Zealand as a model for governments connecting with their Muslim communities

Aliya Danzeisen, lead coordinator of the Women’s Organisation of the Waikato Muslim Association (WOWMA), writes that Muslims in New Zealand have avoided the marginalisation experienced by Muslim communities in North America, Europe and Australia.

The Muslim population of New Zealand, of which I am part, is a vibrant, content and engaged community. We believe in democracy and have embraced it.

In comparison to our Western counterparts, there has been no exodus of young Muslims heading overseas to fight, nor have there been any major acts of terror within our country. As we say in our community, Alhamdullillah (Praise be to God).

There are reasons for the settled and engaged nature of Kiwi Muslims. Two years ago I was invited to a summit on countering violent extremism, an event on the margins of the United Nations General Assembly. A young male participant asked me why representatives of New Zealand were present at the event given that our country had almost no experience of terrorism. My response was that this is precisely why New Zealand should be at the table. I still believe this is true.

New Zealand provides positive role model
There is a positive difference between the way the New Zealand government works with its Muslim communities and the way governments in Europe, the Americas and, even across the ditch in Australia, do. I define this as the “Kiwi Difference” and believe it should serve as a model for others to emulate. That difference is explained below.

New Zealand has a relatively new, largely migrant, Muslim population. Our demographic makeup is broadly similar to that of our OECD counterparts but it does vary, in some respects, from New Zealand’s general population.

In New Zealand women outnumber men, but within its Muslim community males dominate (52 percent male to 48 percent female). The Kiwi Muslim population is also significantly younger than the general population, with over 65 percent, or nearly two-thirds, under the age 35. In contrast, 44 percent of the general Kiwi population is of the same age demographic.

We have fewer elders. Less than five percent of our Muslim community are over the age of 60 in comparison to approximately 20 percent of all New Zealanders.

Kiwi Muslim community “superdiverse”
The Kiwi Muslim community is significantly diverse. Actually it’s “superdiverse” within a “superdiverse” country. A quarter of the population have been born in New Zealand. Nearly 20 percent were born in the Pacific Islands, 25 percent were born in Asia, another 22 percent were born in the Middle East or Africa.
The remainder fall into a category best described as individuals with unique backgrounds. On any given day, for example, a visitor to the Al Jamii Mosque in Hamilton will find individuals from over 50 nationalities speaking a variety of distinct languages who come from a plethora of different cultural and ethnic experiences.

So overall, New Zealand has a young, diverse, male-dominated, largely migrant Muslim community with few elders. This is similar to the situation in other Western countries. So why are New Zealand Muslims so settled in contrast?

Several factors account for this difference. The first is that New Zealand’s core structures and values are consistent with Islam.

In 2010 two Muslim professors based in the United States published an “Islamicity Index” that assessed how “Islamic” countries were, by looking at how consistent country’s laws, policies and procedures were to the core teachings of Islam. The professors considered a country’s economic, legal and governance structure, its human and political rights record, and international relations policies.

When the Index was first applied, New Zealand was found to be the most “Islamically-compliant” country in the world. The study has been conducted at two-year intervals since, and New Zealand is regularly placed in the top five. The average Kiwi may not know this, but most Muslim New Zealanders think this open, democratic country is more Islamic than most Islamic countries and take pride in that fact.

Three stakeholders committed to positive change

In my opinion, however, the most significant reason for the “Kiwi Difference” is New Zealand’s willingness to invest in people. He aha te mea nui o te ao. He tāngata, he tāngata, he tāngata - What is the most important thing in the world? It is people, it is people, it is people.

Within Aotearoa, three key stakeholders, in particular, are making a positive contribution to the Kiwi Muslim experience.

First I would like to acknowledge the effort that Māori have made, and are still making, to facilitate the integration of the multicultural migrant into this country. At the signing of the Treaty of Waitangi, when iwi leaders negotiated with the Crown, they sought assurances that diverse beliefs would be accepted and welcomed.

Ever since, Māori have been at the forefront of rights advocacy and have fought for minority community views to be given their rightful place in general society. Those efforts have had a significant impact on reducing the separation and racism that Muslims experience.

Similarly, the concept of manaakitanga (hospitality), which Māori offer to care for and support their multicultural manuhiri (guests),
has provided migrants with important opportunities to connect to the land and its people in a profound and positive manner. As a result, members of our growing Muslim population feel part of this society and its traditions.

**Muslim community willing to engage**

The second stakeholder group is the Muslim community and its leaders. Muslim leaders have demonstrated a willingness to engage with their counterparts in central and local government agencies and in other communities.

In the years following September 11, 2001 Muslim leaders have met regularly with government stakeholders, media and other relevant organisations to ensure our community’s views on emerging issues are taken into account and that New Zealand’s reputation and standing is protected globally.

Several Muslim communities have been proactive in developing opportunities for its growing population to practice Islam in a Kiwi context by encouraging their whānau to embrace their Kiwi identity and reach out to the wider community. This has been done through many avenues, not just through the pulpit or within the mosque.

Once again, the Hamilton Muslim community provides us with another example. For the last ten years they have supported the Women's Organisation of the Waikato Muslim Association (WOWMA) youth programme for Muslim females. The hundreds of young women who have taken part in this programme have received leadership training and have been given opportunities to become more involved in a variety of different community projects.

These young women learn about the history of New Zealand. They are able to connect to the outdoors through educational challenges such as caving, skiing, waka ama. They learn that they too can care and guard this land and its traditions.

**New Zealand government as stakeholder**

Thirdly, the willingness of the New Zealand government to talk with, and invest in Muslim communities is an important aspect of the positive Kiwi Muslim experience. Following the leadership example of Helen Clark, prime ministers and other high-ranking officials have visited mosques and taken part in discussions about community issues. This dialogue has been substantive and continued.

At a practical level government agencies have offered small grants to assist the Muslim community support its members.

The WOWMA programme came about as a result of ‘a push’ by a manager at the Ministry of Social Development who raised concerns about the way Muslim girls and young women were integrating. She challenged five adult Muslim women to do something about it.

The manager offered capacity building opportunities and seed money to get a programme started. MSD allowed the Muslim women to design the programme, and the young participants to decide for themselves what they needed to progress in life.

This willingness to invest has paid dividends. Over 300 young women have taken part in the programme and are already showing advanced leadership skills and adding value to their own and the wider New Zealand community. Many have developed a strong desire to go into public service here in New Zealand.

The long standing willingness of these three groups – Māori, Muslims and the Crown – to invest in people in an open and forward looking manner continues to pay dividends in ensuring the safety and success of multicultural New Zealand. This is not to say that problems don’t exist or that more is not needed to be done.

**It is people**

If we go back again to that well known Māori whakatauki - He aha te mea nui o te ao. He tāngata, he tāngata, he tāngata – What is the most important thing in the world? It is people, it is people, it is people - we can always find a practical and successful path forward.

We do this by ensuring all new New Zealanders are welcomed and given a place within our society and by supporting them to take advantage of the opportunities offered by this wonderful country with its tradition of transparent democratic governance.

Most importantly, we can do this by acknowledging the generosity and leadership shown by tangata whenua in welcoming us and helping us connect to the land that we feel privileged to live in and call our home.

Canterbury Mosque, Christchurch, until 1999 the world’s southernmost mosque. Wikipedia.
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