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AUSTRALIAN EA-18G GROWLER: STRATEGIC ASSET OR EXPENSIVE TOY?

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Exercise Solo Flight

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INTRODUCTION

The armed forces can play a vital role in establishing a nation's relevance in the international community through their demonstrated ability to shape the security environment, deter potential adversaries and respond to national security threats.

– The Air Power Manual¹

Plan Jericho is the Royal Australian Air Force (RAAF) roadmap to maximize air power and win the fight in the information age.² Part of the plan is the purchase of the EA-18G Growler which is due to meet Initial Operating Capability in 2018. The recently released 2016 Defence White Paper outlines that Australia's strategic defence interests have not changed, however it is more challenging to maintain a technological edge within the region. As Asian military forces modernize and the United States (US) does a pivot to meet the Asian Century the focus will be on fostering a stable and secure regional order.³ Australia walks a delicate balance, geographically between Asia, the Pacific and Indian Oceans and diplomatically between China and the US for economic prosperity and security respectively. The introduction of Growler and its niche capabilities will impact this balancing act and must be considered with reference to the national security strategy.

Growler is capable of providing Suppression of Enemy Air Defence (SEAD) and Electronic Warfare (EW) in a contested air environment. A dedicated SEAD platform greatly increases the potency of strike aircraft and is in line with Australia's deterrence defence policy.

¹ Royal Australian Air Force, AAP 1000-D, *The Air Power Manual*, 6th ed. (Canberra: Air Power Development Centre, Department of Defence, 2013), 31.

² The Oxford Dictionary defines the current information age as “the era in which retrieval, management, and transmission of information, especially by using computer technology is a principle (commercial) activity.” Oxford Dictionary, “Information Age,” last accessed 8 May 2016, <http://www.oxforddictionaries.com/definition/english/information-age>.

³ Coral Bell, in *Australia as an Asia Pacific Regional Power*, edited by Brendan Taylor, Foreword (Abingdon: Routledge, 2007), xii. Asian Century, or Asia's Century, is the transformation of Asian states from prizes in world diplomacy to players of their own accord. There is expected to be continued growth in Asia's strategic, diplomatic and economic importance over the next century akin to the British 19th and US 20th centuries.

Historically, dedicated SEAD aircraft have been considered unaffordable for small air forces including the RAAF.⁴ With the Growler project costing A\$3.7 billion the Australian public expects justification for the expenditure. This is borne out in several ways. The first consists of the three primary capabilities to be provided; land strike, maritime strike and counter Integrated Air Defence Systems (IADS).⁵ A close interoperability with the US Navy (USN) is also expected and is directly referenced in the USN's vision for 2025.⁶ A potent strike force for deterrence and a strong US partnership are the cornerstones of the Australian security strategy. Growler significantly enhances both.

This paper will argue that the decision to purchase Growler for the RAAF goes beyond the military capability and is entrenched in the centre of Australia's security strategy. The acquisition will be contextualized with the following considerations; the capabilities that will be delivered, Australia's strategic outlook as laid out in the 2016 Defence White Paper and the RAAF's vision for the future force structure with Plan Jericho. An analysis of the elements of Australia's national power utilizing the Diplomatic, Information, Military and Economy (DIME) model will be conducted to assess the strategic impact of adding Growler to the RAAF inventory.⁷ Employing air power through exploitation and denial of the electromagnetic spectrum (EMS) will be significantly enhanced with Growler; however the benefits need to be carefully measured against the diplomatic relations within the region and alliances beyond. The effect on foreign policy and Asia-Pacific stability requires a deeper understanding of the

⁴ S.J. Osborne, "The Royal Australian Air Force's Achilles Heel: The Suppression of Enemy Air Defences" (College Command and Staff Course New Horizons Paper, Canadian Forces College, 1998), 3.

⁵ Royal Australian Air Force, Air 5349 Phase 3, *EA-18G Growler Capability Realisation Plan, V3.0* (Canberra: Air Combat Transition Office, Department of Defence, 2014), 19.

⁶ United States Navy, *Naval Aviation Vision 2014-2025* (Naval Aviation Enterprise, 2014), 27.

⁷ Royal Australian Air Force, AAP 1000-D, *The Air Power Manual*, 6th ed. (Canberra: Air Power Development Centre, Department of Defence, 2013), 17.

capabilities being acquired and regional dynamics to ascertain if the purchase is simply adding to the military modernization in the region or is the sound application of national strategy.

THE RAAF AND GROWLER

Growler will be a major step for the RAAF towards a fifth generation air force. The RAAF is embarking on the biggest capability upgrade in its history; by 2022 the oldest aircraft in the inventory will be the C-130J Hercules.⁸ New capabilities are at the forefront of this change. Fifth generation fighter technology will be available with the F-35A, strategic airlift capability has already been realized with the C-17 and the MRTT and the introduction of MQ-4C Triton will see the RAAF establish a permanent Unmanned Aerial Vehicle (UAV) capability. However, Australia is not alone with the current emphasis on modernization. Asia has now overtaken Europe as the region with the largest annual military expenditure and the impact of regional modernization is keenly felt by defence planners. Australian security analyst, Dr Andrew Carr, identified two major strategic disadvantages for Australia; the large geographical area that must be protected and a relatively small population from which to draw a military force.⁹ Overcoming these disadvantages is achieved by maintaining a technological edge and through superior training. The former is clearly identified in the 2016 Defence White Paper as the basis for Australian Defence Force (ADF) modernization.

The Australian Government released the latest Defence White Paper on 25 February 2016. Maintaining a technological advantage requires an increase in expenditure to two percent of Gross Domestic Product (GDP) within the next decade. Australia has previously enjoyed a

⁸ Ian McPhedran, "The Royal Australian Air Force set to take delivery of new EA-18G Growler attack jets," last modified 31 July 2015, <http://www.news.com.au/technology/innovation/inventions/the-royal-australian-air-force-set-to-take-delivery-of-new-ea18g-growler-attack-jets/news-story/00b4ccb656095aa318a5d5f546b2c8ef>

⁹ Andrew Carr, "Defence Spending," in *Australian Foreign Policy*, ed. Daniel Baldino, Andrew Carr and Anthony J. Langlois (South Melbourne: Oxford University Press, 2014), 198.

military technological advantage over regional peers, but this is now being challenged by modernization amongst Asian neighbours. This puts pressure on a strategy of deterrence through force projection capacity. Growler is identified along with the Joint Strike Fighter as central to providing a potent air combat and air strike capability.¹⁰ This will not be enough on its own to meet regional threats.

The White Paper identifies several key regional security issues including the South China Sea territorial disputes and the Korean Peninsula. Regardless of the high tech strike capability, the RAAF is still a comparatively small air force. It is clearly stated that “Australia does not have the capacity to unilaterally protect and further our global interests” and therefore relies on cooperation with partners.¹¹ The cooperation becomes part of the national defence strategy. The White Paper was well received in the US, who welcomed the increase in defence expenditure.¹² It was reportedly less warmly received by the Chinese who acknowledged the push for closer defence cooperation, however took exception to the identification of the South China Sea as a possible area for increased tension.¹³ A critical component in the White Paper is that modernization throughout the region must be transparent and based on cooperation to avoid an escalation in tension. The Defence White Paper and the RAAF’s Plan Jericho provide transparency to the ADF’s force structure ambitions. Goals that are based on maximizing capability through force level integration.

¹⁰ Department of Defence, *2016 Defence White Paper*, (Canberra: Australian Government, 2016), 19, 58.

¹¹ *Ibid.*, 45.

¹² Greg Jennett, “Defence White Paper: Australia joins Asia’s arms race with spending on weaponry and military forces to reach \$195b,” Australian Broadcasting Corporation, last modified 25 February 2016, <http://www.abc.net.au/news/2016-02-25/defence-white-paper-released-increased-spending/7198632>

¹³ Eliza Borrello, “South China Sea: Beijing ‘dissatisfied’ with ‘negative’ remarks in Australia’s Defence White Paper,” Australian Broadcasting Corporation, last modified 25 February 2015, <http://www.abc.net.au/news/2016-02-25/china-'dissatisfied'-with-defence-white-paper-comments/7201062>

Growler provides EW in contested airspace and is considered a *low density, high demand* asset even within US forces.¹⁴ The EA-18G is based on the F/A-18F Super Hornet with additional internal and external EW equipment. The Australian *Air Power Manual* lists three types of EW: Electronic Support (ES), Electronic Protection (EP) and Electronic Attack (EA).¹⁵ ES involves interception and exploitation of radiated electromagnetic energy. EP is shielding friendly forces from the effects of the use of the EMS, the most well-known of which is the denying of EMS triggers for improvised explosive devices. EA utilizes the EMS to degrade, neutralize or destroy an adversary's combat capability. Growler takes these components to the next stage, termed Force Level Electronic Warfare (FLEW). FLEW integrates EW with ISR and battlespace management capabilities "to improve mission effectiveness across the air, land, maritime, space and cyberspace domains."¹⁶ Growler will also be effective in the information battlespace. By dominating the EMS it can "neutralize, destroy or degrade the will and capability of an adversary in order to affect understanding and thereby perception and behaviour."¹⁷ Growler can achieve this in isolation or more effectively as part of a joint operation.

Growler will be an integral part of Plan Jericho. The program is currently being implemented by the RAAF and provides the vision "to develop a future force that is agile and adaptive, fully immersed in the information age and truly joint."¹⁸ The concept driving Jericho is that future capability and efficiency is best achieved through a holistic approach to warfighting and not just based on specific platforms as was the case in the past. Growler provides an initial look at these future opportunities and will deliver cross-domain capabilities for both military and

¹⁴ United States, Report to Congress, *Kosovo / Operation Allied Force After-action Report* (Washington, DC: U.S. Government Printing Office, January 31, 2000), 66.

¹⁵ Royal Australian Air Force, AAP 1000-D, *The Air Power Manual*, 6th ed. (Canberra: Air Power Development Centre, Department of Defence, 2013), 61.

¹⁶ *Ibid.*, 61.

¹⁷ *Ibid.*, 63.

¹⁸ Royal Australian Air Force, *Plan Jericho Booklet* (Department of Defence, 2014), 4.

other government agencies. Through exploitation of the EMS, Growler operations are relevant to air, sea and land forces as well as providing opportunities for cooperation in all security operations. Chief of the Air Force, Air Marshal Leo Davies, views Jericho as being “the difference between an Air Force with fifth generation aircraft and being a fifth generation Air Force.”¹⁹ Growler is a step closer for Plan Jericho to fulfil the future concept of the RAAF and to meet the technological challenges in the region.

The Growler is well suited to the future force outlined in the 2016 Defence White Paper. The capability is central to providing a potent strike capability which in turn underscores the Australian security strategy of defence through credible deterrence. The government commitment to defence expenditure and direction for future force structure is essential to effective planning and procurement. The justification for Growler has several components. These are well documented in the White Paper from Australia’s commitment to the US alliance as a foundation for security strategy, through to utilizing established regional security architecture to maintain stability. A capable defence force with robust alliances is able to provide a large component of the security; however the foremost goal of stability in the region relies on the prudent application of all elements of national power. The Defence White Paper calls on regional powers to commit to transparency and cooperation with regard to military modernization. For Australia, this is explaining where the ADF’s new capabilities fit into national objectives. The impact of Growler on each element of national power including Military, Diplomatic, Information and Economic will be covered in the next sections.

¹⁹ Leo Davies, “Plan Jericho,” Royal Australian Air Force, accessed 20 April 2016, <http://www.airforce.gov.au/plan-jericho/?RAAF-CrI57877JHUU/bo9YoJ64qWYIO7G/14Q>

MILITARY

The Growler will be the RAAF's first dedicated SEAD capability. The current Director General Strategy and Planning, Air Commodore Steven Osborne, described the lack of any SEAD capability as the Air Force's Achilles' heel as far back as 1999.²⁰ The doctrinal gap noted by Osborne is still evident almost twenty years later.²¹ Admittedly, several advances have been made to increase the survivability of Australian strike aircraft in a contested air defence environment. Upgrades to the legacy F/A-18A fleet including ALR-67 radar warning receiver, ALE-49 electronic counter measures, EL-8222 EW jamming pod and standoff weapons such as the JASSM ensure the aircraft have some capability to prosecute targets protected by air defence systems. The addition of the F/A-18F with its low observability technology further enhances this potential. By purchasing Growler, Australia is looking at future potential high-end conflicts.

Sixteen years into the Asian Century not much has changed in the region to directly threaten Australia's security. The 2016 Defence White Paper maintains that the likelihood of a direct attack on Australia by an adversary is remote.²² The main areas of concern in South East Asia are identified as the land reclamation activities and the militarization of Australia's vital maritime trade routes through the South China Sea.²³ Australia must be able to maintain the capacity to operate in this region to ensure freedom of navigation and trade. Growler will provide the force projection and protection capability in the areas of dispute even in a complex air defence environment. The potential for regional conflicts to directly impact Australia's national interests remains present even if remote. In order to deter any threat to Australian security,

²⁰ S.J. Osborne, "The Royal Australian Air Force's Achilles Heel: The Suppression of Enemy Air Defences" (College Command and Staff Course New Horizons Paper, Canadian Forces College, 1998), 7.

²¹ Royal Australian Air Force, AAP 1000-D, *The Air Power Manual*, 6th ed. (Canberra: Air Power Development Centre, Department of Defence, 2013), 53.

²² Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 40.

²³ *Ibid.*, 43-44.

Australia has continued the recent strategy of maintaining a potent strike capability; for the future RAAF this is “centered around the F35A Lightning II and the EA-18G Growler.”²⁴ The justification for acquiring a SEAD capability is underlined by recent air campaigns.

SEAD is essential to the successful conduct of aircraft strike missions. In the 1991 Gulf War, Iraq’s sophisticated IADS was all but destroyed within the first week of the conflict allowing coalition strike aircraft to operate with few restrictions.²⁵ In the 1999 Kosovo air campaign, North Atlantic Treaty Organization (NATO) aircraft faced a much more resilient IADS benefiting from detailed knowledge of western tactics. Despite SEAD aircraft expending 743 HARMs, the Serbian air defence remained intact throughout the 78 day conflict. Importantly, Allied Force commanders were able to continue aerial strikes within the IADS zone supported by a large number of suppression aircraft.²⁶ The 2011 Libya campaign required SEAD aircraft until it could be assured that Gadhafi’s air defence no longer posed a threat to NATO strike aircraft and provided Growler with its first SEAD combat missions.²⁷ The Growler is the most potent SEAD aircraft available. Anti-radiation missiles and EA capabilities enable operators to destroy or suppress enemy air defences in order to protect attacking aircraft. The ability to strike an adversary threatening Australia is a requirement of Australia’s deterrence strategy; “SEAD initiatives have worked very well over the past years in forcing an adversary to change their behaviour to the benefit of the attacking force.”²⁸ The RAAF requires the SEAD

²⁴ *Ibid.*, 19.

²⁵ United States, Report to Congress, *Conduct of the Persian Gulf War* (Washington, DC: U.S. Government Printing Office, April 1992), 158-160.

²⁶ United States, Report to Congress, *Kosovo / Operation Allied Force After-action Report* (Washington, DC: U.S. Government Printing Office, January 31, 2000), 65. A third of strike package aircraft were dedicated to the role of SEAD.

²⁷ United States Navy, *Naval Aviation Vision 2014-2025* (Naval Aviation Enterprise, 2014), 63.

²⁸ Thomas Withington, *Wild Weasel Fighter Attack: The Story of the Suppression of Enemy Air Defences* (Barnsley: Pen and Sword Aviation, 2008), 235.

capability to maintain a potent strike capability in the maritime domain and throughout the northern approaches.

Growler will have a vital role in SEAD for the foreseeable future. Dedicated EA aircraft have been phased out of the US Air Force (USAF) and the US Marine Corps (USMC) as they look toward a Joint Strike Fighter (JSF) fleet and growth in Unmanned Aerial Vehicles (UAVs). The F-35A capacity for EA is a difficult debate as little information is available in open source; however the design specifications call for JSF to operate without external EA support.²⁹ Ultimately, the USAF and USMC are holding out for the JSF and the USN and RAAF are acquiring and integrating both Growler and JSF. The UAV concept of SEAD has been around since the 1970s and been successfully employed in past operations.³⁰ However, the role has been limited to deception and probes in the form of decoys. The USAF Unmanned Aircraft Systems Flight Plan shows the introduction of a fighter sized UAV, the MQ-Mb, in the SEAD role after the 2030 timeframe.³¹ The evolving strategy of Anti-Access and Area Denial (A2/AD) predicted to be employed by future adversaries and the requirement for Australia to maintain a technological edge means the capabilities need to be available now.³² Future SEAD operations will require a balanced approach combining stealth, SEAD and UAVs. For Australia, SEAD is only a fraction of the capacity provided by Growler.

The EW capabilities of Growler will be the most likely benefit for the ADF in the current security environment. Defence Journalist, Ian McPhedran, alluded to the possibilities for

²⁹ John A. Tirpak, "The F-35's Race Against Time," Air Force Magazine, last modified November 2012, <http://www.airforcemag.com/MagazineArchive/Pages/2012/November%202012/1112fighter.aspx>

³⁰ Thomas Withington, *Wild Weasel Fighter Attack: The Story of the Suppression of Enemy Air Defences* (Barnsley: Pen and Sword Aviation, 2008), 230-233.

³¹ United States Air Force, *Unmanned Aircraft Systems Flight Plan 2009-2047*, Headquarters United States Air Force (Washington DC, 18 May 2009), 34.

³² Brad W. Gladman, "The future of allied air power: The Royal Australian Air Force," (Scientific Report DRDC-RDDC-2015-R212, Defence Research and Development Canada, October 2015), 12-13. A2/AD is the concept of developing capabilities to counter the force projection capacity of the adversary. This has been specifically applied to the USN and freedom of manoeuvre in Asia.

Growler within the region by employing its communication spectrum capabilities in stability operations in fragile neighbouring states.³³ This is a role Australia undertook with P3C Orion aircraft conducting EW operations as part of Operation Astute during the Timor Leste crisis in 2006.³⁴ Growler can undertake diverse roles and the versatility was displayed in 2011 when the same USN unit went from EW force protection operations in Iraq to SEAD operations over Libya in under 48 hours.³⁵ With South East Asian transnational issues such as terrorism, piracy, drug and human trafficking Growler may play a vital role in regional as well as global security. The Defence White Paper outlines the benefits most clearly through “helping to build the effectiveness of regional operations to address shared security challenges, and the ADF will have increased capabilities to make contributions to any such operations.”³⁶ The Growler is a good fit. Firstly it maintains the technological edge and capability superiority, especially in high end conflict. Secondly it will be an essential component in Australia’s strike capability. Thirdly, it has capabilities that span all levels of conflict and are particularly pertinent to current regional security issues. The military benefit is obvious, however it is through regional dynamics and diplomacy that Growler can further extend national interests.

POLITICAL

The alliance with the US is a key component of Australia’s defence policy. In 1952, ten years after the unimaginable fall of Singapore during World War II, the alliance was formalized

³³ Ian McPhedran, “The Royal Australian Air Force set to take delivery of new EA-18G Growler attack jets,” last modified 31 July 2015, <http://www.news.com.au/technology/innovation/inventions/the-royal-australian-air-force-set-to-take-delivery-of-new-ea18g-growler-attack-jets/news-story/00b4ccb656095aa318a5d5f546b2c8ef>

³⁴ Greg Ansley, “East Timor – who lit the fire?” New Zealand Herald, last modified 2 June 2006, http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=10384765

³⁵ Errol J. McCormack, “The Importance of the Growler to Australia’s National Security,” RAAF Association WINGS (Summer, 2012), 10.

³⁶ Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 17.

through the ANZUS treaty.³⁷ The acquisition of Growler will strengthen Australian-US military cooperation without compromising ADF force structure. Former Deputy Secretary in the Australian Department of Defence, Paul Dibb, observed that aligning too much with the wishes of Washington could have a negative impact. The example provided is the policies under Defence Minister, Robert Hill, in the early 2000s which placed the independent force projection of the ADF at risk.³⁸ The military benefits of Growler have already been discussed and Dibbs clearly states Washington expectations on allied militaries; “the United States will increasingly rely on its allies to both maintain a favorable military balance in Asia and to shoulder a greater share of the regional defence burden.”³⁹ The Growler acquisition is a sound avenue to strengthen the US alliance through military interoperability without compromising inherent defence capacity. Several other benefits will also be realized by Australia.

The Growler provides the Australian Government with multiple options for coalition military contributions. The aircraft will be a welcome addition to the RAAF inventory from a US perspective. During the 2011 Libyan air campaign the US provided one hundred percent of the EW flights conducted.⁴⁰ The value of the US alliance, interoperability and the high demand for the EW capability suggest the Growler may become a vital component of the ADF’s contribution to Australian foreign policy. Growler can be employed in both kinetic and non-kinetic operations, therefore providing significant political room to manoeuvre for the Australian Government. The application of such political restraining is evident in several contemporary operations. In the 1999 Kosovo air campaign German forces consisted of ISR and SEAD aircraft.

³⁷ Percy Spender, “Security Treaty between Australia, New Zealand and the United States of America (ANZUS),” San Francisco, 1 September 1951, accessed on 21 Apr 2016, <http://australianpolitics.com/1951/09/01/anzus-treaty-text.html>.

³⁸ Paul Dibb, “Australia-United States,” in *Australia as an Asia Pacific Regional Power*, ed. Brendan Taylor (Abingdon: Routledge, 2007), 40.

³⁹ Paul Dibb, “Australia-United States,” in *Australia as an Asia Pacific Regional Power*, ed. Brendan Taylor (Abingdon: Routledge, 2007), 42.

⁴⁰ United States Navy, *Naval Aviation Vision 2014-2025* (Naval Aviation Enterprise, 2014), 26.

Despite not flying strike missions the Germans made a valuable contribution to coalition force protection through SEAD Tornado-ERCs.⁴¹ Combat operations in defence of Coalition strike aircraft were more politically acceptable. The Australian Government will have more options for its combat contribution during expeditionary operations, allowing greater diplomatic manoeuvring especially in regional politics.

Australia maintains a fine diplomatic balance in the Asia-Pacific region. In the Pacific, Australia is often required to project national power to ensure the stability of smaller nations, a priority in the Defence White Paper.⁴² Recent stability operations in Timor Leste, Bougainville and the Solomon Islands are examples of these efforts.⁴³ Asia is a vastly different environment with Australia on a peer relationship with most northern neighbours. The projection of Australia's national power must be rationalized in the context of increasing cooperation within the region's organizational framework. In the case of the Association of South East Asian Nations (ASEAN), an Australian emphasis over the last decade has been trans-national security issues such as terrorism, piracy and human trafficking.⁴⁴ Australia will be able to provide a niche capability with Growler to the ASEAN organization. Australian National University Professor, William Tow, considers alliances such as ANZUS central to Asia's strategic outlook, however determines that these alliances are often too cumbersome for short-term crisis management

⁴¹ J. Peters, S. Johnson, N. Bansahel, T. Liston, and T. Williams, *European Contributions to Operation Allied Force: Implications for Transatlantic Cooperation*, (Arlington, RAND, 2001), 21. Due to the political nature of Operation Allied Force only thirteen of the nineteen NATO nations contributed forces. The German contribution is a good example of providing forces for a less politicized role in force protection.

⁴² Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 56.

⁴³ Department of Defence, Global Operations, last accessed 26 April 2016, <http://www.defence.gov.au/Operations/>. Operations include Astute, Lagoon, Anode, Pacific Assist and Fiji Assist.

⁴⁴ Sally P. Wood and Baogang He. *The Australia-ASEAN Dialogue*, Introduction (New York: Palgrave Macmillan, 2014), 5-6. Australia instigated the ASEAN Defence Ministers Meetings Plus (ADMM+) to strengthen dialogue on regional security architecture. The Plus are the US, China, India, Japan, Republic of Korea, Australia, New Zealand and Russia.

where coalitions and alignment are better suited.⁴⁵ ASEAN can provide the framework to meet these regional threats and also provide a counter balance to unilateral regional powers. The multilateral alignment on regional security issues is at the forefront of Australian foreign policy, providing some negotiating space for important bilateral relations.

The two major powers in Asia, China and the US, provide Australia with a delicate diplomatic balancing act. The US is the main security partner with a long history of cooperation in times of conflict; however trade relations have often been mixed.⁴⁶ China is Australia's largest trading partner and the economic rise of China will enhance Australia's prosperity. Both China and the US prefer to undertake foreign policy through bilateral channels which has remained workable due to the predominance on trade and security respectively.⁴⁷ As security looms as a key topic in the Asian Century, Australia looks to a policy of multilateralism to balance competing ambitions. As one of the founding members of the East Asia Summit (EAS) established in 2005, Australia supports the initiative as a forum in which regional powers can implement effective cooperation and solve disputes. Australia places a large amount of faith in multilateral forums keeping relations between our two main partners amicable, evident when Australian Foreign Minister, Julia Bishop, described the EAS as "central to our efforts to preserve the peace that has underpinned [Australia's] prosperity."⁴⁸ Growler presents both a risk and an opportunity in this dynamic regional security environment.

⁴⁵ William Tow, "Alliances and Alignments in the Twenty-first Century," in *Australia as an Asia Pacific Regional Power*, edited by Brendan Taylor (Abingdon: Routledge, 2007), 27.

⁴⁶ Maryanne Kelton. *More than an Ally? Contemporary Australia-US Relations*. (Hampshire: Ashgate Publishing, 2008), 1.

⁴⁷ Andrew O'Neil, "The limits of multilateralism in Australian Diplomacy," in *Australian Foreign Policy*, edited by Daniel Baldino, Andrew Carr and Anthony J. Langlois, (South Melbourne: Oxford University Press, 2014), 67.

⁴⁸ Avery Poole, "The East Asia Summit: Navigating ASEAN Multilateralism," in *The Australia-ASEAN Dialogue*, edited by Sally P. Wood and Baogang He (New York: Palgrave Macmillan, 2014), 52.

Growler is the continuation of a successful Australian defence policy of maintaining a small air force with a technological edge. Professor Tow argued that Australia has avoided condemnation in Asia by pursuing independent foreign policy initiatives whilst simultaneously strengthening the US alliance through “defly calibrating symbolic deployments of niche military capabilities in support of US global security operations, while solidifying its regional economic and security ties”.⁴⁹ The applicability of Growler to this policy is obvious and could even be considered a masterstroke. Growler will take the bilateral security cooperation with the US to the highest levels, whilst delivering a niche capability in the region, especially to ASEAN security initiatives. The counter argument will be that the Growler acquisition is merely adding to the developing arms race in Asia and a cause for consternation amongst neighbours. The validity of this argument in many ways depends on Australia’s information campaign associated with the new capability. The Australian Government must provide the same transparency in the military modernization as requested of neighbours in the Defence White Paper. This includes the information and economic justification for the acquisition of Growler.

INFORMATON

The US is the world leader in EW technology. The USN has several decades of EW and EA experience through operating the EA-6B Prowler, predecessor to the Growler. The experience and knowledge gained by the USN is being offered to the RAAF through unprecedented levels of cooperation. RAAF aircrew are training and embedding with established USN Growler squadrons to gain valuable experience before the capability is delivered to Australia in 2017. This experienced is recognized by the Deputy Director of the Growler Transition Office, Wing Commander Paul Jarvis, as a key component in delivering a credible

⁴⁹ William Tow, “Alliances and Alignments in the Twenty-first Century,” in *Australia as an Asia Pacific Regional Power*, edited by Brendan Taylor (Abingdon: Routledge, 2007), 23.

airborne electronic attack capability for the RAAF.⁵⁰ The opportunity provided by the US to train RAAF personnel is a key enabler in establishing the Growler capability in minimal time to pursue national interests. Australian-US interoperability will also be strengthened through the embed program. The implementation of the Growler project enables the ADF to rapidly build the skills of its people. The same benefit can be seen in access to technology.

The close defence relationship with the US ensconced by operating Growler will allow the ADF access to state of the art equipment and technology. This is the first objective of international engagement outlined in the Defence White Paper which states; “to enhance ADF capability by maintaining access to the high-end intelligence, technology and military capability from our alliance partner, the US.”⁵¹ The type of missions undertaken by Growler, the equipment and intelligence required to effectively employ the capability requires Australian access to classified data and software. The close defence technology sharing between the two nations is evident in the recent announcement that Australia will be the first non-US customer for the advanced AIM-120D air-air missiles.⁵² Gaining access to the latest defence equipment and technology allows Australia to maximize military power. EW is identified as a capability priority in the Defence White Paper. Given the size and funding for defence in Australia, a close partnership with the US is essential to an effective EW capability. In this regard, Growler delivers significant benefit in the form of information sharing with the US. The benefit can be further shared within the regional security architecture.

⁵⁰ Royal Australian Air Force, “RAAF starts Growler training in the United States,” last modified 7 November 2013, <http://www.airforce.gov.au/News/RAAF-starts-Growler-training-in-the-United-States/?RAAF-ZMI96fHi2+WtOYwLmeRZygIUzwIH73Ia>

⁵¹ Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 119.

⁵² Franz-Stefan Gady, “Australia to buy 450 US-Made Advanced Air-to-Air Missiles,” last modified 27 April 2016, <http://thediplomat.com/2016/04/australia-to-buy-450-advanced-us-made-air-to-air-missiles/>. The sale still needs to be ratified by US Congress.

Growler will bring unique capabilities to the region. No other ASEAN military has a similar platform. The aircraft will be able to collect electronic and communication emissions and deliver the capability to exploit them immediately or over time. By providing this capability to regional partners, Australia becomes a valuable source of military intelligence in the electromagnetic spectrum. The Five Powers Defence Agreement (FPDA) between the Australia, Malaysia, New Zealand, Singapore and the United Kingdom is one such partnership where Growler can provide significant advantages. FPDA exercises focus on naval cooperation and the coordinated air defence of the Malaysian peninsular. Both are roles that Growler is designed for. In the region, Growler is a fundamental leap in war fighting capability.

Growler is an information warfare platform. The cyber domain, including the vast information contained within it, will be an integral part of the future battlespace. The EA capabilities of Growler will allow it to target within the electromagnetic spectrum as well as less kinetic disruption and denial of its use. The full capabilities are classified however open source reporting indicates that exploitation of the cyber domain is within the scope of Growler systems.⁵³ Exploitation and denial of this spectrum is a contemporary means of force projection to further national objectives. Major powers like the US, China and organizations such as NATO have included information warfare as part of their force structure. The Air Power Manual describes how information operations create effects at all levels, including strategic and can be kinetic and non-kinetic in nature.⁵⁴ Growler is designed to operate in this sphere and through a networked RAAF it will remain in high demand. Plan Jericho is the RAAF plan to maximize

⁵³ David A. Fulghum, "Northrop Grumman's EA-18G Growler Brings New Information Warfare Capabilities," last modified 14 November 2005, <http://aviationweek.com/awin/northrop-grummans-ea-18g-growler-brings-new-information-warfare-capabilities>

⁵⁴ Royal Australian Air Force, AAP 1000-D, *The Air Power Manual*, 6th ed. (Canberra: Air Power Development Centre, Department of Defence, 2013), 63.

efficiency and lethality in the modern battlespace of the information age. Growler is a sound investment as a pillar of this strategy.

ECONOMIC

Defence expenditure is always a contentious issue in the public domain. The Australian public expect taxpayer funded defence purchases to be justified accordingly through the White Paper. The RAAF acquired 24 Super Hornets in 2007 as a precaution against the capability gap associated with the delay in receiving F-35As. The concept was for 12 of these F/A-18F model Hornets to be converted to Growler, but in 2012 the Australian Government announced that it would buy additional purpose-built EA aircraft for A\$3.7 billion. The cost should be put into context of the defence budget. The Defence White Paper outlines an increase in defence spending to 2% of GDP, which equates to an increase in the defence budget from A\$32.3 billion in 2015-16 to A\$42.4 billion in 2020-21.⁵⁵ The F-35A project is estimated to cost A\$17 billion for the 72 aircraft.⁵⁶ By any comparison, Growler is an expensive acquisition. The high cost needs to be viewed with reference to the high tech capabilities on offer and the diversified application of the system.

The technology required to develop and sustain the Growler must be taken into account in the acquisition. The Defence White Paper explains that it is not a capability Australia can produce indigenously; “the cost to Australia of developing these high-end capabilities would be beyond Australia’s capacity without the [US] alliance.”⁵⁷ The ADF learned this lesson the costly way. Australian industry made an unsuccessful attempt to design and produce EW equipment for

⁵⁵ Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 178.

⁵⁶ Stephanie Anderson, “Australia’s \$17 billion F-35 Joint Strike Fighter purchase unaffected by Canada’s withdrawal,” last modified 21 October 2015, <http://www.abc.net.au/news/2015-10-21/australia's-joint-strike-fighter-purchase-unaffected-by-canada/6874660>. Both costs are factored for expected service life of the aircraft, however accurate figures are difficult to determine and vary significantly depending on what infrastructure is taken into account.

⁵⁷ Department of Defence, 2016 Defence White Paper, (Canberra: Australian Government, 2016), 122.

the F-111 and current Hornet fleet in 2006.⁵⁸ Successful recent acquisitions including the C-17 heavy lift aircraft and the F model Hornet underscore the applicability of receiving aircraft direct from the overseas manufacturer. The cost is one component; the other is the expertise to produce an effective capability. EW and EA are not technologies that can be developed without decades of research, development and operational experience. Andrew Carr explained that the European Union (EU) is the second biggest defence spender; however that has not bought the EU the second best military force.⁵⁹ The funding must deliver a force structure in line with national defence strategy. In order to field a potent air combat and strike capability, the Australian Government has outlined stealth and electronic warfare as the key components. Purchasing combat tested EW aircraft from the leading manufacturer will deliver the most effective capability to the ADF.

The RAAF is purchasing a niche, highly sought capability for a fraction of the development cost. The contract includes the best available equipment applicable to a wide range of functions. Peter Leahy argues that defence budgets should be reduced in favour of an all embracing security budget to meet today's non-traditional threats.⁶⁰ Growler meets this intent. The likely contribution to regional stability through security cooperation, application to trans-national threats and building on the Australia-US alliance make Growler good value for money. Value that goes beyond the military capabilities provided and is based on strategic security objectives.

⁵⁸ Department of Defence, "ALR-2002 Radar Warning Receiver," last accessed 2 May 2016, <http://www.dsto.defence.gov.au/innovation/alr-2002-radar-warning-receiver>. The ALR-2002B project aimed to develop an Australian radar warning receiver to be utilized across the entire RAAF fleet. The project was scrapped in the design phase.

⁵⁹ Andrew Carr, "Defence Spending," in *Australian Foreign Policy*, edited by Daniel Baldino, Andrew Carr and Anthony J. Langlois (South Melbourne: Oxford University Press, 2014), 141.

⁶⁰ Peter Leahy, "Defence Spending," in *Australian Foreign Policy*, edited by Daniel Baldino, Andrew Carr and Anthony J. Langlois (South Melbourne: Oxford University Press, 2014), 203.

CONCLUSION

Asian militaries are undergoing major modernization. Australia is included with several new air and naval capabilities being delivered over the next decade. Plan Jericho outlines the RAAF vision of the Air Force in the information age and the EA-18G Growler is an integral part. The capability will deliver FLEW benefits for the entire ADF, epitomizing Plan Jericho's objective of a networked and truly joint air force. All three domains of air, land and sea will gain significant advantage as Growler controls the information fight. The capability to exploit, degrade and deny the EMS will be a key enabler in applying air power for decades to come. The Australian Government recognized and prioritized this in the 2016 Defence White Paper. The Growler acquisition is expensive and combined with the fact that dedicated SEAD is beyond the means of most small air forces, other benefits must be assessed. In Australia's case the acquisition promotes several facets of the national defence strategy.

Growler is a strategic decision. The Australia-US alliance will be strengthened, the ADF will have access to state-of-the-art technology, personnel will receive opportunities for valuable experience and a niche capability will be available to security partners. At the national level, Growler provides invaluable force protection for Australian and coalition forces and provides the government various kinetic and non-kinetic options, especially for expeditionary operations. Regional security architecture will also gain from the permanent EW capability, but this will rely on measured employment to ensure the acquisition is not viewed as a threat. If it is then its presence will add fuel to the prospective regional arms race. And Australia would struggle to compete.

The Defence White Paper calls for transparency in the region to avoid escalating tensions. The employment of Growler can set the example for other regional militaries to follow by

providing a niche capability for the benefit and stability of the region. If done correctly, Growler will be a welcome part of Asia-Pacific security as well as maintain Australia's technological edge. The RAAF vision outlined in Plan Jericho is for freedom of action across the air, space, electromagnetic and cyber domains. To achieve this vision, utilizing the information based Growler to operate in the information age is worth the investment.

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