



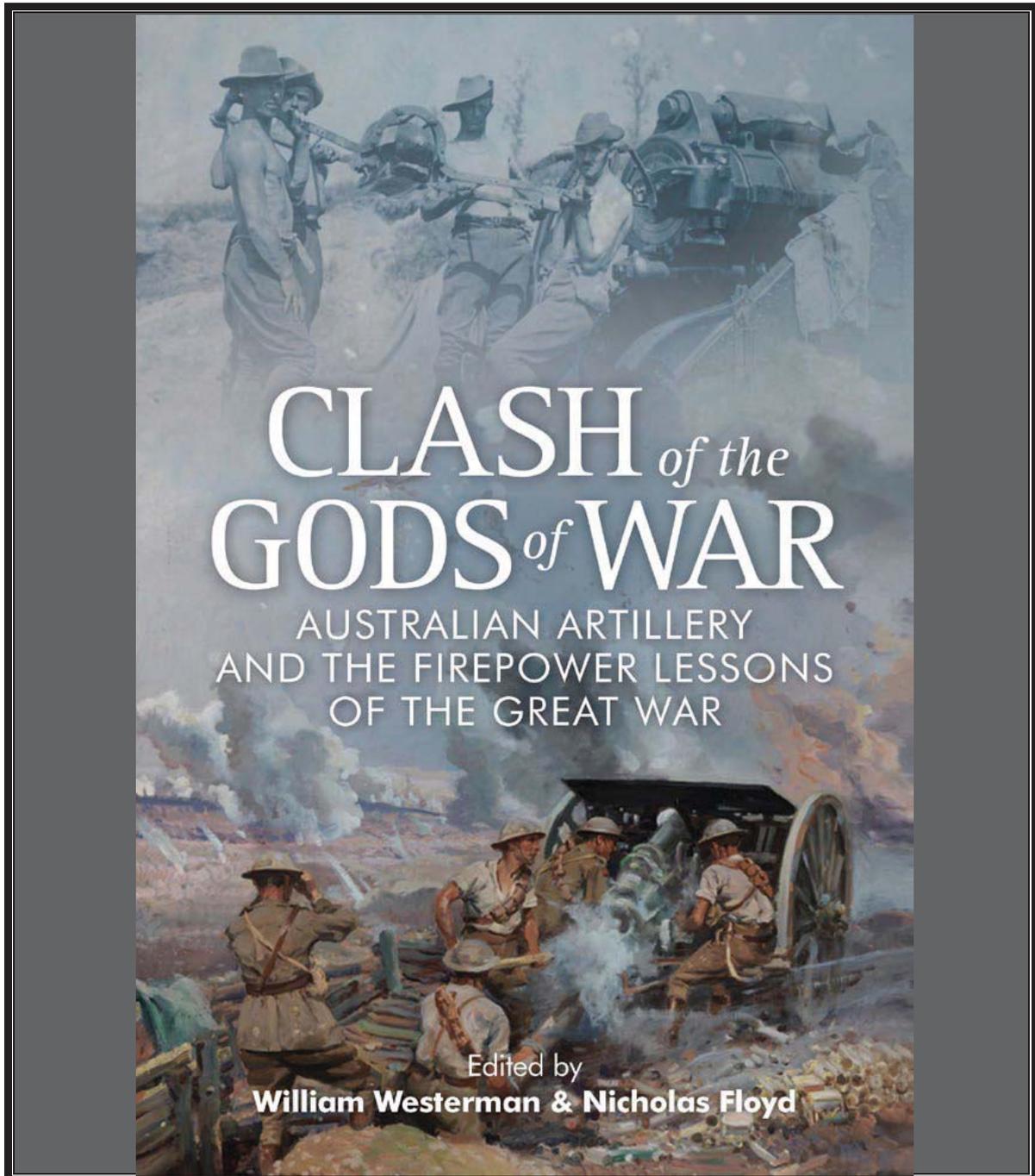
ROYAL AUSTRALIAN ARTILLERY HISTORICAL COMPANY

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CLASH *of the* GODS *of* WAR

AUSTRALIAN ARTILLERY
AND THE FIREPOWER LESSONS
OF THE GREAT WAR

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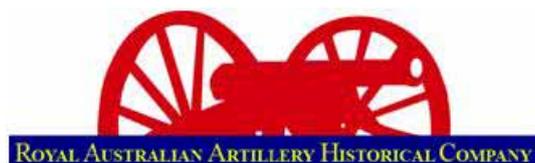
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Editor

Dear Readers

Hello and welcome to Cannonball. In this edition we have the first report from the new RAAHC Board Chair, Colonel Ian Ahearn (Retd).

In this edition we have articles which should appeal to everyone both serving and retired. Lieutenant Colonel Nick Floyd has provided a very timely contribution on the history of a permanent Australian Artillery given our pending 150th anniversary next year. The article was originally developed for inclusion in the doctrine publication 'Employment of Artillery'. It will now form the basis for a RAAHC project known as the 'Essential History'. This a very exciting project which you will no doubt have heard about or even be approached to assist or contribute in some manner.

There is an excellent and well researched paper titled 'Fire For Effect' by Captain Pietro Ruggero with a focus on the Forward Observer during the war in South Vietnam. I believe everyone will not only enjoy but will have a view of their own on the topic.

Keith Glyde, a member of the Regimental History Committee, continues to support Cannonball and has contributed a thoroughly researched and comprehensive article on the 'Army Badge of the Royal Australian Artillery'. No doubt it will be read with interest by everyone.

Unfortunately, there is more to read in the Vale Section as we celebrate the careers and lives of Gunners who have died in recent times.

Once again, I trust you find this edition enjoyable and informative as well as educational at times. I look forward to receiving your feedback and contributions.

Ubique

Letters to the Editor

A few anonymous snippets

... we appreciate all the difficulties you have and wonder how you find the "will" to continue and admire the fact that you do so.

... thank you very much for your ongoing service to the Regiment, and the continuing production and delivery of the Liaison Letter. I have reached that stage of life where the Army to which I belonged, and the people that I knew within the service, really no longer exist.

Congratulations on the last LL and Cannonball.

... and a big thank you for your excellent productions. Most appreciated.

Notice

Death Notices

In recent times, some of our Gunner community have died with little recognition from Gunner mates or RAA organisations large or small. A notification system to assist a more suitable farewell to departed comrades is proposed.

If you hear of the death of a gunner, let your unit/sub unit or RAA organisation know. Contact details are available in the RAA Liaison Letter or in your State and unit organisations' publications and websites.

Please share funeral arrangements promptly; and as much detail of as you know.

If you are not a member of any unit, sub unit or RAA association, please pass the information to obituaries@artilleryhistory.org

Secretaries or responsible committee members are asked to consider forwarding any death notice to obituaries@artilleryhistory.org for wider distribution.

The RAAHC Obituary Resource Officer (Peter Bruce) can coordinate an obituary for the deceased gunner for inclusion in RAA publications and on the RAAHC website.

Please share, share and share – we are the Gunner family.



Chairman's Report

Dear Members and Friends

This is my first Cannonball report as the Chair of the RAAHC Board and I would be remiss if I did not record my appreciation of my predecessor's sterling efforts as Chair for the past ten years. Tim Ford has not left us as he has volunteered to step in as Manager of the Cutler Research Centre at North Head. His interest, enthusiasm and hard work has left the Company in great shape and his efforts deserve our thanks.

The Corona Virus has wreaked havoc on our professional and social lives and it would appear that we must adjust for an extended time. On behalf of the Board I extend our heartfelt wishes that all our Gunner families are safe and well.

It is planned to commemorate 150 years of Australian Artillery in 2021 and a program is being developed under the auspices of the Regimental Committee. Three major events are planned:

- A synchronised national ceremonial salute is planned to be fired in every State from each location of an RAA Regiment or, in the case of 9th Regiment, each sub unit.
- Sunday 1st August 2021 -Commemorative Service RRAA National Memorial, Canberra.
- Saturday 6th November 2021- Parade & Drum Head Service to receive the new Queen's Banner, Victoria Barracks, Sydney.
- Cocktail Party, Victoria Barracks, Sydney.

Anniversary merchandise is planned to be made available through the Regimental Shop and the Australian Artillery Association has been asked to explore the potential for an anniversary stamp and coin. The Regimental Committee noted that artillery associations and other kindred organisations may do their own merchandising and conduct anniversary events. The Australian Artillery Association intends to conduct a National Gunner Dinner at Caloundra, Queensland on 20/21 August 2021. Details at: <https://australianartilleryassociation.com>

The Board will be considering activities that may be adopted to support the 150th Anniversary of Australian Artillery and I would welcome any suggestion by a member which can then undergo consideration by the Board. Members can forward suggestion to me at chair@artilleryhistory.org.

As indicated in Cannonball No 95 the RAAHC has been supporting the Port Jackson 4 Pounder Project on behalf of the School of Artillery. The project involves the restoration of a 4 Pounder gun barrel believed to be from HMS Supply and the construction of a replica naval carriage. Work is being carried out at North Head by Sydney Harbour Federation Trust (SHFT) volunteers and funded by the Royal Australian Artillery Historical Company. The restored gun will be displayed in the School of Artillery. The progress of the work is shown in the photographs below.



The restored barrel



Barrel after sandblasting & Painting



Wooden Carriage under construction

The Anzac Centennial Gun (ACG) Project has come to a conclusion with the gun now on display at the Temora Aviation Museum. It may seem strange for an aviation museum to have a gun as an exhibit but in the absence of an appropriate artillery museum the Board decided that the ACG should not be “hidden away” but placed in a secure well visited public museum. The Temora Aviation Museum staff and management enthusiastically accepted the ACG. A story on the display is contained elsewhere in this Cannonball.

The book *Clash of the Gods of War: Australian Artillery and the Firepower Lessons of the Great War*, a product of the Fire Power Seminar, has been published and was to be launched in March 2020; a plan that failed in the face of the dreaded Corona! It is planned to hold the launch book when Corona restrictions are eased. The book can be purchased at Big Sky Publishing, Phone 1300 364 611; Fax 02 8330 9221 Website: www.bigskypublishing.com.au

We are still accepting orders for pavers to be included in Australia’s Memorial Walk at North Fort. We have commenced a project to replace the information on the Monuments on the Walk to ensure that the Walk will continue to honour all those who have served in Colonial forces of Australia, the RAN, Australian Army, RAAF, the Australian Merchant Navy and their families and Allies.

The Sir Roden Cutler VC Artillery Research Centre at North Fort (CRC) continues to operate although in lockdown during this period of the Corona Virus. As mentioned above Tim Ford has taken on the role of Manager and has been active in recruiting volunteers although there are never enough hands so if you can help please contact him on 0408029295.

Thank you all for your continued support to the RAAHC. Please feel free to give me a call or to email at Chair@artilleryhistory.org.

Ubique

Colonel Ian Ahearn (Retd)

12th May 2020



CAN YOU ASSIST BC 102ND (CORAL) BATTERY

Below is a message from the BC seeking information on the *Worane Shield*.

“I was rummaging through the Battery drawers and cabinets and stumbled upon the 2nd Australian Field Artillery Brigade ‘Worane’ Shield (1926). It is in somewhat disrepair!



I am seeking information from anyone on the origins of the shield and any idea what may have been in the middle and the top (there are 2 pieces missing). Looking at the bottom part missing it looks like the shape of a flaming cannonball.”

Major David Thom

Editor: I have established that the RAAHC was the previous custodian of the shield, but I am unaware how the RAAHC came into its possession or the shield's providence.

ANZAC Centennial Gun: On Display

Ian Ahearn

The ANZAC Centennial Gun (ACG) Project has been an outstanding success since its inception in 2013. The restoration work carried out by Jim Frecklington and his team was first class and the public response to the forty-four events attended by the ACG between 2014 and 2019 has been superb.

Thanks to all the volunteers that made the project such a success. Over the five years of the project more than thirty volunteers have been involved as either the Horse Team or the Gun Team. The former provided the drivers and outriders while the latter had the responsibility of delivering / recovering the gun and limber to/from events as well as the cleaning and maintenance of the ACG and its purpose-built trailer.

It's not possible to list all the Horse Team but special mention must be made of Max Pearce, the Driver and horse trainer, who has provided sterling service for the entire period. Within the Horse Team Rick Jones, Neil Wilson, the Stinzianis, the Lesebergs, the Dowells and Leah Montefiore gave their all for long periods. The Gun Team was anchored by five people who committed from the start and stayed the full course; Brian Armstrong, Tony Jensen, Chris Jobson, Harold Ganter and Ian Ahearn. The RAAHC is grateful for the support of all



volunteers, regardless of the time they could allocate to the project, Thankyou also to the sponsors and to those who made donations.

The public response to the ACG has been so positive that the RAAHC Board was keen to find a location that would allow the ACG to be displayed to the general public. The lack of an Army Artillery Museum meant that no display was possible within a military area that provides easy access to the public.

Broad enquires were made for possible display locations and the Temora Aviation Museum showed both interest and enthusiasm in hosting a display of the ACG.

Negotiations followed and a Memorandum of Understanding (MOU) was signed between the RAAHC and the Temora Aviation Museum. The MOU allows for the ACG to be displayed in

Temora for 5 years; the Temora Aviation Museum has over 25,000 visitors per year. The MOU also allows the RAAHC to remove the ACG for selected events.

The Horse Team, under Max Pearce, made a proposal to continue to display the ACG, with a horse team, for selected commemoration events. The COVID 19 pandemic has, to all intents and purposes, put paid to that initiative.

The photographs in this article show the ACG display at Temora. Hopefully, when the current pandemic lockdown is lifted, readers will be able to visit the Temora Aviation Museum to view both the ACG and the superb aircraft displays.

History & Heritage

Fire for Effect: role of Australian Forward Observers during the Vietnam War, 1965-1971

*Captain Pietro Ruggeri
Regimental Signals Officer, Radio, Digital &
Support Wing, School of Artillery*

Introduction

The contemporary forward observer (FO) is an artilleryman responsible for the adjustment and coordination of direct and indirect fires on the battlefield. Typically allocated at the company level, they are the tactical commander's expert on joint fires and effects.¹ Almost organisationally unchanged since the Vietnam War, FO teams are often led by an officer and consist of four to six artillerymen with a non-commissioned officer (NCO) assistant. Their modern doctrine and concept of employment is the product of the Royal Australian Artillery's (RAA) historical experience. Drawing on the traditions of the British Royal Artillery, Australian FOs have long provided intimate and effective support to their comrades-in-arms, the infantry and armour. Following the World Wars and low-intensity conflicts in Southeast Asia, the Vietnam War boasted a heavy workload for FOs of the Australian artillery. While the existing historiography adequately charts the operational history of the RAA, it lacks an analysis of the development of FO roles throughout the war and the corresponding consequence for contemporary Australian artillerymen.

¹ Fire support includes artillery, mortars, heavy weapons, gunships, and attack aircraft; Australian Army, *Land Warfare Doctrine 3-4-1 Employment of Artillery* (Canberra: Commonwealth of Australia, 2009) 77.

Australian doctrine and warfighting methodology has long since been shaped by British tradition. Observers of the First World War had been required to calculate artillery firing data themselves, limiting their ability to support infantry in the close fight. It was during the Second World War, amongst the jungles of the Pacific Islands, in which Australian FOs truly tested their nature of intimate support. Attached directly within infantry units, FOs were responsible for coordinating artillery and mortar fire against enemy positions in the close fight, doing so in restrictive terrain. Despite a reforming doctrine aimed at countering Cold War threats, lessons in close country observation of fire were again employed in counter insurgent operations during the Malayan Emergency and Indonesian Confrontation. Often required on patrol with their supported unit, FOs faced the challenge of limited knowledge on enemy locations and restricted visibility. These challenges, although adverse, best prepared them for operating conditions in Vietnam.

Australian FOs have long provided intimate and effective support to their comrades-in-arms, the infantry and armour.

Beginning with the deployment of a field battery in support of an American infantry brigade, Australian FOs had their concept of employment dictated by the character of operations in South Vietnam. As the 1st Australian Task Force (1 ATF) was raised so too did the tempo of operations for artillerymen. Infantry-led tasks dictated the requirement for close support from artillery, with FOs intimately embedded in order to facilitate the provision of indirect fires. This required close relationships with manoeuvre commanders and an appreciation of their intent for battle. The terrain in the Australian area of operations also posed a challenge to FOs. Their skills in technical gunnery were refined and practiced in order to best overcome the restrictions of close country. This was particularly relevant during their common use of 'danger close' procedures, in which artillery

rounds would be fired onto targets at close proximity to friendly forces. Although coined as counter-insurgent operations some meeting engagements, such as at Long Tan in August 1966, required FOs to both practice low-intensity procedures and remain prepared for pitched battle at close quarters. Throughout 1965-1971 their roles and requirements would develop, leaving a series of lessons learnt from which modern FOs draw their concept of employment.

The historiography of Australian FOs' involvement in the Vietnam War is threaded amongst official histories and historical literature. 'The Official History of Australia's Involvement in Southeast Asian Conflicts 1948-1975' is a series published in association with the Australian War Memorial intending to capture the Australian experience of war in that period. Detailing the conditions of early counter insurgent warfare in Southeast Asia is *Emergency and Confrontation*, which dedicates only a sub-chapter to the employment of artillery.² This is consistent across the three part account of the Vietnam War, with *To Long Tan*, *On the Offensive*, and *Fighting to the Finish* discussing the employment of artillery relative only to the operations it supported.³ Although, understandably, the official histories do not focus on artillery, they do indeed provide context for the application of indirect fires during combat engagements.

Rounds Complete by Steve Gower is the only published account of an Australian FO; a memoir of his service in Vietnam across 1966-1967.

Some historical literature has been dedicated to the discussion of Australian artillery's history. David Horner's *The Gunners* recounts the history of Australian artillery from pre-federation until 1995, providing a discussion on

'The Vietnam Commitment'⁴ and otherwise serving as the most artillery-centric history of Australia's involvement in Southeast Asian conflicts. Unlike the lack of literature concerning artillery in Vietnam is Alan Smith's *Gunners in Borneo*, a homage to the otherwise historically neglected actions of Australian artillerymen in the Indonesian Confrontation.⁵ Although in part contributing to this research, *Gunners in Borneo* also stands as evidence to what the historiography of artillery in Vietnam is lacking. The most dedicated literature are the memoirs and unit histories compiled and published as a testament to the achievements of artillerymen. *Rounds Complete* by Steve Gower is the only published account of an Australian FO; a memoir of his service in Vietnam across 1966-1967.⁶ Limited in scope of time and space, *Rounds Complete* provides at minimum a firsthand account of being an Australian FO in Vietnam. Historical literature concerning artillerymen in Vietnam evidently lacks focus on the role of FOs and the contemporary consequences.

In order to appropriately address the role of FOs in Vietnam it is necessary to understand the character of the conflict and the context of their employment. In an effort to assess the combat effectiveness of 1 ATF Andrew Ross, Robert Hall and Amy Griffin published *The Search for Tactical Success in Vietnam*. Focused on 1 ATF combat operations, their study employs operations research and analysis in order to identify the full spectrum of combat tasks conducted by Australian and New Zealand forces in Phuoc Tuy province. For 1 ATF, the Vietnam War consisted of thousands of small contacts with two or three enemy punctuated by over a dozen pitched engagements.⁷ The University of New South Wales has also established an online public database to demonstrate such information. 'Australia's Vietnam War' is a website which possesses an interactive Battle Map storing written and

² Peter Dennis and Jeffrey Grey, *Emergency and Confrontation: Australia Military Operations in Malaya and Borneo 1950-1966* (St Leonards: Allen & Unwin, 1996) 309-311.

³ Ian McNeill, *To Long Tan: The Australian Army and the Vietnam War 1950-1966* (St Leonards: Allen & Unwin, 1993); Ian McNeill and Ashley Ekins, *On the Offensive: The Australian Army in the Vietnam War, January 1967-June 1968* (Crows Nest: Allen & Unwin, 2003); Ashley Ekins with Ian McNeill, *Fighting to the Finish: The Australian Army and the Vietnam War, 1968-1975* (Crows Nest: Allen & Unwin, 2012).

⁴ David Horner, *The Gunners: A History of Australian Artillery* (St Leonards: Allen & Unwin, 1995) 469-496.

⁵ Alan Smith, *Gunners in Borneo: Artillery During Indonesian Confrontation, 1962-66* (Manly: Royal Australian Artillery Historical Company, 2008) xxi.

⁶ Steve Gower, *Rounds Complete: an Artillery Observer in Vietnam* (Newport: Big Sky Publishing, 2017).

⁷ Andrew Ross, Robert Hall and Amy Griffin, *The Search for Tactical Success in Vietnam: An Analysis of Australian Task Force Combat Operations* (Cambridge: Cambridge University Press, 2015) 3.

pictorial data on 1 ATF combat operations, thus enabling a holistic appreciation of 1 ATF actions in Vietnam.⁸ As such the nature of operations spanned a spectrum of low- to high-intensity combat.

This too is reflected in the unit war diaries and after-action reports archived at the Australian War Memorial. These primary sources indicate the daily occurrences of 1 ATF units, including major patrolling and clearance operations. Typically concluded with short contact reports and after-action data, the major combat operations indicate a significant contribution by the artillery. This was enabled by the documentation of previous operations and orders issued thereafter, setting the conditions for FOs to best support the infantry. Although Australian military historiography lacks an account of FO contributions to 1 ATF operations there is significant historical data from which to conduct an appreciation of their role.

Before Vietnam

The Second World War

The Australian experience of artillery forward observation in the Second World War is reflective of the wider doctrine, training, and employment of British Commonwealth forces. Then referred to as Forward Observation Officers (FOO), artillerymen in the Pacific Theatre developed a closer relationship with the infantry than had been experienced on the North African front. This was a necessity in such restrictive terrain, requiring intimate support between FOOs and their supported units. Rather than establishing static observation posts in overwatching positions FOOs were required to closely manoeuvre with the infantry in arduous conditions, with the added responsibility of accurately locating targets and coordinating effective artillery fire thereafter.⁹

Australian offensive operations in New Guinea demonstrated this evolved relationship. Tasked with securing the town of Finschhafen in September 1943, the 20th Brigade relied on a combined arms approach to dislodge the Japanese defenders. Orders for the impending assault required 2/12 Field Regiment FOOs to be

allocated at the battalion level, establishing a direct relationship between the infantry and their supporting artillery.¹⁰ This enabled FOOs to direct artillery fire against enemy positions as they became known, typically occurring once the infantry had been engaged with effective fire. During their attack on Finschhafen 20th Brigade FOOs would, at times, be required to direct artillery fire within 200 metres of their position amongst the infantry, unlike observers in North Africa who could identify most targets kilometres away.¹¹ This could not be achieved without direct communication to the supported infantry commander in order to ensure troop safety and battlefield situational awareness, demonstrating how terrain drove the character and culture of combat.

*Years of close combat in the jungle
honed the skills of infantry-artillery
cooperation.*

Engaging the enemy in close proximity to friendly forces was a common operating procedure for Australian FOOs in the Pacific Theatre. Lieutenant Howard Nankervis, a FOO with the 2/43rd Battalion in June 1945, recounts having been in close contact with Japanese forces on the island of Labuan. Assessing the enemy as fifty metres to his front, Nankervis accurately directed artillery from nearby 25-pounder guns. In doing so he “used the procedure for a close shoot,”¹² referring to the method artillerymen employed in order to safely and precisely engage nearby targets. Such procedures had been developed throughout the Second World War as a consequence of the nature of combat. By 1945 there was common knowledge amongst the artillery and infantry, directly communicated through a FOO, on the practice of ‘danger close’ engagements.

Years of close combat in the jungle honed the skills of infantry-artillery cooperation. Here the Australian Army learnt harsh lessons, with fighting in the Pacific characterised by the problem’s terrain, climate, and vegetation posed to conventional warfare.¹³ These characteristics, as much as enemy action, required amendment

⁸ Robert Hall, ‘Australia’s Vietnam War,’ *University of New South Wales*, accessed 18 June 2019 at: www.vietnam.unsw.adfa.edu.au

⁹ T.R. Moreman, *The Jungle, the Japanese and the British Commonwealth Armies at War, 1941-45: Fighting Methods, Doctrine and Training for Jungle Warfare* (London: Frank Cass, 2005) 155.

¹⁰ 20th Brigade Operations Order, September 1943 – AWM 52 item 8/2/20.

¹¹ Horner, *The Gunners*, 368.

¹² Max Parsons, *Gunfire! A History of 2/12 Australian Field Regiment 1940-1946* (Melbourne: Globe Press, 1992) 224-225.

¹³ Moreman, *The Jungle, the Japanese and the British Commonwealth Armies at War*, 2.

to the doctrine, training, and employment of FOs. After the Second World War senior members of the Australian artillery met to discuss the implication of jungle warfare experience on the standing Army, concluding that close country operations would be practiced as a phase of training.¹⁴ Although not neglectful of their experience against the Japanese in the Pacific, future experiences would demand more from Australian jungle warfare training.

The Pentropic Period

The post-Second World War period consisted of persistent conflict and restructure for the Army, enabling further application of close artillery-infantry support. The demobilisation of the wartime army and subsequent funding shortfalls, however, meant the outbreak of the Korean War in 1950 placed enormous stress on the organisation as it struggled to sustain the commitment made by the Australian government. Serving as part of a British Commonwealth brigade, the Australian Army's contribution ultimately consisted of two infantry battalions. New Zealand would provide direct artillery support to the Australian infantry through their 16 Field Regiment. Nevertheless, some Australian artillerymen served alongside their infantry comrades as FOOs, such as Captain John Salmon. Salmon, who was wounded in combat in December 1952, would go on to provide lessons learnt in the application of artillery in Korea to his fellow gunners.¹⁵

*... some Australian artillerymen
served alongside their infantry
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John Salmon. ... who was wounded
in combat ...*

The 1st Battalion, Royal Australian Regiment's (1RAR) unit records from that period also indicate that FOOs were still allocated at the company level for operations, while 3RAR's account of the Battle of Maryang San indicates the close integration of artillery into offensive activities.¹⁶ Although not committed in strength,

¹⁴ Summary of Decisions Reached at BRA's Conference, Victoria Barracks, Melbourne – AWM 52 item 721/5/1.

¹⁵ Horner, *The Gunners*, 434; and, J. R. Salmon, 'Some Observations on Field Artillery in Korea,' AWM MP 729/8 item 47/431/8.

¹⁶ 1RAR Operations Order 9/52, Op FAUNA – AWM 85 item 2/17.; 3RAR Operational Summary, 2-8 Oct 1951, Op COMMANDO I and II – AWM 85 item 4/34.

artillerymen were still considered integral members of combined arms operations.

Following the Korean War the Australian Army committed a small force to the British Commonwealth Far East Strategic Reserve in Malaya. While those units fulfilled a Cold War contingency force requirement, and concurrently conducted anti-terrorist operations, a major reform was introduced to the army in 1960. Termed the Pentropic Division, the Australian Army sought to reflect American organisation and doctrine through the generation of "a lean, powerful, versatile organisation readily adaptable to any type of operation...in Southeast Asia."¹⁷ Although the higher level concepts for reorganisation did not impact the fundamental role of FOs, this reformation introduced a training doctrine aimed to prepare small brigade sized task forces for counter-revolutionary warfare in the near region. Richmond Cubis, in his recount of 'A' Battery's history, identifies two key Pentropic exercises designed to prepare such a force. The first took place in 1961 and tested the deployment of a combined arms task force to a limited war in Southeast Asia. The second occurred the following year and intended to test the 1st Task Force's ability to adopt a brigade-like structure in reaction to a strategic setting reminiscent of South Vietnam. This exercise, conducted in rugged and heavily vegetated terrain, seriously tested the infantry-artillery relationship by imposing a requirement for intimate planning.¹⁸ Although it is difficult to assess if those who partook in such exercises also fulfilled similar roles in Vietnam, it is evident the Army's senior leadership had continued to apply the Australian experience of war in training.

Emergency and Confrontation

The commitment of an Australian artillery battery to Commonwealth forces in Malaya presented the familiar challenge of indirect fire in restrictive terrain. Attached to the 28th Commonwealth Brigade, the Australian battery would be expected to directly support whichever unit required their firepower during counter-terrorist operations. This was often limited to harassing fire aimed at likely terrorist locations within the jungle. 105 Field Battery, for example, fired some 2000 high explosive rounds

¹⁷ E.G. Keogh, 'Introduction,' *Australian Army Journal*, No 129, February 1960, 7.

¹⁸ Richmond Cubis, *A History of 'A' Battery* (Sydney: Elizabethan Press, 1978) 274-275.

in support of Operation Shark in May 1956, with all their missions being recorded as ‘result of fire not known.’¹⁹ Major Bruce Bogle, their battery commander, described the inability of FOs to observe targets in such terrain and the associated technical problems in providing accurate fire.²⁰ This was exacerbated by the nature of operations, commonly small patrols aimed at disrupting enemy lines of communication rather than large clearance operations.

At the completion of their two-year tour 105 Field Battery had been assessed as untested in their “primary role as a supporting artillery unit in mobile limited war operations.”²¹ Their replacement, 101 Field Battery, experienced much the same. Regardless of the low-intensity combat FO teams continued to accompany infantry patrols. 101 Field Battery’s operational report from February 1960 indicates that a three man detachment accompanied elements of the 1st Battalion, 3rd East Anglian Regiment on jungle operations. This FO team likely only coordinated their harassing fire, with engagements over 9-11 February detailing the expenditure of 249 high explosive rounds against undefined targets at over a dozen locations.²² Although lacking the tempo of operations later experienced in Vietnam, the employment of FOs in Malaya provided artillerymen exposure to the low-intensity requirements of jungle patrols.

The employment of FOs matured during Australia’s commitment to Borneo during the Indonesian Confrontation. Confrontation was characterised by long range jungle patrolling and ambushing, resulting in a similar operational role for the artillery and FOs as in Malaya. Given the requirement for an artillery battery to support two or more infantry battalions there was a persistent shortage of FOs. Alan Smith notes that FO assistants (FO Ack) and signallers would be relied on for support to platoon level patrols, allowing the officers to remain with their company commanders. This enabled the development of close working relationships between FO teams and their supported units at

all levels. Smith also identifies the requirement for FOs to approach combat operations as an infantryman would; they would need to be physically and mentally robust, moving and fighting as infantryman with the additional responsibility of controlling indirect fire in obscuring terrain.²³

Don Quinn, commander of 102 Field Battery in Borneo, concluded that two pertinent lessons in technical gunnery could be learnt from jungle operations ...

When planning for patrolling operations FOs would be briefed on likely enemy locations from the supported infantry commander and an intelligence officer, thereafter recording targets for quick engagement. In order to then safely engage the enemy FOs would initially fire a white phosphorous round which “could be heard, smelt and its plume [seen] through the jungle before billowing upwards.”²⁴ Once their initial round was identified it could be easily adjusted onto the enemy using sight or sound ranging. The infantry also conducted ambush operations in Borneo. In order to best support these tasks FOs would register the ambush area as a target to engage on contact. Then, once the enemy appeared, artillery fire would be directed onto the most effective location. This method was employed for a platoon of 3RAR when they were heavily engaged during an ambush on 15 June 1965. As the enemy counterattacked with machine-gun and mortar fire, the Australians engaged with their own mortars and artillery. The platoon was able to withdraw under the cover of artillery fire, which had effectively neutralised the enemy’s heavy weapons.²⁵

The Malayan Emergency and Indonesian Confrontation undoubtedly provided Australian artillerymen with invaluable experience in close-country operations. Don Quinn, commander of 102 Field Battery in Borneo, concluded that two pertinent lessons in technical gunnery could be learnt from jungle operations: firstly, an unusual problem requires a flexible approach, and secondly, the techniques of technical gunnery

¹⁹ 105 Field Battery Firing Report, May 1956 – AWM 95 item 3/5/11.

²⁰ H.B. Eaton, *Something Extra: 28 Commonwealth Brigade 1951 to 1974* (Durham: The Pentland Press, 1993), 176.

²¹ *Ibid*, 187.

²² 101 Field Battery War Diary, February 1960 – AWM 95 item 3/2/5.

²³ Smith, *Gunners in Borneo*, 44.

²⁴ *Ibid*, 45.

²⁵ David Horner, *Duty First: the Royal Australian Regiment in war and peace* (Sydney: Allen and Unwin, 1990), 169-170; and 3RAR Duty Officer’s Log, 15 June 1965 – AWM 95 item 7/3/49.

remain the same whatever the tactical problem.²⁶ Although in a low-intensity environment, and in support of a multi-national force, FOs practiced the tactical and technical skills which would soon be employed in Vietnam.

The Employment of FOs

Initial Employment

Multi-national operations were a reoccurring theme for Australia's initial deployment of combat forces to Vietnam. 1RAR was committed to South Vietnam in June 1965, being integrated into the United States 173rd Airborne Brigade. Although trained in jungle warfare, US forces lacked the counter-insurgency experience of their Commonwealth counterparts.²⁷ 1RAR was initially provided the direct support of New Zealand's 161 Field Battery, including their FOs. 105 Field Battery, who had arrived in September, was employed in the brigade's integral artillery battalion supporting operations across the 1st US Division's area of operations.

Australian gunners identified some key differences between their operating procedures and those of the Americans. Firstly, Major Peter Tedder, commander 105 Field Battery, accurately noted the significant firepower available to the US brigade. During operations in October 1965 he witnessed the coordination of heavy and light artillery, mortars, bombers, and ground attack aircraft; all of which would become available to his FOs.²⁸ Further, there was a distinct difference in their methods of support to the infantry. The Australians continued to employ the British methods of fire support, in which the senior artillery officer (a Major) directly advised his supported infantry commander (a Lieutenant-Colonel) while the battery's Captains were provided as FOs to the companies. The Americans, however, rotated their NCOs as FOs while a junior officer directed artillery support to a battalion. 1RAR's commander later remarked how he would attend orders and execute operations with the senior artillery officer by his side, a practice the Americans found odd.²⁹

The importance of an attached FO was not lost on the Australian infantry in their first months on operations in Vietnam. Periodically requiring artillery fire in support of small contacts, it was not until Operation Hump in November 1965 that the small Australian-New Zealand contingent exercised their intimate relationship. 105 Field Battery was now in direct support of 1RAR, although 161 Field Battery continued to provide two FO teams. The operation required a helicopter insertion followed by a search-and-destroy mission twenty kilometres north of Bien Hoa airbase where a Viet Cong (VC) regimental headquarters was suspected to be located.³⁰ On 8 November 1965 A Company, 1RAR contacted a dug-in company in the Gang Toi Hills and began taking significant casualties. Their attached FO accurately directed the fire of 105 Field Battery on to the enemy, enabling the company to withdraw.³¹ This was a bloody experience for 1RAR and was an early example of the type of encounter battle periodically experienced by Australian forces in Vietnam.

*... the overwhelming firepower of
artillery and air support enabled their
manoeuvre ...*

The artillerymen would soon also pay the human cost of counter-revolutionary warfare. Operation Crimp, beginning 8 January 1966, was a search-and-destroy operation in the Ho Bo Woods, an area assessed to be used as headquarters of a large VC force. In this operation 105 Field Battery would provide FOs to each company of 1RAR as well as direct artillery support.³² The infantry were contacted soon after arrival at their landing zone and patrols into the area of operations met resistance, however the overwhelming firepower of artillery and air support enabled their manoeuvre.³³ D Company's lead platoon was soon ambushed at close range from an enemy bunker, immediately requesting fire support. Despite the provision of fire from 105 and 161 Batteries no targets could be observed by FOs due to the dense vegetation, handing over target engagement responsibility to a US air observer.³⁴ Later that day as B

²⁶ Don Quinn, 'Artillery Operations in Borneo,' *Australian Army Journal*, No 243, August 1969, 6.

²⁷ McNeil, *To Long Tan*, 84.

²⁸ Bob Breen, *First to Fight: Australian Diggers, N.Z. Kiwis and U.S. Paratroopers in Vietnam, 1965-66* (Sydney: Allen & Unwin, 1988), 108.

²⁹ McNeil, *To Long Tan*, 101-102.

³⁰ 1RAR Operation Order 14/65, Op HUMP – AWM 95 item 3/5/30.

³¹ McNeil, *To Long Tan*, 145-146.

³² 1RAR Operation Order 1/66, Op CRIMP – AWM 95 item 7/1/55.

³³ 1RAR War Diary, 8 January 1966 – AWM 95 item 7/1/55.

³⁴ 105 Field Battery Operational Analysis, Op CRIMP, Sequence of Events – AWM 95 item 3/5/32.

Company patrolled towards their objectives the attached FO, Captain Ken Bade, was killed by a command detonated booby trap. This event appears significant, receiving mention throughout historical accounts and unit war diaries.³⁵ The Australian practice of maintaining officer FOs at the company level exposed them to the perils of close combat, risking their rank and experience; an uncommon threat in earlier low-intensity Southeast Asian conflicts.

With 1 ATF

1 ATF began arriving in South Vietnam in May 1966. Its mission and command arrangements had been amended several times prior to deployment, though the Australian government had concluded that, under direct command of the US II Field Force, the task force's area of responsibility would be Phuoc Tuy province. 1 ATF initially consisted of two infantry battalions and elements of cavalry, engineers, aviation, logistics, and artillery. 1 Field Regiment, under the command of Lieutenant Colonel Richard Cubis, was responsible for providing the task force fire support. Keeping with Australian practice, artillery batteries were tasked in direct support of an infantry battalion, thereafter permanently allocating FOs to each company.³⁶

... without a nearby FO, the platoon commander was required to adjust artillery, engaging targets within 60 metres of his platoon.

As 1 ATF settled into their new base at Nui Dat initial clearing operations were conducted out to the maximum range of the infantry's mortars, some 4,000 metres known as Line Alpha. These tasks provided FOs a simple introduction to the area of operations, typically only necessitating the recording of defensive fire targets for ambush or overnight positions.³⁷ 5RAR's Operation Sydney from 4-14 July 1966 was the first task force operation beyond Line Alpha. Intending to clear the Nui Nghe hills, a fire support base was established outside of Nui Dat so that the search area was within range of 105 Field Battery's guns. This was a typical 1 ATF operation for FOs to support, being required to patrol long distances alongside the infantry, record defensive fire targets, and experience

short contacts with small groups of fleeing enemy.³⁸

1 ATF's assessment of their enemy within Phuoc Tuy also shaped their initial operations. The most reliable intelligence data had been gathered from their own operations and contact with the enemy, leading to the assessment that although 5 VC Division was present in the province it was greatly dispersed.³⁹ In order to combat the VC's control of the population 1 ATF executed cordon-and-search operations. These operations required the surrounding of a village prior to conducting a deliberate search of the area. 5RAR's Operation Sydney 2 immediately followed their clearance of Nui Nghe and demonstrates the restrictive nature of fire support in urban areas. Duc My, a hamlet which made up part of the Binh Ba village complex, was known to house some 26 VC. 5RAR's rules of engagement for this operation dictated that the unit could not initiate an engagement unless they had received fire or positively identified a hostile. Further, if fire was taken from a house there was a six step process to follow, none of which authorised the employment of direct or indirect weapons.⁴⁰ The pacification of Phuoc Tuy province was proving a complex mission for artillery observers.

Later that month, during 6RAR's Operation Hobart, the task force was exposed to how quickly a situation could shift across the spectrum of military operations. Tasked with the cordon-and-search of Long Tan village, 6RAR's B and C Companies were to establish blocking positions along the Soui Da Bang creek.⁴¹ Still one thousand metres short of their blocking position C Company made contact with an enemy force assessed as company strength. As the FO engaged with artillery fire the enemy were observed withdrawing east.⁴² B Company, believing the enemy would withdraw toward their location, prepared to intercept. Thirty minutes later the VC company was contacted. Major Noel Ford, officer commanding B Company, recorded how his 6 Platoon took the brunt of the enemy's fire. In close combat, and without a nearby FO, the platoon commander

³⁵ Ibid; 1RAR War Diary, 8 January 1966 - AWM 95 item 7/1/55; Horner, *The Gunners*, 472; and, Breen, *First to Fight*, 188.

³⁶ Horner, *The Gunners*, 475.

³⁷ Ibid, 475.

³⁸ McNeil, *To Long Tan*, 260-266.

³⁹ Ibid, 265.

⁴⁰ 5RAR Operation Order 8-66, Op SYDNEY TWO, 14 July 1966 - AWM 95 item 7/5/6.

⁴¹ McNeil, *To Long Tan*, 277.

⁴² 6RAR Operations Log, 25 July 1966 - AWM 95 item 7/6/4.

was required to adjust artillery, engaging targets within 60 metres of his platoon.⁴³

This action demonstrated that, although tasked with supporting infantry in an expectedly low-intensity cordon-and-search operation, FOs had to be prepared for close quarter combat. In both B and C Company's contacts friendly troops were wounded by their own artillery. C Company, making contact at short range without an accurate appreciation of their location, had two soldiers wounded by 161 Field Battery's fire.⁴⁴ In B Company, as the enemy closed on the isolated 6 Platoon, artillery fire was brought closer in, at which point a round landed amongst friendly troops and wounded another two soldiers.⁴⁵ This was an unfortunate experience for 1 Field Regiment and indicated a necessity to better prepare FOs for the conduct of danger close engagements. Colonel Cubis released a directive on 26 July 1966 declaring that "no target is to be initially engaged at a grid reference closer than 1,000 metres to the nearest friendly forces,"⁴⁶ thereafter requiring adjustment onto the intended target. This amendment to fire support procedures was based on the nature of operations in South Vietnam.

Character of Operations

The wide spectrum of military operations conducted by 1 ATF in Phuoc Tuy province is best conveyed by Andrew Ross, Robert Hall, and Amy Griffin in *The Search for Tactical Success in Vietnam*. By employing operations research and analysis the authors identified stark contrasts between the task force's widely remembered high-intensity battles and typical low-intensity counter-insurgency patrolling operations.⁴⁷ Amongst the combat orientated search-and-destroy missions were also the aforementioned cordon-and-search operations intended to deny VC access to the population. Intermittently 1 ATF would also focus efforts on hearts-and-minds, a term used to describe inter-agency population engagement operations aimed at mending the relationship between Vietnamese citizens and their government. This spectrum of tasks was in accordance with the prevailing

doctrine on counter insurgency operations, which defined their nature as "simultaneously political and military," being that "there is no purely military solution."⁴⁸ Throughout these tasks FOs were poised to provide observation and coordination of fire support in urban and rural environments under low- or high-intensity combat conditions; a wide spectrum within which to practice operating procedures.

***... the size and scale of combat
witnessed on 18 August was not to be
repeated during 1 ATF's tenure, ...***

1 ATF's first 'landmark battle' occurred on 18 August 1966 at the Long Tan rubber plantation. Responding to an indirect attack against the base at Nui Dat D Company, 6RAR patrolled out to Long Tan seeking evidence of the enemy's firing locations. Assessing such a patrol as the likely Australian reaction, 275 VC Regiment had established an elaborate ambush. The resulting battle raged for over four hours and resulted in 18 Australians killed in action, the task force's highest loss of life in a single contact during the war.⁴⁹ Seriously outnumbered, D Company relied on the massed firepower available from Nui Dat. Their FO, Captain Maurice Stanley of New Zealand's 161 Field Battery, held responsibility for coordinating 1 ATF's combined indirect fire. Aided by the corrections of 11 Platoon's Sergeant Bob Buick, artillery fell within 25-30 metres of friendly troops, impacting amongst the VC's assault formations.⁵⁰ Stanley had eighteen 105mm howitzers and six 155mm US self-propelled guns at his disposal throughout the battle; a regimental level of firepower unanticipated in counter-revolutionary warfare.

The Battle of Long Tan set a precedent for Australian artillery operations in Vietnam. The following month 1 Field Regiment consolidated the artillery-centric perceptions of the battle, concluding that communication from the FO on their tactical and technical intent enabled the effective application of fire support.⁵¹ Although the size and scale of combat witnessed on 18

⁴³ B Company, 6RAR After Action Report, Op HOBART – AWM 95 item 7/6/4.

⁴⁴ 6RAR Operations Log, 25 July 1966 – AWM 95 item 7/6/4.

⁴⁵ McNeil, *To Long Tan*, 279.

⁴⁶ Safety Precautions - Shooting, 1 Field Regiment Notebook, 26 July 1966 – AWM96 item 3/5/40.

⁴⁷ Ross, et al., *The Search for Tactical Success in Vietnam*, 3-4.

⁴⁸ Military Board, *The Division in Battle, Pamphlet No. 11, Counter Revolutionary Warfare*, (Canberra: Army Headquarters, 1966), 25.

⁴⁹ McNeil, *To Long Tan*, 320-340.

⁵⁰ Ross, et al., *The Search for Tactical Success in Vietnam*, 38.

⁵¹ Battle of Long Tan: Some Artillery Aspects, 105 Field Battery Operations Log, 14 September 1966 – AWM95 item 3/5/45

August was not to be repeated during 1 ATF's tenure, FOs were now acutely aware of the high-intensity combat they best be prepared for. FOs' memoirs and recollections regard the Battle of Long Tan as a watershed in 1 ATF's employment of artillery, acknowledging the potential requirement to avoid tactical disaster with the coordination of massed firepower at short notice.⁵²

Understanding that pitched battles alone would not defeat their enemy, 1 ATF employed extensive patrolling to disrupt insurgent operations in Phuoc Tuy. Patrols were typically directed by intelligence gathered on likely concentrations of enemy forces. Intent on dislocating the VC from their support networks amongst the population, patrols would physically clear rural and urban areas in order to deny the enemy their once coveted freedom of action.⁵³ Although infamously labelled search-and-destroy operations 1 ATF's execution of area clearances stands in contrast to the large US brigade and division-sized manoeuvres. Generally an infantry battalion would be assigned an area of operations within which their companies would be ordered to conduct a myriad of tasks such as patrols, ambushes, village searches, and mentoring South Vietnamese forces.⁵⁴

... although heavily employed throughout the task force, the FOs role was often to be prepared more so than to be in action.

This required the proliferation of FOs throughout the battalion's tactical area of responsibility, with each team potentially supporting a different task at any one time. Throughout the conflict, as the risk of major contact diminished, 1 ATF would field smaller platoon-sized patrols who too needed an FO,⁵⁵ demanding more trained observers and their associated communications equipment. Patrolling activities also resulted in 42.1% of the

task force's contacts from 1966-1971.⁵⁶ Patrol contacts were short in time and space; typically lasting less than 10 minutes and initiated at a range of less than 30 metres. 1 ATF calls for artillery support usually took 10 minutes to get effective fire on a target, with over 60% of patrol contacts concluding within that timeframe. The VC's primary tactic in patrol contacts was to refrain from becoming decisively engaged and quickly withdraw.⁵⁷ This demonstrates that, although heavily employed throughout the task force, the FOs role was often to be prepared more so than to be in action.

Support to Manoeuvre

Overall 1 ATF fire support was coordinated by the Commanding Officer of the attached artillery regiment. As artillery commander it was his duty to manage the employment of resources, allocate supporting fires, and appropriately apply artillery support to specific targets.⁵⁸ These responsibilities were not formally directed until January 1967, drawing on lessons learnt and procedures established in the application of fire support thus far. This demonstrates the developmental nature of artillery support to a task force engaged in a coalition led counter-insurgency operation. Establishing overarching control of artillery then enabled the appropriate distribution of resources in support of infantry units, particularly at the company level.

Pre-planned fires, however, were rarely employed by FOs. Patrol contacts, as previously discussed, dominated artillerymen's calls for fire. Despite the VC's tendency to withdraw shortly after contact it was standard to request artillery support against an engaged enemy or their likely withdrawal routes. In order to do so an FO would determine his location on a map, plot the likely enemy location relative to their own, and send that map reference to the gunline in a 'call for fire'.⁵⁹ Typically completed under direction of their infantry commander, the intent was to employ overwhelming firepower to achieve battlefield initiative. Colonel Eric Smith, Commanding Officer 7RAR in 1967, unequivocally agreed. Writing in 1969 he

⁵² Gower, *Rounds Complete*; Mark Jamieson, 'Call Sign 11 Alpha: an FO (Ack) in Vietnam,' *Sabretache*, December 2016, Vol. 57, No. 4, 35-42; and, Author's Interview with Kevin O'Brien dated 12 August 2019.

⁵³ Ross, et al., *The Search for Tactical Success in Vietnam*, 67.

⁵⁴ R. A. Grey, *Infantry Lessons from Vietnam* (Canberra: Directorate of Infantry, 1972), 25-26.

⁵⁵ Ross, et al., *The Search for Tactical Success in Vietnam*, 69.

⁵⁶ *Ibid*, 67.

⁵⁷ Robert Hall and Andrew Ross, 'Kinetics in counterinsurgency: some influences on soldier combat performance in the 1st Australian Task Force in the Vietnam War,' *Small Wars & Insurgencies*, September 2010, Vol. 21, No. 3, 505.

⁵⁸ Fire Support of the Task Force, 1 Field Regiment Notebook, 18 January 1967 – AWM 95 item 3/6/7.

⁵⁹ Jamieson, 'Call Sign 11 Alpha,' 37-38.

insisted infantry commanders liberally employ the artillery support available to them. His key recommendation was that FOs initiate a fire mission on contact, thereafter being able to proceed or desist based on the tactical situation.⁶⁰ A FOs fire planning was typically limited to the recording of defensive fire (DF) tasks. DFs were likely enemy locations or routes which threatened a static emplacement, such as Nui Dat, a fire support base, or overnight position. The firing data for these targets was then calculated at the guns so as to minimise the time required to engage them.⁶¹ Some FOs would take to sleeping with their head pointed north in anticipation of contact overnight, thereby able to swiftly orientate themselves and quickly request a fire mission.⁶² Recording DFs was a common practice for FOs in Vietnam and best prepared them to support an infantry unit with a minimum of delay.

Other than in contact infantry commanders could rely on their forward observer to determine their location. Navigation in Vietnam was difficult in heavily vegetated but featureless terrain. FOs widely accepted the responsibility for determining and reporting the company's location. When assistance was required in doing so FOs could request a fixation shoot which, if approved, resulted in a single gun engaging with one round at a safe location. FOs would then employ a resection method to determine their location relative to the sound of the impacting round.⁶³ In order to improve infantry-artillery operations FOs would also establish standard operating procedures with their supported commander.⁶⁴ Captain Don Tait, while an FO with 1RAR in 1968, established a trust-based relationship with his supported commander. The simple notion of accepting Tait's map reference as the company's current location expedited a call for fire, subsequently allowing time for quick tactical planning.⁶⁵ Lieutenant Kevin

O'Brien, who arrived in Vietnam in February 1970, followed suit. O'Brien arranged with company commanders that his first reaction on contact should be to request artillery fire. Then, once the first round had safely impacted, he would discuss options and associated risks with the infantry. Although most contacts were short and typically concluded with the enemy's withdrawal he "always called a fire mission, whether it was 1 man or 50 men, because how did I know? It could have been another Long Tan for all I knew."⁶⁶ Both FOs had made the same conclusions as Colonel Smith; lessons learnt from battle in the Gang Hoi Hills, Ho Bo Woods, and at Long Tan.

***Captain Don Tait, an FO with 1RAR
in 1968, established a trust-based
relationship with his supported
commander.***

The intent of these directives and procedures was to reduce the time taken to safely fire artillery in support of infantry units. Sometimes, however, artillery alone would not enable defeat of the enemy. Whereas artillery during a defensive battle could cause mass casualties amongst an attacking enemy, offensive operations proved difficult to support. Operation Bribie was a 6RAR search-and-destroy task in reaction to a VC attack on a South Vietnamese military installation at Phuoc Hai. After a delayed and poorly coordinated combined armoured personnel carrier (APC) and helicopter assault A Company encountered a VC force of comparative strength, later determined to be a regular and weapons company of D445 Battalion.⁶⁷ B Company was then committed to a costly and unsuccessful attack, with supporting artillery fire falling 50-75 metres to their front.⁶⁸ Despite the efforts of FOs involved the chaos and confusion of a three hundred and sixty degree battlefield resulted in ineffective artillery and mortar fire against an entrenched enemy.⁶⁹

⁶⁰ E.H. Smith, 'Command and Control in Battle,' *Army Journal*, No. 240, May 1969, 4-5.

⁶¹ Gower, *Rounds Complete*, 37-38.

⁶² *Ibid*, 150; and, Author's Interview with John Sheedy dated 8 August 2019.

⁶³ Use of Artillery in Determining Location, 105 Field Battery Operations Log, August 1966 – AWM95 item 3/5/45

⁶⁴ 103 Field Battery went so far as to conduct a basic artillery course for 5RAR in February 1967, seen in Introduction to Employment of Artillery, 1 Field Regiment Notebook – AWM95 item 3/6/7.

⁶⁵ Author's Interview with Don Tait dated 8 August 2019.

⁶⁶ Author's Interview with Kevin O'Brien dated 12 August 2019.

⁶⁷ McNeil and Ekins, *On the Offensive*, 111.

⁶⁸ Op BRIBIE After Action Report by B Company, 6RAR, 22 May 1967 – AWM95 item 7/6/11.

⁶⁹ Captain James Ryan, FO B Company, 6RAR received a Mentioned in Despatches: Commonwealth of Australia Gazette, 'To Be Mentioned in Despatches,' 23 November 1967, No. 100, 6357; Commanding Officer 6RAR determined that, although combined arms had been applied as best practical, tanks would be required to fulfil the shortfalls of APCs and artillery in hasty assaults; Op

Following the operation 1 Field Regiment's debriefing outlined the necessity for retraining in danger close procedures, with artillery rounds having caused casualties amongst the attacking infantry.⁷⁰ Although directing revision on technical gunnery, it would be the tactical application of procedures which would solve the individual FO's operating issues.

The employment of FOs was shaped from 1965-1967. Their introduction to operations in South Vietnam and subsequent integration into 1 ATF missions demanded an adaptation beyond what had been learnt on prior deployments to Malaya and Borneo. Their role had been defined as the conduit of fire support amongst the infantry, placing responsibility on the individual FO to overcome the challenges posed by their operating environment in order to best coordinate indirect fires.

The Development of FOs

Terrain and Gunnery

Much like the employment of artillery in previous Southeast Asian theatres FOs were required to adapt to the close country conditions of Vietnam. Prior to the deployment of artillery in 1965 the Australian Army Training Team Vietnam (AATTV) gained valuable experience. Captain R. Clark, a combat engineering officer with AATTV from 1963-64, identified key differences between Australian artillery methodology and that which suited the operational conditions of South Vietnam. Clark recommended ground observers practice in land navigation over rough and restrictive terrain so as to condition artillerymen at infantry standard. Limited visibility would therefore require alternate means of artillery adjustment, such as by sound.⁷¹ Colonel Cubis summarised the experiences of 105 and 161 Batteries in June 1966, detailing that "most observation post shooting has been done blindly, judging by the sound and occasional flash of fall of shot."⁷² 1 Field Regiment's commander would often comment on the technical aspects of gunnery,

including the antiquated line of fire procedure, mistakes in command posts, safety precautions, sound adjustments, and equipment calibration.⁷³ These reports would standardise and shape FOs' application of gunnery to overcome the issues posed by terrain in their area of operations.

... soon learnt that the methods for artillery adjustment taught at the Australian Army's School of Artillery were not generally applicable in Vietnam.

The doctrinal method of initiating fire support was also not applicable given Colonel Cubis' orders for the minimum distance of opening rounds. Captain Steve Gower, who deployed to Vietnam with 101 Field Battery in September 1966, soon learnt that the methods for artillery adjustment taught at the Australian Army's School of Artillery were not generally applicable in Vietnam. Rather than employ the standard method of adjustment in which an observer brackets a target with rounds over and under in order to accurately determine its location, rounds were continually dropped back from the minimum distance until on target.⁷⁴ Despite this common procedure the doctrinal methods of fire support continued to be instructed at the School of Artillery throughout the conflict. FOs recall the requirement to complete a basic and advanced observer's course prior to deploying in that role. Some artillerymen, however, would only have a minimal understanding of observation procedures from their initial artillery officer training. Regardless, the School of Artillery only provided technical training from static observation posts established on high ground overlooking pre-planned target areas. FOs would, in theatre, more often rely on the sound of impacting rounds to adjust artillery fire.⁷⁵

The individual FO would therefore be required to take the technical training received and implement their own procedures to overcome the difficulties of employing artillery in close country. Beyond adjusting by sound FOs could also employ different rounds. In 1968 102 Field

BRIBIE Combat Operations After Action Report, 6RAR, 22 May 1967 – AWM95 item 7/6/11.

⁷⁰ Op BRIBIE Combat Operations After Action Report, 6RAR, 22 May 1967 – AWM95 item 7/6/11; and, Op BRIBIE Minutes of Debriefing, 1 Field Regiment Notebook, 20 February 1967 – AWM95 item 3/6/7.

⁷¹ R. Clark, 'Artillery in Vietnam,' *Australian Army Journal*, December 1964, No. 187, 28.

⁷² Operational Report Number 1, 1 Field Regiment Notebook, 30 June 1966 – AWM95 item 3/5/39.

⁷³ Colonel Cubis' comments are compiled as minutes; see Ibid; and, AWM95 item 3/5/40.

⁷⁴ Gower, *Rounds Complete*, 35.

⁷⁵ Author's Interview with Don Tait dated 7 August 2019; Author's Interview with Kevin O'Brien dated 12 August 2019; Author's Interview with Alexander Main dated 13 August 2019; and, Author's Interview with Robert McEvoy dated 14 August 2019.

Battery's Bombardier John Harms turned to the use of white phosphorous in initial adjustment to aid the visual acquisition of rounds, switching to high explosive shells once in the target zone.⁷⁶ This technique had also been practised by his battery in Borneo some three years earlier,⁷⁷ demonstrating the application of experience gained outside of Vietnam. Of the same battery was Captain Don Tait and Lieutenant Ian Ahearn. In order to increase observation into a target area Tait would use a mix of delayed and quick fuses, thereby removing vegetation with ground detonating rounds and airburst shrapnel.⁷⁸ Sound adjustment could too prove ineffective in the crescendo of battle. Lieutenant Ian Ahearn would gauge the distance an artillery round was falling at based on the type of shrapnel which passed overhead. If it was 'live', being that it could maim, then rounds were as close as feasibly safe;⁷⁹ a typical requirement for troops contacting enemy within 30 metres. All three observers were of the same battery and operated in Vietnam in 1968. Despite this they employed different technical procedures, and likely at times similar methods, to overcome the limitations of close country warfare.

Tactics and Gunnery

The pre-Vietnam tactical application of artillery was largely shaped by the Army's reorganisation for battle under the Tropical Warfare Division. Beginning at the end of 1964, this reformation led to the restructuring of artillery regiments. Each regular army regiment now consisted of three field batteries, within which each battery had a six gun troop and an observer section.⁸⁰ 1 Field Regiment, in anticipation for a likely deployment to Vietnam, began exercising in this construct from February 1966.⁸¹ Colonel Cubis, in an operational report to Army Headquarters, attributes their successful employment of artillery in support of 1 ATF to Exercise Otho. He suggested that, in preparation for their eventual deployment, 4 Field Regiment should also seek to train in isolation from the infantry to

best prepare their technical procedures.⁸² Exercise Otho's focus, however, was on the guns and those who operated them; FOs rarely observed the fall of shot outside of a static observation post and did not practice integration with an infantry unit.⁸³ Following this activity 103 Field Battery's commander and FO parties departed on Exercise Iron Lady with 5RAR for eight days, their first opportunity to operate with an infantry unit albeit without the live fire support of their battery.⁸⁴

FOs who arrived early in 1 ATF's deployment describe how the 'danger close' methods used in Vietnam were different from what was instructed at the School of Artillery.

Despite the ill-prepared nature of infantry-artillery tactical integration FOs were nonetheless able to devise methods to effectively employ their gunnery skills. These methods typically intended to meet the requirement for a quick artillery response to contact. 105 Field Battery's commander, in an analysis of operations prior to August 1966, regarded the quick employment of artillery as of "excellent morale value to own troops and a corresponding reverse effect upon the enemy."⁸⁵ FOs were enabled to achieve this through the aforementioned artillery safety directives and agreed standard operating procedures. Given the close proximity of a typical contact, however, there was an inherent requirement to often employ 'danger close' procedures. 'Danger close' was a term used to describe the employment of fire support within 600 metres of friendly forces, also acting as an order within the artillery to apply stricter safety measures and procedures during the conduct of fire missions. FOs who arrived early in 1 ATF's deployment describe how the 'danger close' methods used in Vietnam were different from what was instructed at the School of Artillery, a direct result of the theatre's operational conditions.⁸⁶

⁷⁶ Jamieson, 'Call Sign 11 Alpha,' 38-39.

⁷⁷ Smith, *Gunners in Borneo*, 45.

⁷⁸ Author's Interview with Don Tait dated 7 August 2019.

⁷⁹ Author's Interview with Ian Ahearn dated 13 August 2019.

⁸⁰ Horner, *The Gunners*, 459-460.

⁸¹ 1 Field Regiment's Commander's Diary, 1-8 March 1966 – AWM95 item 3/6/1.

⁸² Operational Report Number 1, 1 Field Regiment Notebook, 30 June 1966 – AWM95 item 3/5/39.

⁸³ Author's Interview with Peter Aspinall dated 16 August 2019.

⁸⁴ 1 Field Regiment's Commander's Diary, 17-24 March 1966 – AWM95 item 3/6/1.

⁸⁵ Operational Analysis, 105 Field Battery Diary, 4 August 1966 – AWM95 item 3/5/45.

⁸⁶ Gower, *Rounds Complete*, 36; and, Author's Interview with Peter Aspinall dated 16 August 2019.

Lieutenant Neville Clark relied on these amended procedures to effectively employ close artillery fire during the Battle of Suoi Chau Pha on 6 August 1967. Tasked with search-and-destroy patrols in the Hat Ditch area, 7RAR's A Company encountered a VC force of similar size, resulting in a classic pitched battle.⁸⁷ As both the Australians and VC attempted to gain the initiative through manoeuvre Clark directed artillery fire support, the assessed cause for the enemy's withdrawal.⁸⁸ In doing so Clark employed non-traditional methods of fire control. Once the fire of 106 Field Battery had safely been adjusted through sound ranging at 200 metres, Clark made a bold adjustment based on 1 Platoon's reports rather than apply the cautious methods of a 'danger close' procedure. According to the platoon's lead scout rounds impacted 20 metres to his front, decimating the assaulting VC as they rose to charge.⁸⁹ This incident was a particular prompt for Colonel Eric Smith's later comments on the requirement for infantry commanders to rely on close and responsive artillery fire in battle.⁹⁰

... importance of brief but timely reports on infantry actions, recognising that artillery channels were traditionally the best for quick and reliable information.

A tactical sub-task of FOs was also to provide regular up-to-date situation reports to their higher headquarters. By constantly advising on their location, enemy contact, and their supported commander's intent the artillery tactical headquarters could conduct preliminary analysis and quick planning in preparation for fire support. Colonel Cubis highlights the importance of brief but timely reports on infantry actions, recognising that artillery channels were traditionally the best for quick and reliable information.⁹¹ As infantry patrols reduced in size and in an effort to provide

proliferated tactical fire support it became necessary for FO parties to split into smaller groups. The infantry's Mortar Fire Controllers (MFC) would also be integrated into the party, providing at least a third qualified indirect fire observer.⁹² In this way a single FO party could form three or four elements, providing the company headquarters and individual platoons with fire support and mission reports.

105 Field Battery's operations log from 9 June 1966 includes a series of situation reports in which radio callsign '11', the FO, details the actions of 'Foxhound 12,' an infantry platoon. That evening callsign '11B', an element of callsign 11's FO party, conducted a fire mission after his supported infantry element contacted five VC.⁹³ This was by no means an isolated occurrence. Bombardier John Mottershead, a FO Ack with 104 Field Battery in 1968, recalls establishing close relationships with other NCOs amongst the platoons. Much like the FO at company level, FO Acks developed operating procedures with platoon commanders and often patrolled amongst the lead formation to provide the most effective fire control on contact. Mottershead, during his second tour of Vietnam as a Sergeant in 1971, identified that more FO Acks and MFCs deployed with the battalions, enabling support to most patrols.⁹⁴ These methods allowed FO teams to best support the task force's tactical activities.

Fire Support in Combined Arms Combat

An Army's combat power can be measured by their "ability to combine fire, protection, and movement by different arms."⁹⁵ Despite advances in technology, the 'arms' that exist in the 21st Century are fundamentally the same as those employed by 1 ATF: infantry, armour, engineers, aircraft and artillery. A FOs role in combined arms combat was and is to coordinate the application of fire support with manoeuvre. Fire support can be defined as the application of

⁸⁷ McNeil and Ekins, *On the Offensive*, 212-213.

⁸⁸ Ibid, 214; and, Regimental Information Sheet Number 182, 4 Field Regiment Notebook, 6 August 1967 – AWM95 item 3/7/2.

⁸⁹ Diary of Lieutenant Neville Clark quoted in: Horner, *The Gunners*, 484; Lieutenant Neville Clark's efforts saw him awarded a Military Cross: Sydney Morning Herald, 'CMF man wins MC for Vietnam Courage,' 24 April 1968, 9.

⁹⁰ Smith, 'Command and Control in Battle,' 4-5; and, McNeil and Ekins, *On the Offensive*, 214.

⁹¹ Use of OPs: Forwarding of Information, 105 Field Battery Diary, 25 June 1966 – AWM95 item 3/5/39.

⁹² Ross, et al., *The Search for Tactical Success in Vietnam*, 69.

⁹³ Radio Operator's Log, 105 Field Battery Diary, 9 June 1966 – AWM95 item 3/5/39.

⁹⁴ Author's Interview with John Mottershead dated 7 August 2019; and, Jamieson, 'Call Sign 11 Alpha,' 38-39.

⁹⁵ Michael Evans, 'General Monash's Orchestra: Reaffirming Combined Arms Warfare,' in *From Breitenfeld to Baghdad: Perspectives on Combined Arms Warfare* edited by Michael Evans and Alan Ryan (Duntroon: Land Warfare Studies Centre, 2003), 24.

direct and indirect weapons effects from land and air platforms. 1ATF's artillery was at the crux of this support, with the infantry's mortars providing further land based fires. Additionally, unlike their Second World War predecessors, FOs would be given direct control of helicopter gunships and ground attack aircraft armed with cannons, rockets, and bombs.⁹⁶ 1 Field Regiment had established a process in which requests for fire support would be directed to the Artillery Tactical Headquarters on the regimental communications network. Then, once the air liaison officer had received confirmation of air support, the tactical headquarters would send the aircraft target locations and radio frequencies to facilitate their coordination with the FO.⁹⁷

Gunship support became better integrated with 1 ATF when the Royal Australian Air Force's (RAAF) 9 Squadron modified three of their deployed UH-1H Iroquois to be fitted with a minigun and rocket pods in addition to their pintle mounted side-door machine guns.⁹⁸ First employed during 9RAR's Operation Surfside in April 1969, RAAF gunships established a close fire support relationship with the task force's FOs until their withdrawal in December 1971.⁹⁹ Aircraft were too used for aerial observation. FOs would, at times, be required to fulfil the role of air observation post by working with 161st Reconnaissance Flight's Cessna 180 planes and Sioux light helicopters. Their tasks would include scouting for enemy across Phuoc Tuy province, registering DF targets, and coordinating fire support as an airborne observer.¹⁰⁰

Fire planning was the primary means in which artillerymen coordinated fire support. This was achieved through deliberate time based firing schedules or quickly planned and executed intimate fires. The intent of fire plans was to enable friendly troop manoeuvre whilst disabling that of the enemy. Artillerymen were directed to ensure they best supported their infantry commander by attending orders and identifying the most effective means of fire support for that mission. Once a plan was established it was to be communicated to the

Artillery Tactical Headquarters. By these means the field regiment commander could collate all fire support plans before distributing available resources or requesting further support, such as that of the US artillery or aircraft.¹⁰¹ AATTV members had identified, however, that time-based artillery fire had rarely been employed in Vietnam prior to 1964. Rather than intimately coordinate fires in support of an attacking force, time based engagements were typically employed in harassment and interdiction (H&I) missions.¹⁰² H&I fires were unobserved and aimed at likely enemy locations deep in the area of operations, designed to hinder the enemy's movement and sense of security.¹⁰³ Quick fire plans were the most common means of integrating artillery in combined arms operations. These required FOs to understand their supported commander's intent for battle and ensure fires were applied as accurately and timely as possible to best enable their manoeuvre.

The intent of fire plans was to enable friendly troop manoeuvre whilst disabling that of the enemy.

In the defence combined arms were capable of destroying an attacking enemy who exposed themselves whilst manoeuvring. The Battles of Coral and Balmoral in May 1968 saw the integration of direct and indirect weapons, including that of the infantry and armour, to defeat a numerically superior attacking force. Tanks had recently been introduced to the task force and, in action on 28 May, demonstrated their effectiveness when teamed with infantry against a dug-in enemy.¹⁰⁴ This overwhelming defeat was a part of North Vietnam's wider Tet Offensive, marking a significant reduction in enemy troop numbers across Phuoc Tuy province.

1971 saw an increase in contacts with VC and NVA forces as they returned to the Australian area of operations, occupying defensive positions from which they could safely plan their ongoing campaign against South Vietnam. From 6-7 June 1971 Australian forces encountered such a defensive position near Long Kahn during the aptly named Operation Overlord. 3RAR's B Company, who had contacted an

⁹⁶ All air support was initially provided by the US; Breen, *First to Fight*, 108.

⁹⁷ Fire Support of the Task Force, 1 Field Regiment Notebook, 18 January 1967 – AWM 95 item 3/6/7.

⁹⁸ A. Argent, 'Gunship Application – Continued,' *Army Journal*, No. 256, September 1970, 36-37.

⁹⁹ Ekins, *Fighting to the Finish*, 113.

¹⁰⁰ Gower, *Rounds Complete*, 47-49.

¹⁰¹ Fire Support of the Task Force, 1 Field Regiment Notebook, 18 January 1967 – AWM 95 item 3/6/7.

¹⁰² Clark, 'Artillery in Vietnam,' 28.

¹⁰³ Horner, *The Gunners*, 475.

¹⁰⁴ McNeil and Ekins, *On the Offensive*, 392-393.

enemy bunker system shortly before last light, decided to avoid decisive engagement by night to allow their FO to bring the full weight of 1 ATF's available firepower to bear.¹⁰⁵ The following morning a single platoon preceded to assault what they assessed would now be an empty bunker system. Its VC and NVA occupants, however, had remained in position to fight a rear-guard action and the resulting battle required artillery in support of both infantry and tanks. The FO, Second Lieutenant Ian Mathers, was killed shortly after arriving at the bunker system, after which his FO Ack Lance Bombardier Peter Maher controlled danger close artillery fire from both Australian and US guns.¹⁰⁶ Captain Ian Yerbury, the FO with D Company, then accompanied a reinforcing combined APC mounted infantry and tank team as it fought through the northern sector of the defended position.¹⁰⁷ The Battle of Long Kahn proved the unanticipated utility of armour in dense vegetation, with the direct fire capability of tanks mitigating the inherent weaknesses of employing field artillery against fortified emplacements.

Lieutenant Gilbert, who could not illuminate his map without receiving accurate small arms fire, ...

Robert Hall and Andrew Ross' database on 1 ATF attacks against prepared defences identifies that without artillery support infantry would sustain higher casualties when assaulting heavily defended bunker systems. Even with fire support attacks would still incur heavy casualties. This was due to the actual effect of indirect fires against prepared defences. Although the enemy would remain suppressed while rounds fell amongst them it would take a direct hit to destroy the bunker and its occupants, a difficult feat for an FO with good observation of their target let alone with restricted visibility amongst densely vegetated terrain. This difficulty was also experienced by aircrew attempting to destroy bunker positions with rockets or bombs¹⁰⁸

¹⁰⁵ Op OVERLORD Summary, 12 Field Regiment Notebook, July 1971 – AWM95 item 3/8/46.

¹⁰⁶ Ekins, *Fighting to the Finish*, 564-569.

¹⁰⁷ Op OVERLORD Summary, 12 Field Regiment Notebook, July 1971 – AWM95 item 3/8/46.

¹⁰⁸ Robert Hall and Andrew Ross, 'Lessons from Vietnam: Combined Arms Assault against Prepared Defences,' in *From Breitenfeld to Baghdad: Perspectives on Combined Arms Warfare* edited by

Later in 1971, less than a week after the withdrawal of 1 ATF's tanks, 4RAR/NZ encountered a heavily defended bunker system during Operation Ivanhoe.¹⁰⁹ Australian efforts to locate the recently arrived 33 NVA Regiment resulted in the Battle of Nui Le on 21 September. The battalion's D Company endured the brunt of the fighting, receiving support from the gun batteries as well as multiple gunships and attack aircraft.¹¹⁰ 12 Field Regiment's commander's diary notes that, after almost three hours in contact, "4RAR want wall to wall napalm on contact grid,"¹¹¹ demonstrating the infantry's expectation of liberally applied fire support in battle. The coordination of D Company's fire support was the responsibility of FO Lieutenant Greg Gilbert. After bombarding the position and aircraft identifying the enemy withdrawing, D Company attacked without armour support into what was assumed would now be a lightly defended bunker system. The enemy's rear guard immediately inflicted heavy casualties on the company, forcing their withdrawal.

As night fell the company found itself surrounded by an unseen enemy force who were able to effectively suppress the location of any Australian commands or major weapon systems. Lieutenant Gilbert, who could not illuminate his map without receiving accurate small arms fire, applied his knowledge of navigation, fire procedures, and technical and tactical gunnery to devise a safe target grid from which to initiate a fire mission in defence of D Company's hazardous position. Lieutenant Gilbert engaged artillery within 100 metres of the company whilst moving it around their position using cardinal directions and bold corrections, relying on the sound and shrapnel of incoming rounds to determine their effectiveness against the enemy.¹¹² Five Australians were killed in the fighting, 1 ATF's last combat casualties before their final withdrawal in December 1971.

Michael Evans and Alan Ryan (Duntroon: Land Warfare Studies Centre, 2003), 36-40.

¹⁰⁹ 4th Battalion, Royal Australian Regiment/New Zealand: New Zealand attached 1-2 infantry companies to Australian battalions from 1968-1971.

¹¹⁰ Operations Log, 4RAR/NZ, 21 September 1971 – AWM95 item 7/4/50; and, Ekins, *Fighting to the Finish*, 614-615.

¹¹¹ Commander's Diary, 12 Field Regiment Notebook, 21 September 1971 – AWM95 item 3/8/7.

¹¹² Author's Interview with Greg Gilbert dated 14 August 2019; and, Ekins, *Fighting to the Finish*, 617.

Robert Hall and Andrew Ross were also able to quantify the success of combined arms attacks against defensive positions. They identified that without any support infantry attacks had only a 64% success rate. Even with fire support this number rose by a negligible 1%; the efforts of FOs against established defences could only do so much to aid their clearance. When combined arms were employed, including that of the infantry, armour, and fire support assets, this success rate reached 95%, demonstrating the requirement for FOs to effectively integrate into combined teams.¹¹³

The culmination of a FOs technical and tactical prowess was their ability to overcome the challenges of South Vietnam's operating environment. By adapting to the terrain, their supported units, and their enemy, FOs developed beyond the role for which they had been trained. 1968-1971 saw the adaptation of FOs to the full spectrum of combat, building on lessons learnt from battle across Phuoc Tuy province and beyond.

After Vietnam

Doctrine

Doctrine sets the criterion from which a military organisation bases its actions. At the lowest level it provides a tactical guide through suggested methods to achieve particular tasks. A FOs doctrine is found both in artillery and infantry publications; their actions being the responsibility of their parent unit and that which they support. The Australian Army's tactical doctrine developed during the Vietnam War from the 1965 publication of *The Division in Battle* series to its update in 1969. Throughout this period doctrine did not amend to directly reflect the nature of conflict in Vietnam given that the widely varying nature of operations provided some inherently contradictory experiences.¹¹⁴ Rather, it applied what lessons could be made relevant to the army's wider war fighting requirements.

Despite the well documented practice of sound adjustment by observers *The Division in Battle* pamphlet on artillery neglects this method in a discussion of the application of fire. Although the methods of reporting a target's location are outlined the potential requirement to do so

¹¹³ Hall and Ross, 'Lessons from Vietnam,' 42.

¹¹⁴ Richard Bushby, *Educating an Army: Australian Army Doctrinal Development and the Operational Experience in South Vietnam, 1965-72* (Canberra: Australian National University, 1998), 3.

without visual acquisition is unspecified despite being the most common means of deducing an enemy location in South Vietnam.¹¹⁵ The artillery doctrine remains vague, providing the general guidelines from which an artillery regiment can support a larger formation. The infantry's doctrine, concerned more with the conduct of a battalion in battle, concisely summarises the role of a FO. The establishment of static observation posts in support of an infantry company is suggested as the most likely integration of an artillery observer. Then, when in the assault, the FO should be integrated into the unit so as to best provide intimate fire support.¹¹⁶ This sets the conditions at which FOs trained to prior to deploying to Vietnam rather than encouraging their constant physical presence alongside their supported infantry commander. Where artillery and infantry doctrine did integrate, however, was the adoption of common fire control procedures between FOs and MFCs. From 1970 MFCs, although members of an infantry battalion's mortar platoon, joined the artillery communications network so as to provide them similar access to available fire support assets.¹¹⁷

The artillery doctrine remains vague, providing the general guidelines from which an artillery regiment can support a larger formation.

A strategic shift to the defence of continental Australia led to wider army reforms and a tactical focus on open warfare. Whereas the post-Second World War era had been defined by 'forward defence' the 1976 White Paper *Australian Defence* dictated a new policy of self-reliance within an alliance framework.¹¹⁸ The Australian Army's response was the development of a new doctrine series known as the *Manual of Land Warfare*, of which 'The Fundamentals of Land Force Operations' established the foundation for all other pamphlets, including the artillery. Published in 1977, the *Manual of Land Warfare* was heavily influenced by the lethality of modern weapons in

¹¹⁵ Australian Military Forces, *The Division in Battle, Pamphlet No. 5: Artillery* (Canberra: Army Headquarters, 1969), 8-1.

¹¹⁶ Australian Military Forces, *The Division in Battle, Pamphlet No. 8: Infantry* (Canberra: Army Headquarters, 1969), 57-58.

¹¹⁷ Bushby, *Educating and Army*, 85.

¹¹⁸ Commonwealth of Australia, *Australian Defence* (Canberra: Australian Government Publishing Service, 1976) 10-12.

the 1973 Yom Kippur War as much as Australia's involvement in Vietnam. Regardless, the manual determined past experiences inadequate at setting a precedent for training for future conflict.¹¹⁹

Artillery doctrine was heavily influenced by the requirement for fire support integration into task force and divisional operations. The Australian Army restructured to a geographically dispersed but centrally commanded organisation capable of fielding a task force on independent limited operations, multiple task forces spread across a wide frontage, or concentrated as a division within a corps level structure.¹²⁰ Although FOs had gained invaluable experience intimately embedded into infantry battalions whilst conducting limited though diverse operations, doctrine now dictated a requirement for them to return to the practice of open warfare. The intention of this was to rapidly form combined arms teams, swiftly execute offensive or defensive operations, and return to dispersed positions before modern weapons could be brought to bear against concentrated armoured forces.¹²¹

Training

After six years of continual service in Vietnam the RAA required retraining in its new role as a contributor to national defence. In the opinion of Brigadier P.J. Norton, Commander Field Force Artillery in 1976, artillerymen were limited in their exposure to divisional level warfighting, relying on their experiences as an intimately integrated fire unit within a task force.¹²² He argued that Australians had not witnessed the execution of divisional artillery since the Korean War, a bias inherent to Brigadier Norton's service in that conflict.¹²³ As the Australian Army adopted new Land Warfare doctrine Brigadier Norton intended to train the RAA to prepare for combat operations larger in scale than what had been witnessed since the close of

¹¹⁹ Australian Army, 'Vol. 1, No. 1: The Fundamentals of Land Force Operations,' in *Manual of Land Warfare, Part One: The Conduct of Operations* (Canberra: Army Office, 1977) para. 501.

¹²⁰ Michael Evans, *Forward from the Past: The Development of Australian Army Doctrine, 1972-Present* (Canberra: Land Warfare Studies Centre, 1999), 15-16.

¹²¹ *Ibid*, 22.

¹²² P.J. Norton, 'Command and Control of Artillery,' *Army Journal*, No. 327, August 1976, 34-35.

¹²³ P.J. Norton, 'Let's Start Using Our Guns Again,' *Army Journal*, No. 326, July 1976, 19.

World War Two. To achieve this, he insisted artillery unit headquarters' needed to establish more robust command systems.¹²⁴ The new doctrinal focus on large scale operations resulted in a focus on training artillery headquarters staff to the detriment of FOs tactical proficiency.

The precursor to Brigadier Norton's intent was the Australian Defence Force's Kangaroo series of military exercises held between 1974-1979. These large scale exercises aimed to replicate the type of conventional combat expected against an enemy capable of invading Australia and included participant forces from the United States, New Zealand, and the United Kingdom.¹²⁵ Given FOs were not the focus of such activities it was rare for combined arms training to feature live fire components which accurately represented previously experienced battlefield conditions. John Mottershead, who had served as a FO Ack and Battery Commander's Assistant in South Vietnam, went on to become the Regimental Sergeant Major of 8/12 Medium Regiment in 1984. He assesses that, once operations had concluded in Vietnam, regimental training focus was on open warfare. Tactical employment of artillery by FOs, such as danger close procedures or live fire integration with infantry units, was secondary to technical fire missions from static observation posts.¹²⁶

Artillery doctrine was heavily influenced by the requirement for fire support integration into task force and divisional operations.

FOs who served with 1 ATF universally agree. Robert McEvoy recalls the distrust of artillery techniques applied in Vietnam while on his Battery Commander's course. Despite the practicality of lessons learnt in battle these modified procedures, such as the adjustment of rounds in densely vegetated terrain, were not trusted or trained in peacetime.¹²⁷ Despite being a point of frustration for combat experienced RAA officers it is understandable that, as a means of standardising fire support procedures within a divisional construct, training had to meet doctrinal standards. FOs continued to develop technical prowess which, if required,

¹²⁴ *Ibid*, 17.

¹²⁵ Horner, *The Gunners*, 503.

¹²⁶ Author's Interview with John Mottershead dated 7 August 2019.

¹²⁷ Author's Interview with Robert McEvoy dated 14 August 2019.

they could once again adapt to the tactical situation thrust upon them.

Conclusion

The intimate nature of Australian FOs integration with infantry units began in the jungles of the Second World War's Pacific theatre. Forged in combat, this relationship continued to be built on during the Korean War. Although not required to coordinate the level of fire support witnessed in those conflicts, FOs who served in Malaya and Borneo solidified the infantry-artillery relationship by providing close support to jungle patrols. Regardless of the difficulties dense vegetation placed on the employment of artillery FOs adjusted their trained techniques to best suit the tactical situation.

This spectrum of military operations tested the tactical acumen of FOs.

The subsequent deployment of an artillery battery to South Vietnam further tested the technical competence of Australian gunners. Beginning with support to an American brigade, artillerymen came to be relied on by the infantry to coordinate the rapid provision of fire support. As 1 ATF began sustained operations in Phuoc Tuy province FOs were required to provide support in pacification of the population and close combat with the enemy. This spectrum of military operations tested the tactical acumen of FOs. Needing to overcome the limitations of restrictive terrain and mitigate the strengths of an elusive enemy, FOs applied their technical knowledge of gunnery to suit the tactical situations they faced. This was often executed at close range with a high risk of fratricide; the ultimate test of an artilleryman's capability. FOs were best employed at the tactical level, amongst the infantry companies and armoured squadrons, to coordinate the artillery component of combined arms teams.

Following the Vietnam War the RAA's doctrine and training was reflective of Australia's primary strategic concern for national defence. Although artillerymen continued to exercise in a combined arms environment the emphasis was not on the intimate and often vital integration of FOs at the tactical level as had been operationally applied in Vietnam. Much like the lack of tactical preparation prior to deployment, afterwards officers were implored to neglect those modified techniques employed in theatre. Instead, focus would be on the procedural methods of fire for division level support.

Similar themes emerge from the recollections of RAA veterans. Despite the experiences of the Second World War and Southeast Asian conflicts, FOs were not afforded the opportunity to practice the live fire application of artillery in support of infantry at close range. Technical gunnery and tactical actions were trained in isolation, yet from the initial deployment of 105 Field Battery it was known that typical contacts with the enemy would occur within 50 metres. Technical knowledge and the dissemination of modified procedures enabled FOs to overcome the problems posed by Vietnam's operational environment. Battles such as Long Tan, Suoi Chau Pha, and Nui Le demonstrate the vital contribution of FOs who, under arduous conditions, applied non-standard techniques to great effect.

Much like the lack of these procedures in recorded doctrine the historiography of Australian FOs during the Vietnam War is partly absent. Featuring throughout Australia's history of Southeast Asian conflicts and somewhat detailed in historical literature, it is evident through analysis that the role and employment of FOs developed during the Vietnam War. Despite a subsequent refocus to divisional level operations the intimate nature of artillery's support to other combat arms resonated with the attachment of FOs at the tactical level, where the provision of fire support was integrated in combined arms battle.

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*Keith Glyde, Tasmanian Representative
RAA Regimental History Committee*

Between the mid-nineteenth and mid-twentieth centuries, senior non-commissioned officers (NCO) of the Royal Australian Artillery (RAA), and its Colonial predecessors, of the rank of sergeant and above; warrant officers (WO) of the RAA and the Australian Instructional Corps (AIC) holding the appointment of Master Gunner; and WO of the AIC allotted for duty with artillery units, were distinguished by a badge depicting a 19th Century field gun worn in conjunction with their badges of rank. Sadly this unique distinction lapsed officially in 1952 and was abolished completely by 1965.

It is the intent of this article to provide a history of the badge during the period it was worn in Australia, both officially and unofficially, as an addition to the insignia of rank.

Early History

Arm devices specific to an individual regiment date back to at least as early as 1797 amongst Cavalry regiments of the British Army. These were, and still are, usually only worn by WO and NCO, generally in conjunction with the badge of rank.ⁱ The badge itself has no significance regarding the wearer's trade or proficiency. The use of similar devices by The Royal Regiment of Artillery (RA) began in the early part of the nineteenth century; by 1825 sergeants of the Royal Horse Artillery (RHA) are recorded as wearing the shield of the Arms of the Board of the Ordnance above their chevrons and had added a mural crown above the shield by 1832.ⁱⁱ In 1836 it is stated that the sergeants of the RHA were now wearing a St Edwards crown above their chevrons.ⁱⁱⁱ

In 1832 His Majesty King William IV granted the RA permission to wear on their appointments the Royal Arms and Supporters, together with a Cannon and the Mottos *Ubique* and *Quo fas et gloria ducunt*.^{iv} As early as 1856 staff sergeants and sergeants of the RHA and the RA were wearing a field gun, or cannon, and a St Edward's crown, above their chevrons on both sleeves of the tunic.^v Although thus far no primary source evidence in confirmation has been located, the gun badge worn with the rank badge from this time by RA senior NCO is probably representative of the Cannon awarded to the RA in 1832 as part of its honorary distinction. Perry recorded in 1888 that the Cannon was the distinctive badge of the RA, and was worn on the sleeves by its warrant officers, staff sergeants and sergeants, suggesting a contemporary view that such may have been the case.^{vi}

The Australian Colonial Artillery

References to this badge in early Australian colonial instructions regarding dress are unfortunately rare. This is primarily because Dress Regulations were generally only published for the guidance of officers, who were responsible for the provision of their uniform and accoutrements at their own expense. Published references to details of rank insignia for other ranks are restricted to occasional advice that distinctions in uniform and appointments to distinguish the rank of the wearer were to be in accordance with Imperial practice and regulations.^{vii} It is not until the last two decades of the nineteenth century that specific references appear to the gun as part of the rank distinction.^{viii}

Photographic evidence has established, however, that the badge of a field gun surmounted by a St Edward's crown was worn in Australia from at least as early as 1863, and almost certainly earlier, by all artillery NCO above the rank of corporal. The badge was worn on both arms above the chevrons and above any badge of appointment or trade. It was of silver or gold wire embroidery on a scarlet or blue woollen serge backing; generally silver on scarlet for volunteer or partially-paid artillery corps, and

gold on blue for permanent and militia artillery, although exceptions existed. The badges were manufactured in pairs, with the muzzle of the gun worn facing towards the front of the wearer.



Figure 1. Sergeant, East Melbourne Battery, Royal Victoria Volunteer Artillery Regiment, circa 1882. (Image courtesy Mr Jeff Cossum)



Figure 2. Gold wire embroidered St Edwards crown and gun badge for the right arm, circa 1856-1884. Nothing of the blue woollen facing cloth has exposed the coarse cloth backing to the badge that allowed a firm seating for the embroidery. (Author's collection)

During the 1880s, in accordance with changes in both rank structure and insignia of rank that occurred in the Imperial army in 1881, the wearing of badges of rank by WO and NCO of the Australian colonial forces was restricted to the right arm in all forms of dress. The crown

was removed from the gun badge worn by sergeants, the gun itself now being worn directly above the chevrons and below any badge of appointment or trade. The crown continued to be worn as part of the rank badge of brigade and battery staff sergeants, with the gun between the crown and the chevrons. Where appointment badges were worn in the latter cases they were placed above the gun, but below the crown. Between 1881 and until the end of 1917, the gun itself became the sole badge of rank of the Master Gunner 3rd Class, a senior NCO, who ranked with but senior to, staff sergeants-major.

It is common to see the gun worn on the right arm of the tunic with its muzzle pointing to the rear around the end of the 19th Century and the beginning of the 20th Century, particularly in Tasmania. This was simply a result of government parsimony forcing existing stocks of obsolete badges to be used up.^{ix} In the Queensland Defence Force NCO badges of rank, including the gun badge, reverted to being worn on both arms in 1898.



Figure 3. The battery sergeant-major and sergeants of the Southern Tasmanian Artillery in Franklin Square, Hobart, in 1899. Note the gun badge being worn with the muzzle facing to the rear. (Author's collection)

It has not been ascertained whether the gun badge was being supplied locally prior to Federation or was obtained from the United Kingdom. Certainly the Western Australian government was placing orders for the item on Imperial government stores in 1893 but the capacity for manufacture in Australia was clearly already established as Messrs B Mountcastle and Sons of George Street, Sydney,

was supplying embroidered field-pieces for volunteer artillery head-dress as early as 1860.^x



Figure 4. Left and right arm examples of the gold wire embroidered badge. This pattern remained virtually unchanged from its introduction in the 19th Century until it was listed in 1940 as no longer being of current manufacture. (Author's collection)

The Artillery of the Commonwealth of Australia

The six Australian colonies were federated in 1901 as the Commonwealth of Australia. No reference is made to the gun badge for Artillery senior NCO in instructions of May 1903 relating to the introduction of service dress to the military forces, or in descriptions of articles of dress and equipment for the RAA in December 1903.^{xi} This badge was, however, still worn and being supplied under Commonwealth contracts in both gold embroidery and worsted from 1902 by Australian manufacturers including Max Borchardt of Melbourne, Lincoln, Stuart, and Co Pty Ltd of Melbourne, the Misses Montgomery, also of Melbourne, Julia Annie Baker of Brisbane, and outfitters such as Charles Anderson of Sydney.

Badges of rank were to be worn from 1903 on both arms in service dress by the Militia and Volunteers, and on the khaki cloth jacket, and khaki drill jacket of the RAA. Rank badges continued to be worn on the right arm only of the blue tunic. New instructions for dress issued in 1906 restricted badges of rank to the right arm in all forms of dress, a practice that continued until just after the Second World War. *Orders for Dress and Clothing 1906*, Appendix IX, orders that all NCO of the Artillery above the rank of Corporal were to wear a gun on the tunic, frock, and jacket, but not on the great coat. Only Master Gunners were permitted to wear the gun on their great coat because this formed a distinct part of their badge of rank.

It has been noted that the gun badge was not always worn by some senior NCO of the militia artillery prior to the commencement of the Great War although the reason for this has not yet been established; it was certainly authorised by dress

and clothing instructions for this period. The Australian Garrison Artillery (AGA) in Tasmania for instance wore it on neither the khaki or blue jacket until at least 1910. During the early Universal Training period commencing from 1912 its absence on the Shirt, Military, Woollen, is particularly noticeable amongst field and garrison artillery NCO across a number of states. This might be linked to a shortage of items although suppliers for the Gun, Field, worsted or gold embroidered, appear in all Contracts Accepted notices published, usually annually, in the *Commonwealth of Australia Gazette* prior to the Great War.

Gun badges in yellow worsted embroidered on khaki were introduced in 1904 for greatcoats and, fitted with hooks and eyes, the khaki jackets worn by the RAA. These badges appear to have been manufactured in white worsted from around 1912 although this change is not reflected in contract acceptances or *Price List of Clothing*. New suppliers of worsted gun badges included A Bowley and Co of Melbourne, and Hicks Atkinson and Sons, also of Melbourne.



Figure 5. Senior non-commissioned officers of the 10th Australian Garrison Artillery, Port Adelaide, after mobilization in 1914. The gun badges worn by the Company Quartermaster Sergeant on left, and the Company Sergeant-Major in the centre, are worsted. The sergeants are not wearing the gun badge. (Author's collection)



Figure 6. A worsted gun badge manufactured by Hicks Atkinson and Sons Pty. (Author's collection)

There is no doubt that cost became an important factor in the supply of insignia. The expansion of the Citizen Military Forces under the impetus of the Universal Training scheme in 1912 and the increased requirement for badges of all descriptions probably led to a decision on economic grounds to adopt metal badges. These were at the time cheaper to manufacture, and by virtue of being a harder wearing material could be recovered and re-issued as necessary, thus providing further economies in expenditure. The Estimates 1913-14 provided for the supply of rank and proficiency badges in metal, and tenders were invited for the manufacture of such items in November and December of 1913. *Commonwealth of Australia Gazette* (CAG) Issue No 15 of 21 March 1914 notified the acceptance of contracts for the manufacture and supply of metal badges, including the gun.



Figure 7. Examples of metal versions of this badge. The gilding metal gun is manufactured by Stokes and Sons; the centre gun with unvoided wheel is stamped from a light metal alloy using the Stokes and Sons die and painted black, and the oxidised copper badge on the right is by an unknown manufacturer from the Second World War period. (Author's collection).

Stokes and Sons Pty Ltd of Melbourne manufactured the brass gun badges. These were die-stamped and supplied complete with a metal

backing plate and pins, the badge being secured to the uniform by two short lugs with eyes passing through slits cut in the cloth and thence through slots in the backing plate where they were secured by wire pins. The badges were of a slightly different pattern to those in use by the Royal Artillery in that they do not have a step in the carriage for the elevating screw. There are other subtle differences, and they were only manufactured in a right arm design. In late 1914 Stokes and Sons began manufacturing oxidised copper badges for the Australian Imperial Force (AIF) and it was a common, although unofficial, practice for this badge to be worn on the Cap, Service Dress (SD), by members of the AIF.^{xii} It is of interest to note that the dies for these badges became the property of the Defence Department on the completion of the initial contract.^{xiii}



Figure 8. A sergeant of AIF field artillery reinforcements, Maribyrnong, Victoria, wearing the gun on a greatcoat in July 1916. This practice was not authorised until 1925. (Author's collection)

Worsted badges had ceased to be an Ordnance issue item by mid-1915, although they were still in use during and immediately after the Great War. Military Order (MO) No 557 of 8 December 1917, promulgating changes to existing badges of rank, confirmed that all non-commissioned officers of the Australian artillery

above the rank of corporal were to wear a gun on the jacket above their chevrons. This badge was to be copper oxidised although MO 98/1918 of 9 March 1918 amended MO 557/1917 to the extent that all such badges for the Militia were to be in brass. British pattern badges in both worsted and metal were of course worn overseas by AIF personnel although it is not clear if these were supplied through the normal clothing maintenance process or purchased privately.



Figure 9. A sergeant of the 1st Australian Division artillery in Egypt, 1916. The arm badge is brass and is therefore probably of British origin, or local manufacture. He wears the badge in addition as a cap badge, an unauthorised practice that was endemic throughout the artillery of the AIF. The badge worn on the cap is of left arm design, identifying it as of British or local manufacture. (Author's collection)

The oxidised copper badge was listed as not of current manufacture in *Priced Vocabulary of Clothing and Necessaries* (PVCN) 1920-21, was reintroduced by PVCN 1922-23 and became obsolescent again in PVCN 1931, only to reappear in PVCN 1940 at which stage the brass version became obsolescent. Deoxidised copper badges exist from the period immediately after 1930 as existing stocks of badges were utilised. The gold embroidered badges cannot be confirmed as having been worn after the abolition of full dress during the Great War although they continued to be listed in PVCN until 1940, which latter edition showed them as

not of current manufacture, the existing stock of which would not be replaced.^{xiv}

The warrant officers of the RAA were transferred to the AIC in 1921 leaving staff sergeants as the highest ranked soldiers in the Regiment.^{xv} *Standing Orders for Clothing 1922, Part III, Dress*, and subsequent editions, permitted WO of the AIC posted for duty with units of the RAA and the Artillery of the Citizen Military Forces to wear a gun badge on the jacket below their badge of rank. Provisional staff sergeants-major of the AIC wore four chevrons surmounted by a crown on the sleeve above the elbow, the gun badge being worn between the crown and the chevrons.

In 1924 the rank of corporal was abolished in the RAA and the appointment of lance-sergeant created in lieu.^{xvi} A similar change took place the following year in the Artillery of the Citizen Military Forces.^{xvii} The gun badge was then restricted to artillery senior NCO above the rank of lance-sergeant, and WO of the AIC posted for duty to artillery units.^{xviii} The permanent soldiers wore gilding metal guns; militia soldiers wore oxidised copper badges until 1931 when they too were authorised to wear brass badges.^{xix} Despite there being photographic evidence of the gun being worn above chevrons on the great coat during the Great War, it is not until 1925 that this practice was officially authorised.^{xx}

Reference to the gun badge is absent from any instruction issued after the commencement of the Second World War relating to the wearing of badges of rank by warrant and non-commissioned officers nor is it shown as an authorised item of issue in *Standing Orders for Australian Imperial Force* or *War Scales of Clothing and Necessaries for all ranks on Full Time Duty – AMF*.^{xxi} In fact it is unlikely that the badge was officially manufactured from 1942 due to demands for economy in the use of metals, although McKimmins (Pty) Ltd of Flinders St Townsville were offering metal field gun badges as late as July 1944.

In 1924 the rank of corporal was abolished in the RAA and the appointment of lance-sergeant created in lieu.

Despite the apparent lack of official instructions, the gun badge certainly went abroad with sergeants and staff sergeants of the Second AIF in 1940. Battery and troop sergeants-major of the 2/3rd Australian Field Regiment even went to the extent of wearing a gilding metal gun

below their badge of rank although this practice almost certainly ceased on their arrival in the United Kingdom in June 1940.^{xxii} NCO of AIF and Citizen Military Forces (CMF) units in Australia continued to wear the badge into the post-World War Two period although specific instructions were issued in early 1944 that prohibited the wearing of gun badges by personnel other than master gunners.^{xxiii}



Figure 10. A sergeant of an AIF artillery unit of 1st Australian Corps wearing a brass gun badge circa 1940. (Courtesy Mr Jeff Cossum)

Black painted guns made of an alloy, without voiding between the spokes of the wheel, have been noted from at least two manufacturers. These were probably manufactured in Australia during the Second World War for private purchase by the troops. Any gun badges supplied or privately purchased for Australian troops in the United Kingdom, Middle East or Malaya are likely to have been locally manufactured in die-struck or cast brass and to have conformed to the pattern in use by the British army. It is possible that embroidered badges were also being offered for private sale to the troops in Australia during the war.

The End of an Era

The earliest post-Second World War instructions relating to the dress of the Australian Military Forces directed that badges of rank were now to be embroidered and that the provisions of *Standing Orders for Dress 1935* would continue to apply pending the introduction of new standing orders for dress, intimating that the gun badge was still an authorised item of wear.^{xxiv} Perceived authority for wear aside it seems

unlikely that these badges were available for issue for two reasons, the first being that policy regarding badges to be worn on the uniform had not at this early stage been settled by the Military Board; the second was the inability of the manufacturing industry in Australia to provide for Service requirements at that time. In fact in mid-1949 enormous quantities of obsolete metal badges, including gun badges, were handed over from 2nd Central Ordnance Depot to the Australian War Memorial.^{xxv}

The last form in which the badge officially appeared was of the gun embroidered in brown and cream thread on khaki cloth, in handed pairs for wear on the khaki drill uniform on issue in Australia during the early post-Second World War years. Embroidered badges were now cheaper to manufacture than metal items and the replacement of the latter by the former was foreshadowed in 1948. All soldiers holding Warrant or NCO rank were required to wear their rank badges on both arms of the uniform by 31 August 1949. It is assumed therefore that the design shown below came into use at about this time and died a natural death after permission to wear it was withdrawn in 1952.

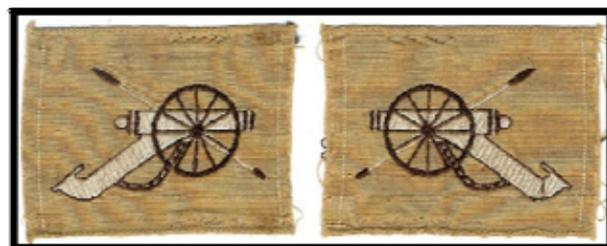


Figure 11. Embroidered gun badges from the early 1950s. (Author's collection)

In mid-1951 the Director of Military Training at Army Headquarters recommended that reference to the gun badge, and similar items worn by WO and NCO of other Corps, be deleted during the review and amendment of the 1935 edition of standing orders for dress. His view was that these badges could be regarded as corps insignia and the wearing of embroidered shoulder titles denoting the particular regiment or corps to which a member belonged obviated the need for any additional metal or woven badges to denote his Arm.^{xxvi} Accordingly the gun badge for artillery senior NCO ceased to be provided for on the publication of new standing orders for dress in 1952.^{xxvii}

The metal badges, however, continued in wear from this point on an unofficial but apparently regimentally sanctioned basis by sergeants posted as a gun detachment commander, or

Number One. Badges were supplied at private expense; the writer's father recalled that he and other qualified members of 3rd Field Regiment RAA purchased their badges during the early 1950s from Shimonsens, a military disposals dealer operating from premises in Murray St, Perth WA.^{xxviii} A former gun No 1 of 6th Field Regiment RAA recalled that on promotion to sergeant and posting as a gun detachment commander the individual could apply for permission to wear the gun badge, which was then supplied under regimental arrangements and charged to him. He remarked that there was little choice in the matter, failure to put the badges up led to subtle pressure from higher authority to do so.^{xxix} According to Jobson this practice was abolished in 1964.^{xxx}



Figure 12. A pair of typical British manufactured brass badges as worn on battledress above the chevrons by Numbers One of 6th Field Regiment RAA during the 1960s.

Badges of rank for WO and NCO were worn on both arms from 1948 and there is both anecdotal and photographic evidence to show that the privately purchased oxidised gun was worn on both arms of the service dress jacket although on the left arm the muzzle was pointing to the rear.^{xxxi} By the 1960s, in 6th Field Regiment at least, brass gun badges of British pattern were supplied in matched pairs for wear on both arms of battledress jackets. It has not been possible to determine if these sets were supplied through an Australian military outfitter or were purchased under Regimental arrangements directly from the United Kingdom.

To what extent the practice of wearing a gun badge above their chevrons by sergeant Numbers One after 1952 extended throughout the Regiment is not yet known; it may have been restricted to field branch. In 1956 HQ Western Command, in a submission recommending the re-introduction of artillery specific skill-at-arms badges, further recommended that all RAA warrant officers and non-commissioned officers of the rank of sergeant and above be permitted to wear a gun badge on shirt, jacket and greatcoat.^{xxxii} This submission was concurred in by the Director Royal Artillery however the attitude of the Military Board had by now



Figure 13. Q Battery, 6 Field Regiment RAA, firing a Queen's Birthday salute on The Domain, Hobart, in 1965. Note that the gun badge is being worn by the detachment commander, but not by the staff sergeant acting as the No 4. (Image courtesy of Malcolm McKee)

hardened against the display of any superfluous insignia on the uniform and no further progress was made with this recommendation.

Whether the gun badge worn with their rank badges by Warrant Officers and Senior Non-commissioned Officers of the Royal Australian Artillery and its predecessors since the mid to late 19th Century was ever recognized as representative of the Cannon of the Honorary Distinction granted to the Royal Artillery in 1832 by King William IV is not known. Certainly, such a view has never formed part of our recorded or anecdotal memories. It is more likely that the badge was adopted simply in imitation of its wear by the RA, and any significance that may have been associated with it has been lost over time.

The gun badge, in both embroidery and metal, remains very much a feature of the badge of rank of Master Gunners and Senior NCO of the Regiments of Artillery of many of the nations of the British Commonwealth. The justification in Australia in 1952 that it was a corps badge and therefore unnecessary in view of the display of corps or regimental titles on the sleeve in all forms of dress is of course no longer valid; given however the careful sizing and tailoring of current badges of rank to allow of their replacement on promotion without renewing the article of clothing it seems highly unlikely that the re-introduction of this unique badge for sergeants and staff sergeants of the RAA will ever be considered.

ⁱ The system of chevrons to denote rank commenced in the British Army in 1802. See Cannonball No 53 of November 2003, pp. 12-16, for Kevin Browning's treatment of this complex subject as it was applied to the RAA and its predecessors from 1854.

ⁱⁱ MAJ D A Campbell, *The Dress of the Royal Artillery*, Arms and Armour Press in conjunction with The Royal Artillery Institution, London, 1971, p. 116. A mural crown is representative of city walls or towers.

ⁱⁱⁱ *Ibid.*

^{iv} Memorandum by the Office of Ordnance dated 9 July 1832, promulgated in *The London Gazette*, Issue 18952 of 10 July 1832, p. 1583.

^v Campbell (1971, p. 116), also *Standing Orders for the Royal Regiment of Artillery 1864*, Section LXX, *Dress Regulations*. Staff sergeant is used in this context to describe all senior non-commissioned officers wearing four chevrons as part of their badge of rank.

^{vi} Perry, Ottley Lane, *Rank and Badges, Dates of Formation, Naval and Military Distinctions, Precedence, Salutes, Colours, and Small Arms, in Her Majesty's Army and Navy and Auxiliary Forces*, William Clowes and Sons, Limited, London, Second Edition, 1888, p. 136. He confirms on p. 27 that his reference to warrant officers is to Master Gunners as no other WO of the RA other than the modern appointment of Royal Artillery Sergeant Major wears, or has ever worn, a gun as part of their rank distinction.

^{vii} For instance *Regulations, South Australian Volunteer Military Force*, of 16 October 1861, and *Rules and Regulations for the Volunteer Force*, Tasmania, 1864. New South Wales *Clothing and Equipment Regulations 1876* is the earliest authority noted by this writer specifically referring to the gun and crown.

^{viii} *General Standing Orders, Queensland Land Forces 1893*, Appendix IV, *Dress Regulations*; New South Wales, Brigade Order No 107 of 12 July 1881; Victorian Military Forces, *Regulations under the Discipline Acts 1885, Dress Regulations*; South Australian Military Forces, *Defences Act 1895, Regulations, &c.; Dress Regulations of the Tasmanian Defence Force*, 1886. No reference has been located to the badge in Western Australian regulations however the gun badge is listed in May 1893 as part of the articles of uniform to be obtained through that Colony's Agent-General in the United Kingdom for the newly established Permanent Artillery.

^{ix} It may surprise readers that photographic evidence shows this practice to be common in the RA in full dress up until the beginning of the Great War. It was simply a matter of economy, requiring existing stocks of left arm badges to be used up. Even after the British Army resumed the wearing of rank on both

arms in 1902, rank badges were still restricted to the right arm in full dress to spare expense.

^x Still operating and believed to be Australia's oldest hatter. In 1912 and 1913 this manufacturer, now located in Brisbane, was supplying the Gun, Field, and Crown in gold embroidery.

^{xi} General Order (GO) No 109 of 16 May 1903, *Commonwealth Uniform*; GO No 287 of 14 December 1903, Part I, *Regulations for Uniform, Arms, Accoutrements, and Equipment – Royal Australian Artillery*.

^{xii} Contracts Accepted approved 21 October 1914 and promulgated in CAG Issue No 180 of 7 December 1916

^{xiii} Contracts Accepted approved 31 December 1913 and notified in CAG Issue No 15 of 21 March 1914. This policy ensured that not only was there no variation in the design of this badge during the period it was officially supplied and issued, but that potential tenderers would be competing on an even footing.

^{xiv} AHQ (DOS) memo 12355 of 24 Nov 33 gave approval for gold on blue proficiency badges to be worn on full dress by the Permanent Military Forces, suggesting that the gold wire gun may also have been worn in this order of dress just prior to the Second World War.

^{xv} For the permanent military forces only. Warrant officers of the AFA and the AGA were not affected by this change.

^{xvi} Military Order 420/1924 of 4 October 1924, effective 1 July 1924.

^{xvii} Australian Army Order 182/1925 of 2 May 1925, effective 25 March 1925.

^{xviii} *Standing Orders for Clothing, Part III, Dress*, 1925, Part V, Para 200, Note (d).

^{xix} The terms brass and gilding metal are used together, or interchangeably, in PVCN and standing orders for dress and clothing during this period. Military Board Circular No 559/1931 directed that future supplies of rank and skill at arms badges were to be manufactured in brass.

^{xx} *Standing Orders for Clothing, Part III, Dress*, 1925, Part V, Para 200, Note (d).

^{xxi} General Routine Order (GRO) A.245/1943, GRO 311/1945, and GRO 223/1947, *Badges, Rank, etc – Other Ranks*, list the gun only for master gunners and state that no badges other than those authorised in *War Scales of Clothing and Necessaries* would be worn. Authorized scales of issue of clothing and necessaries for the AIF are listed in *Standing Orders for Australian Imperial Force*, 1940, para 209, while war scales were published as GRO O.349 of 28 August 1942.

^{xxii} The RSM of 2/3 Aust Fd Regt was still wearing an oxidised copper gun below his badge of rank on shirtsleeves in New Guinea at the cessation of

hostilities. This practice appears to be the result of misinterpretation of SO Dress allowing the badge to be worn below the badge of rank by warrant officers, but applying only to those of the AIC, not CMF or AIF.

^{xxiii} Entry dated 12 April 1944 notifying the forwarding of a memo on the subject to RAA units under its command, HQ Fremantle Fortress war diary for March-April 1944, AWM52, 1/6/3/2; Routine Order Part 1 No 14/44 dated 20 May 1944, para A.154, sub-para 4, stating "...Sergeants Artillery will NOT wear 'guns'...", 140th Australian Heavy Anti-Aircraft Battery (AIF) war diary for January-July 1944, AWM52, 4/16/49/2.

^{xxiv} *Post War Dress for the Army*, Military Board Instruction (MBI) 167/1948 of 03 Sep 48.

^{xxv} Thousands of these surplus badges were sold by the AWM to raise funds during the late 1980s.

^{xxvi} AHQ (DMT) 14007 of 03 Aug 51 to MGO Branch in response to a request from the latter to review and amend details in connection with specialist, trade, and skill-at-arms badges listed in *Standing Orders for Dress 1935*, NAA: MP927/1; A36/1/166, *Badges – Skill at Arms*.

^{xxvii} *Standing Orders for Dress (Provisional)*, MBI 86/1952 of 23 May 1952.

^{xxviii} Recollections by the late Robert Glyde of his personal experience as a sergeant in 3 Fd Regt RAA during the early 1950s, supported by the actual items worn by him.

^{xxix} Recollections by Malcolm McKee of his personal experience as a sergeant in 6 Fd Regt RAA and 112 Fd Bty RAA during the 1950s and 1960s, supported by photographic evidence and the actual items worn by him.

^{xxx} Jobson, Christopher, *Royal Regiment of Australian Artillery: Customs and Traditions*, p. 58.

^{xxxi} MBI 167/1948, para 8(f)(ii). An amendment to MBI 167/1948, published in MBI dated 29 July 1949, added para 26 notifying that badges of rank for WO and NCO would be worn on both arms in all forms of dress as from 31 August 1949. Wear on the left arm was confirmed verbally by Robert Glyde and appears in a photograph of members of a gun detachment of 6 Fd Regt RAA circa 1950.

^{xxxii} HQ W Comd W67/1/11 of 24 Mar 56, para 10, to AHQ, NAA: MP927/1; A36/1/166, *Badges – Skill at Arms*.



Service reflects on the why in Anzac Day

The Canberra Times April 25 2020
Paul Osborne & Colin Brinsden

It took a nurse to remind a virus-ravaged nation of the link between the Anzacs and today.

Sharon Bown's powerful words were delivered at a unique national commemorative service at the Australian War Memorial in Canberra.

Restrictions to hold back the spread of COVID-19 meant no public attendance, and no march.

Ms Bown's great-uncle Private Albert Arthur Reader landed at Gallipoli 105 years ago - his name in bronze on the honour roll she stood next to as she delivered the Call to Remembrance.

"Let us do more than just honour those who have defended Australia," she said. "In this time of crisis, let us realise the innate capacity within each of us to do the same - to unite and to protect the more vulnerable among us.

"To realise that the qualities for which we honour the Anzacs live on in each of us - endurance, courage, ingenuity, good humour, mateship and devotion, to duty to each other, to Australia."

The 16-year veteran is no stranger to tragedy and danger - she barely survived a helicopter crash, commanded a combat surgical team during some of the most intense fighting in Afghanistan, lost her mother to breast cancer and almost lost her policeman father to a homicidal psychopath.

Prime Minister Scott Morrison paid tribute to another nurse, Carolyn Griffiths, who joined the Reserves after the 2002 Bali bombings and served in Afghanistan and Iraq.

Amid the quietness of the war memorial, Mr Morrison reflected on a 1919 gathering in Gallipoli.

"A small group of Anzacs who'd been arranging and tending the graves of their mates gathered and there was no pomp at that little service, there were no dignitaries, no band, just the sound of lapping water on the lonely shore," he said. "One said of that little service, 'It was the real thing'. "And so our remembrances today, small, quiet and homely will be."

Global travel restrictions because of the pandemic have prevented traditional Anzac ceremonies abroad taking place, such as at Gallipoli, Kokoda, and Villers-Bretonneux.

"While this year is different, we can all still mark Anzac Day," Foreign Affairs Minister Marise Payne told AAP.

Australian Associated Press

CLASH *of the* GODS *of* WAR

AUSTRALIAN ARTILLERY
AND THE FIREPOWER LESSONS
OF THE GREAT WAR

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- First major account of the Great War through the lens of the Australian artillery.
- A unique publication showing the dynamic and rapidly evolving battle-scape.
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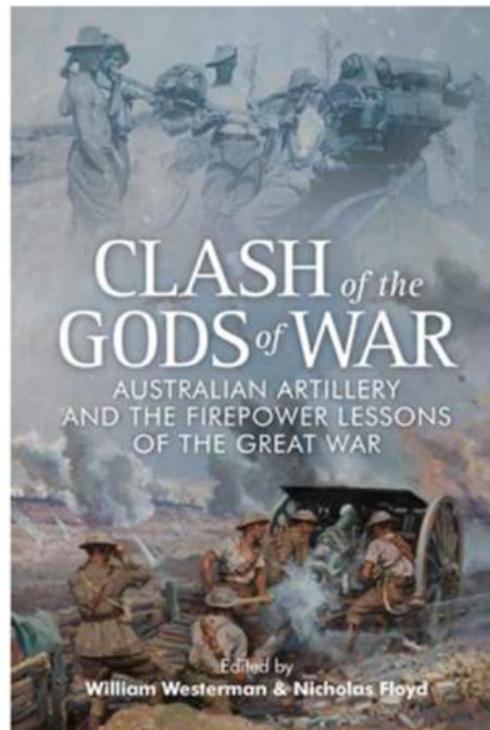
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The Great War confronted Australia's fledgling field and garrison artillery forces with a seemingly insurmountable challenge: to rapidly raise, prepare, deploy and engage in history's most lethal war to date.

By 1915, the Australian artillery entered into a bloody contest of learning and adaptation against resourceful and resolute opponents, where the stakes would be measured in thousands of soldiers' lives.

Far from popularly-held views of the Great War as one of stalemate and stagnation, *Clash of the Gods of War: Australian Artillery and the Firepower Lessons of the Great War* reveals a dynamic and rapidly evolving battle-scape, as artillery planners on each side sought to combine innovative concepts, technology and tactics into victory.

The book draws on an unparalleled array of perspectives on artillery and firepower, presented by Australian and international experts and practitioners over four years during the Firepower: Lessons from the Great War seminar series, commemorating the Centenary of Anzac.



From Anzac Cove to the Hindenburg Line, *Clash of the Gods of War* tells a gripping Australian story of the Great War through the lens of artillery – the most lethal and influential arm of the war – and considers the legacy that its evolutionary journey holds for warfare today.

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Vale

James Harold Townley

Colonel Ian Ahearn (Retd)



Brigadier James Harold Townley, AM, (Retired) passed away in Southport Hospital on 22nd October 2019. Jim was born in Townsville on 2nd March 1939. Jim's parents were Kenneth Russell Townley and Nellie

Sherrington who married in 1932.

Jim rarely spoke about his ancestry although both his father and grandfather served in uniform. His grandfather, Captain William Townley, served as a police magistrate, a superintendent of Queensland prisons and commander of No 2 Battery Queensland Volunteer Artillery in Ipswich. His father, Kenneth Russell Townley, also served in uniform as a legal officer during the World War Two war crimes trials held on Manus Island. Kenneth Townley went on to become a judge in the Supreme Court of Queensland.

Jim decided on a career in the Army and entered the Royal Military College, Duntroon on the 9th February 1957. He graduated into the Royal Australian Artillery on 14th December 1960. As daughter Sally recalls:

"Like a lot of boys who came to Duntroon, he met and married a Canberra girl, in this case, my beautiful Mum, Wendy. Lucky for him he chose the kindest, most caring and compassionate lady in the world."

He joined 4th Field Regiment RAA and served in 103rd Field Battery and accompanied that

Battery to Malaya in 1961. The Battery joined 26th Field Regiment Royal Artillery (RA) as part of the 28th Commonwealth Brigade and whilst in Malaya the Australian officers were rotated through Vietnam a couple at a time for a week or ten days. Jim spent eight days, 14th to 22nd June 1963, in Vietnam.

At the end of 1963 the Townleys moved back to Australia to Holsworthy and Jim joined the 1st Field Regiment RAA. At the beginning of 1965 he moved to 131st Divisional Locating Battery at North Head and then returned to Vietnam in April 1966 as Officer Commanding the Detachment 131st Divisional Locating Battery.

He left Vietnam on 18th August on posting to a Gunnery Staff Course at the Royal School of Artillery, Larkhill followed by an attachment to British Army on the Rhine (BAOR) as a gunnery instructor. On return to Australia in 1968 Jim assumed instructor duties at the School of Artillery, North Head until 1970. He was detached to Headquarters Australian Forces Vietnam from 30th April to 28th May 1970. In June that year Canberra called and he was posted to Army Headquarters as a Staff Officer Grade 2, Directorate of Artillery.

I first met James Harold Townley in Townsville in 1971 when he was appointed Battery Commander (BC) of the 106th Field Battery RAA. It was a meeting that was to be the beginning of a lifetime friendship. Jim arrived in the 4th Field Regiment before Wendy. I was his Battery Captain and had spent a week with him and I was keen to meet his better half.

On the night of Wendy's arrival the Ahearns were dining with Stephen and Carolyn Yates. We had two kilograms of prawns and cold long neck beer bottles and some white wine. Around the street we trudged to the Townley house carrying all the provisions only to find the abode

cloaked in darkness; not a light anywhere. Not to be deterred we cast pebbles at the windows and after several salvos a finger pulled down the venetian blind and we received a mumbled but clear “Piss off!”

We retired hurt to Yates place and had just cracked a bottle when there was a knock on the door; T’was Jim, hair still wet from a shower and once again he clearly mumbled “Wendy says to come back”.

I learned from Jim a favourite expression – “Piss ants” -a term JH used frequently to describe those he considered to be acting irresponsibly in any given situation. I have unashamedly adopted this descriptive noun and used it just as extensively

Laconic springs to most minds when describing Jim Townley. Master of understatement and a dry wit as evidenced by his description of arrival in Vietnam on HMAS Sydney in 1966:

“On arrival in Vung Tau Harbour, the ship was visited by General Westmoreland, the American force commander. He arrived in a highly polished Huey with a couple of equally highly polished aides. We all looked very shabby by comparison. Australian greens and jungle hat do not lend themselves to stylishness.”

Also illustrated by his observation when he and Barry Campton were hunkered down in the mud and rain in the middle of the Task Force area on 18th August 1966 and the fin of a recently arriving mortar bomb stuck out of the ground yards from them. “Geez that was effing close Yogi”.

In late 1971 the advance party of the Battery arrived in Singapore to join the ANZUK Force. Until 1971 the British Commonwealth maintained a presence in Malaysia in the form of the 28th (Commonwealth) Infantry Brigade the force Jim had served with in 1961. In 1971 it was announced that a new arrangement would see Australian, New Zealand and British troops remain in Singapore and Malaysia under an Australian commander of two star rank. The troops were to operate under the Five Power Defence Arrangements (FPDA) between

Singapore , Malaysia , UK, Australia, and New Zealand .

The ANZUK Force was tri-service and consisted of 7,500 uniformed personnel from the three services as well as 4,750 locally employed civilians. The arrival of 106th Field Battery RAA in Singapore in January 1972 to join 1st Light Battery RA “The Blazers” in Nee Soon Barracks marked the formation proper of 28th ANZUK Field Regiment. The Commanding Officer was a British scholar and gentleman Lieutenant Colonel Trefor Jones-not a misspelling; his name was Trefor. His Second-in-Command an Australian Gunner of reputation, Major Noel Delahunty, MC with Major Bill Hills RA commanding 1st Light Battery and the loquacious Major Jim Townley commanding 106th Field Battery RAA. Headquarter Battery was a polyglot mix of Brits, Australians and the odd Kiwi.

The next two years were filled with hard work, fun and laughter. Families were folded into the life of the Regiment and Jim’s son Peter recalls, when he was a child that some of his fondest memories of his Dad included:

“Living in Singapore. Tom Hills and I getting a dressing down for lighting that fir in the valley between our houses. Tom Hills and I getting a dressing down for throwing condom flour bombs during the military exercise at Nee Soon. Parties that you and Mum held in Singapore. To this day I still can see you and Mum roaring with laughter watching Billy, Killer and Bobby dancing on the front lawn of our house in Singapore.”



28th ANZUK Field Regiment “All present and correct” at Punjab Square Nee Soon Barracks



Jim (centre) with Batter Officers Ian Ahearn (front) and Bob Newton (rear) pass the saluting dais during a 28th ANZUK Regiment parade.

Needless to say the Singapore stories abound. One of my favourites was when on exercise at Asahan Range the Regiment centralised the battery cooks to produce what can only be described as a sparse meal. Bill Hills appeared at Jim's tent and indignantly reported that he had explored the rubbish bins outside the kitchen and had discovered that only two tins of bully beef had been used to feed the entire Regiment. "What do you think of that James? Mmmm? Mmmm?" James mumbled "I think you should stop ratting around in rubbish bins, Bill".

Jim and Wendy graciously accepted the role of Godparents to the first Ahearn protégé, Nathan, when he was christened in Singapore. They failed in their guidance when Nathan pursued an Army career in the infantry!

In 1974 the battery returned to Australia after Australia withdrew from the ANZUK Alliance. Jim and family moved to Queenscliff and Jim became a student at the Army Command and Staff College. Following Staff College Jim was promoted to Lieutenant Colonel and posted to Canberra as Staff Officer Grade 1 in the Directorate of Artillery. He became Commanding Officer of 1st Field Regiment RAA, Brisbane in January 1977. Greg Gilbert remembered those days vividly:

"I had my first conversation with Jim when I rang him at the end of 1977 to arrange my imminent arrival as the BC HQ Bty.

What a delightful posting that was. Jim was always available, always approachable, and always willing to listen to new ideas – except when I asked him to change the painted sign in front of the battery building from Headquarter Battery to Headquarters Battery on the basis there was no such noun as Headquarter. He declined my request and I recall the word pedantic might have passed his lips."

I caught up with Jim again in 1980 when he was the Australian Exchange Officer at the US Army's Training & Doctrine Command Combined Arms Test Activity, Fort Hood in Texas and I was on the staff of the Australian Army Attaché in Washington. Joint Services Staff College in Canberra was the next port of call and after graduating in July 1981 Jim was promoted Colonel and served in Army Headquarters as Director Combat Development Army and then Director Royal Artillery.

Western Australia beckoned and Jim became Commander 5th Military District from December 1984 until January 1985 when he returned to Canberra; Operations Branch Army Office as Director Combat Development. A sojourn to the UK followed with Jim attending the Royal College of Defence Studies in 1988 and returning to be promoted Brigadier and appointed as the Commandant of the Australian Army Command & Staff College in Queenscliff, Victoria in 1990

Back to Canberra in 1992 and a stint in Logistics Division followed by two years as Director General Operations and Plans in Army Headquarters. Jim retired from the Army in Canberra on 1st March 1994. A great military career that spanned 38 years; a career that would not have been possible without the unwavering support of Wendy and his family. Daughter Sally put it succinctly:

"They made a great team and had an amazing life together, travelling Australia and the world, while Dad held many postings in the Australian Army. Its a curious life for a family as many of you here would know. Every 12 months or perhaps two years, Dad would come home and announce that we were moving to Brisbane. Or Canberra. Or Queenscliff. Or the USA. Or Singapore. etc, etc, etc."

The Townley's retired in Canberra and Jim obtained a degree in international relations from Deakin University. He also accepted the position as chair of the RSL National Conditions of Service Committee and represented the RSL at hearings of Defence Force Remuneration. I can testify to Jim's diligence as chair of that committee as I answered the telephone one day and found myself a committee member. Jim and I also shared a passion for golf (as did Wendy) and we both played together regularly at Fairbairn Golf Course until he joined Royal Canberra and I joined Federal. Jim, a far better golfer than I, went on to be the Captain of Royal and spent many fruitless attempts to get me to join the club. The call of the North came loud and clear and Jim and Wendy answered it and moved to Southport, Queensland. Naturally their new abode backed onto the Southport Golf Course and just as naturally, after a few years, Jim became Southport's Captain.

Jim's loss generated a host of tributes from family as well both the military and civilian friends and colleagues. Not all can be included but the tribute from George Mansford, a notable infantry man and poet extraordinaire, needs to be recorded.

"Our army is comprised of many Corps and one of them is the beloved Artillery which was fortunate to have such a warrior as Jim Townley wearing its proud badge. In both peace and war he proved himself as a dedicated professional and a brother in arms, fair dinkum, true blue. Jim was very well known in military circles and well respected by those who served under his command from his time as a junior leader to a very senior commander. In war, Jim, as a Gunner was at times a God. He orchestrated and directed the supporting artillery fire for those in danger and need of support.

He was a comrade to be totally relied upon and always demonstrated both humour and quick wit when needed most. There is no doubt in my life's observations that this dedicated warrior in his time did more for his country and profession of arms than most. He possessed a magic armoury of wit and personality. Jim was Jim, and always a strong handshake and if not seen for a while, a powerful embrace which was and always will be

the ways of such warriors who place a high value on camaraderie.

I can but hope there are many more Jim Townley's ready to take his place. Until we meet the final rendezvous.

George and all your mates

Homeward Bound

I saw the shooting star burning so bright

Falling, falling, fading and soon from sight

So distant and yet so near

In its wake, a soldier's journey so very clear

Duty, sharing, caring, courage and sometimes fear

No longer a mortal in life's short race

A contented spirit bound for home somewhere in distant space

This fiery trail I saw tonight marks a warrior's farewell

Leaving behind another legacy of proud deeds to tell

George Mansford©April 2012

My heart goes out to Wendy and all Jim's family who, like all who knew him, will sorely miss him. Take comfort from shared memories that allow Jim to live on within all of us.

I count it a blessing to have known Jim, a privilege to have worked with him and an honour to be his friend. Shakespeare must have had James Harold Townley in mind when he wrote:

"He was a man; take him for all in all, I shall not look upon his like again."



John Maurice (Jack) Summers

Peter Bruce

The RAA lost another real character with the death on 7th April 2020 of John Maurice (Jack) Summers. Typically, very few would have known his real name as he was Jack to everyone. Born in Corowa, Victoria on 5th December 1939, Jack joined the Citizens Military Forces (CMF – now the Army Reserve) in August 1958. He was 19 at the time and his first posting was to 59th Infantry Battalion in Shepparton. In 1960, that Battalion was absorbed into the 2nd Battalion, Royal Victorian Regiment. Jack must have enjoyed his time in the CMF for in September 1961 he joined the Australian Regular Army and headed up to 1st Recruit Training Battalion (1RTB) at Kapooka to complete his recruit training.

Despite his infantry background with the CMF, Jack was allotted to artillery and spent Christmas 1961 at the School of Artillery, North Head and completed his initial gun course. In March 1962 Jack was posted across to Holsworthy to join 1st Field Regiment. By August the following year, he had moved to 102nd Field Battery which had been warned out for duty in Malaysia. Jack deployed to Malaysia with other members of the battery and under command of Battery Commander Major Brien Forward. Amongst those keeping Jack company on the way over were Kevin Chester, George Mason, Tony Locke, and Lindsay Elgar. Singapore travel restrictions for soldiers in uniform meant they had to wear civilian shirt and tie with Army poly trousers on the stopover at Singapore airport. 102nd Field Battery became part of 45th British Light Regiment and although the Emergency was officially over, the battery continued training and began supporting anti-terrorist operations on the Thai-Malay border early in 1964.

There are many stories of Jack and others in their off-duty time in Malaya however a very popular one is while on a Battery parade one

day, Jack was complimented by the BC on his uniform greens. “So I should be” replied Jack, “they’re your greens sir!” replied Jack who was BC Forward’s batman. In late April/early May 1965, 102nd Field Battery deployed to Sarawak (Borneo) to support the operations of three battalions. The 3rd Battalion, Royal Australian Regiment (3RAR), the 1st Scots Guards and the 2nd Battalion, The Parachute Regiment (UK). The Battery at this stage were using L5 Pack Howitzers and were deployed in individual gun platforms in order to support such a large area of operations. Jack and the battery returned to Malaysia in August 1965 and eventually returned to Australia in October 1965. 102nd Field Battery had returned to Holsworthy with Jack in tow.

By 1965 the situation in Vietnam was dragging more and more forces into combat situations. By March 1966, the Australian Government had agreed to increase the Task Force commitment to two infantry battalions with supporting troops. 105th Field Battery had deployed to Vietnam in September 1965 and in May 1966 1st Field Regiment arrived in country with 103rd Field Battery and in September 1966, 101st Field Battery deployed to replace the 105th. Jack joined the Regiment in Vietnam in October 1966. It was during this tour of duty that the 103rd fired in support of 11 Platoon, D Company of 6th Battalion in what was to become known as the Battle of Long Tan. Jack eventually returned to Australia with 103rd Field Battery in May 1967 and stayed with the Battery on their return to Holsworthy.

While 4th Field Regiment had replaced 1st Regiment in Vietnam, 12th Field Regiment was in training and preparing to replace the 4th. Jack was keen to get back to Vietnam and by the end of 1967, Jack was back in 102nd Field Battery. In March 1968, the 102nd Field Battery replaced the 106th in Vietnam and Jack was there with them. He was employed as signaller in a Forward Observer (FO) party working with 1st Battalion.

Jack returned to Australia in February 1969 and accepted a posting to Townsville where 4th

Field Regiment had recently moved from Wacol in Brisbane. 108th Field Battery had returned home from Vietnam in May 1968 and were due to replace the 107th in Malaya. Jack jumped at the chance to return to South East Asia and joined the 108th in September 1969. Jack was now back in Singapore as the Australian force had been withdrawn from Malaya and were now based in Singapore at Selarang Barracks.

It was while in Singapore that Jack met his wife Marina. Marina was born in Indonesia and Jack was forced to go to great lengths after his return to Australia in May 1972 to get Marina to Australia. Meanwhile in Singapore, Jack stayed on when the remainder of the 108th returned to Australia. Jack joined 106th Field Battery who arrived in December 1971. He eventually returned to Townsville to 4th Field Regiment in May 1972.

Jack stayed on in Townsville for just under ten years. He stayed with 108th for most of that time from 1974 to 1976 was the Battery Clerk. Once promoted to Sergeant, he became the Movements Sergeant for the regiment and according to Paddy Durnford: *“Jack was a highly educated person and an excellent typist making no mistakes. He also had his senior certificate and could have had any career that he wished for but chose the Army for Aussie Rules and mateship; he was a true mate.”*

To say Jack liked a beer is an understatement and there are numerous stories around that tell of tall tales and true of Jack’s life. While attempting to raise enough funds to move his wife Marina to Australia, Jack was able to resist the 1630 swill at the canteen by joining the diggers on Confined to Barracks (CB) punishment and volunteered to sweep the gutters. It was this sort of thing that made him a legend and he finally achieved his aim of getting Marina to Townsville. Jack finally discharged from the Army on 17 September 1982 after 21 years in the ARA. Of those 21 years, Jack spent just over six years overseas including two tours of Vietnam.

Jack and Marina stayed on in Townsville for some years and built a house in Kelso, a then

outer suburb of Townsville. Doug Hill recalls: *“As a postie I delivered Jacks mail from time to time from 1990 to 2011. I was with Jack in Singapore and again in Townsville when Paddy was our BSM. His yard was always well kept with trees, shrubs, fruit trees, pot plants, vegetables and herbal gardens. The house was a typical tropical highset on concrete slab with breeze block around the perimeter. It had a single garage on the left and a small laundry to the rear. The rest of under his house was his brewery, bar and entertainment lounge. His pride and joy. He had three beer vessels fermenting at any given time with different recipes. He capped beer in tall bottles, stubbies and in beer kegs too. He was proud to show his latest brew and share his tips on brewing anytime I visited him. He was mindful of his health and he used to get up at 5am and go for a walk/jog. Jack did office work on casual/part time arrangement. Jack and Marina had a takeaway Asian food shop opposite my house on Thuringowa Drive around early 1980s. My father in law loved Marina's cooking. If Jack was around when I delivered his mail I would stop for a yarn.”*

Paddy Durnford also recalls: *“Marina was a good gardener and she also smoked. To save on the cost of tailor-made cigarettes, hidden away out the back of her garden was a couple of tobacco plants. She dried her own leaf and rolled her own fags - smart lady. Rolling her own and with Jack making home brew, they certainly kept their costs down.”*

Jack’s health was becoming an issue and he had several stents put in to keep his old heart functioning. By 2012, Jack decided it was time to move south closer to family. He eventually sold their house in Townsville and moved to Sunbury in Victoria. Marina died a couple of years before Jack and after her death Jack moved into a nursing home in Sunbury. Jack finally succumbed on 7 April 2020. He had recently earned his OBE – Over Bloody Eighty – badge.

Jack lived a full life and stories of his escapades abound, but most are best kept for the times old

mates get together and talk of mates who have passed. We will always have a place in our hearts and a story to tell about Jack Summers.

Acknowledgements

Paddy Durnford for his stories and history of Jack.

Doug Hill for his stories.

Colin Flatters and John (Bo) Plenty for their insights into Jack's story.

Vales in Brief

Information supplied from a range of open sources. For more detailed tributes visit the RAAHC website and click on the Vales section.

Bombardier Neil Lunney

Hilton Lenard

Bombardier Neil Lunney was an CP & OP signaller. Neil passed away peacefully in the morning of 19th January 2020. He was born on 6th October 1940 in Burwood and enlisted in the Royal Regiment of Australian Artillery and served with several Batteries including 107th Field Battery in South Vietnam. Neil was a strong supporter of the Battery and the "Rammer" Association from the beginning, Neil and Mim (his wife) attended every reunion they could and were noted 'reunion characters' a roll Mim warmed to quickly. They lived near Tewantin then Little Mountain, directly opposite the Sunshine Coast Colourbond Race Course and pursued their love and dedication to thoroughbred horse ownership and were successful with a number of winners throughout Queensland race meetings.

Sergeant RJK (Bob) Semple, OAM, BEM

Brigadier Doug Perry OAM, RFD (Retd)

Sergeant RJK (Bob) Semple OAM, BEM, Bob was a Gun Sergeant with 2/12th Field Regiment RAA for the duration of World War Two. He was A Sub D Troop 62nd Battery 2/12th Regiment and served at Tobruk, Alamein and in New Guinea. He died after a short and unexpected illness at three Months short of the Ton. Bob was a widower and he had no children.

He maintained a phenomenal memory to the end. He was Chieftain of the Pipe Bands of Australia, President of the Rats of Tobruk Association. Life Member and Past President of Hawthorn Pipe Band and Life Member of the Rats of Tobruk Pipe Band. I expect he is the last of 2/12th Field Regiment. He is certainly the last Victorian Rat of Tobruk Gunner living in Victoria. He will be remembered by many for his address at the 2019 ANZAC Service in Canberra.

Late last year I took him to visit 53 Battery in the field at Puckapunyal and he gave a stirring address to the Battery members and shortly after that visit he attended his 99th Birthday at the Rats of Tobruk Club rooms He was regular attender at our annual RAA lunch at RACV Club in Melbourne where he always sat with recently commissioned officers all of whom will remember him well. Last year I also arranged for a recently refurbished 25 Pounder, which is to be used as a re-enactment piece, to be marked with Bob's Tac sign and he attended the proof firing and fired the first re-enactment round.

Ross William DEEGAN

Major Peter Bruce OAM (Retd)

Ross died on Wednesday 15th October 2019 aged 71 years after losing a two-year battle with Lung Cancer. Ross served in Vietnam from 14th June 1967 until 17th December 1968 with postings to Headquarters, 1st Australian Task Force, 1st Australian Reinforcement Unit, 4th Field Regiment and finished his tour with 12th Field Regiment. Ross deployed to Singapore with 106th Field Battery in December 1971. At his own request, Ross was cremated at a private family service. Ross had told me he would like to attend the recent Australian Artillery Association dinner in Caloundra, unfortunately he didn't make it. Ross served in both the ARA and ARes, Ross was well known to many ex-Gunners and Vietnam Veterans.

George E Ball*Major Peter Bruce OAM (Retd)*

George died in Gosford Hospital on Monday 21st October after a long illness. He has battled failing health for number of years and was hospitalised recently with a oesophageal blockage. It was a culmination of Pulmonary Fibrosis, the gut and a bladder issues that became too much for him. George saw service in Korea and in Vietnam. George was a “founding father” of the Regular Army Officers Luncheon Club (RAOLC) and a supporter of the Duntroon Society. He was also a Member of the RACA. As regular attendees at Second Friday Lunches and six monthly “Graduation” Lunches will know, George was a regular attendee. His tenacity under failing health and his desire to tell a story will be long remembered. Unfortunately for Australian Military History, George will not be able to fulfil the request to tell his Korean story “on-the-record”, as we so often heard over a glass of red at Show-and-Tell.

Captain Peter William Wertheimer OAM, RFD*Brigadier Doug Perry OAM, RFD (Retd)*

Captain Peter William Wertheimer OAM, RFD died at 1936 hours on Saturday 23rd November at the age of 78 years after a short battle with cancer. At the time of passing, he was surrounded by his immediate family and his pet dog Sadie. Peter was a well know Reserve Officer who served with 10th Medium Regiment, 2nd/15th Field Regiment and 132nd Division Locating Battery. He is survived by his partner of 25 years Christine Taplin and his three daughters Sally, Sue and Viv.

Adrian Scott. Adrian passed away on Monday 4th November 2019. Adrian was a member of both RAAA(Q) and Fort Lytton Historical Association (where he was a very popular Guide). Adrian was one of the early National Service intake and was a Member of Redlands Nashos.

Kevin Salter. Kevin was a stalwart of 101st Field Battery in Malaya and revered for his survey skills within the Locating community and indeed, the RAA overall. RIP Kevin Salter – one of nature’s gentleman.

Warrant Officer Class Two Raymond John Taylor. Ray left for the Great Gun Park in the Sky on last Friday 29th November 2019 aged 77 years.

Brian Francis French. Brian former member of 5th Field Regiment RAA, served in the first National Service intake at RAAF Amberley, before a conversion course from RAAF to Army. He was an Accountant with Queensland Railways, from which he resigned to volunteer for service in Korea, however the Korean theatre was "closed" before he deployed. Brian then undertook full-time service in the CMF as QM in 5th Field Regiment RAA at Kelvin Grove.

David Aaron Rowe. David was a Lance Bombardier in the RAA and served in Afghanistan circa 2006. David took his own life on 17th January in Canada where he had resided.

Kevin Tucker. Kev served with 1st Field Regiment in South Vietnam from May 1966 until May 1967 and again with 12th Field Regiment from February 1971 until November 1971. Kev had previously served in Malaya with 102nd Field Battery. Kev was commissioned in 1987 and was QM of the School of Artillery for some years He completed some 35 years in the Australian Regular Army. He died on the 23rd April of 2019.

James Quenton Knight. James was a locator who passed away 18th January 2020 aged 70 Years.

Jim Milios. Jim was a former Battery Commander of 48th Field Battery, and long-term member of the RAA Association (South Australia)

Ian Hodgson. Ian died early morning of Friday 27th March 2020 in Adelaide. Ian served with the Training Team in South Vietnam during 1970/1971 and had a long and distinguished career in the RAA. He celebrated his 88th birthday in December 2019.

Peter McGrath. Peter who died on Tuesday 28th January 2020 was a retired Warrant Officer Class One who had enlisted in October 1976 and discharged in June 2008. Peter served with 7th Field Regiment, Australian Defence Force Recruiting Unit, Headquarters Logistics Support and 1st Movement Group.

Kenneth Arthur "Kenny" Sargent. Although actually a Sapper, Kenny was a member of RAAA(Q) for many years. His Dad, Arthur Sargent served as RSM in RAA in Darwin during WW Two, and later Battery Sergeant Major of R Battery, 5th Field Regiment CMF).

Major PR (Phil) Burns. Phil died on 18th December 2019 aged 88 years. Phil was attached to AATTV in South Vietnam from 27th June 1966 to 11th June 1967 USAID Chieu Hoi Program, Can Tho.

Barry Maclean. Barry served with 1st Field Regiment in Vietnam from 3rd February 1969 until 4th February 1970.

Captain Stuart Tessier. Stuart who was a former member of 5th/11th Field Regiment RAA passed away unexpectedly on Wednesday 1st January 2020 aged 68 years.

Bernard (Curley) McMahon. Bernard was the first President of the 'A' Field Battery Association Inc.

Keith Howden. Keith passed away peacefully 19th January 2020 Aged 76 Years.

Colonel Trevor Olsson.

Warrant Officer Class One Frank Perry.

Brigadier James Walter Ryan. Jim Ryan RAA) passed away Thursday 21st May 2020 after losing the battle against cancer. Although just 79 he is surely blessed to be released from this terrible illness. Jim Ryan served in Vietnam with 1st Field Regiment in 1966 and 1967 and again with the Headquarters of the 1st Australian Task Force in 1969. He commanded 4th Field Regiment in 1981 and 1882. Requiescat in Pace – James Walter Ryan.

Daryl Patch. Daryl Patch passed away on Friday 22nd May 2020 in hospital. Amongst other appointments, was Battery Commander of "A" Battery in the late 70s.

Kevin Maker. Kevin Maker a great mate and colleague passed away on Sunday 24th May. Kevin was an active and very successful DVA Advocate for many years and helped many Gunners to navigate the DVA procedural conundrum. Kevin served in Detachment 131st Divisional Locating Battery in South Vietnam in 1969 and 1970. Kevin turned 71 in April. RIP Kevin Maker

On the Nature of the Australian Soldier

'The democratic institutions under which he was reared, the advanced system of education by which he was trained-teaching him to think of himself and to apply what he had been taught to practical ends-the instinct for sport and adventure which is his national heritage, his pride in his young country, and the opportunity which came to him of creating a great tradition, were all factors which made him what he was...

In him there was a curious blend of a capacity for independent judgement with a readiness to submit to self-effacement in a common cause. He had a personal dignity all his own. He had the political sense highly developed, and was always a keen critic of the way in which his battalion or battery was 'run', and of the policies which guided his destinies from day to day.

His intellectual gifts and his 'handiness' made him an apt pupil. It was always a delight to see the avidity with which he mastered the technique of the weapons which were placed in his hands....

He was always mentally alert to adopt new ideas and often to invent them. His adaptability spared him much hardship. He knew how to make himself comfortable. To light a fire and cook his food was a natural instinct. A sheet of corrugated iron, a batten or two, and a few strands of wire were enough to enable him to fabricate a home in which he could live at ease.

Psychologically he was easy to lead but difficult to drive. His imagination was readily fired. War was to him a game, and he played for his side with enthusiasm. His bravery was founded upon his sense of duty to his unit, comradeship to his fellows, emulation to uphold his traditions, and a combative spirit to avenge his hardships and sufferings upon the enemy.'

*John Monash – A Biography by Geoffrey Serle,
page 391 published 1982 by Melbourne
University Press*

Australian Gunners

[Serving or Retired]



**YOU ARE INVITED TO
CELEBRATE THE**

150th Anniversary of Australian Artillery in 2021



Mark Your Diary

National Events

Where: Canberra, Venues - RAA National Memorial & AWM

WHEN: SUNDAY 1ST AUGUST 2021

Where: Sydney, Venue - Victoria Barracks

WHEN: SATURDAY 6TH NOVEMBER 2021

Note: More detailed information including timings will be provided when available throughout 2020 and 2021

Unit & Association Events

Throughout 2021 as advertised by those individual coordinating organisations.

CANBERRA

1st August 2021

Commemorative
Service at RAA
National Memorial
Mount Pleasant

Synchronised
National Ceremonial
Fire Plan

**Mount Pleasant & all
RAA Unit Locations**

Last Post Ceremony
**Australian War
Memorial**

SYDNEY

6th November 2021

Formal Parade & Drum
Head Service

Incorporating the
presentation of a new
Queen's Banner

Followed by

**150th Cocktail Party
Victoria Barracks**

FURTHER INFORMATION

Contact
RAA HOR Staff
via email at
raa.hor@defence.gov.au

Stand Down

A Brief History of Employment of Australian Artillery

Lieutenant Colonel Nick Floyd

THIS ARTICLE WAS BEEN PROVIDED FOR READERS INTEREST AND ENJOYMENT WITH THE CAVEAT THAT THE TEXT WAS ORIGINALLY WRITTEN AS AN ANNEX TO THE FORTHCOMING EDITION OF LWD 3-4-1 *EMPLOYMENT OF ARTILLERY*, AND DESIGNED TO PROVIDE AN INFORMATIVE HISTORICAL CONTEXT FOR ARTILLERY EMPLOYMENT THROUGHOUT AUSTRALIAN MILITARY HISTORY.

THE TEXT WILL FORM THE BASIS FOR A LARGER, MORE DETAILED WORK CURRENTLY UNDER DEVELOPMENT, ON THE '*ESSENTIAL HISTORY OF AUSTRALIAN ARTILLERY 1871-2021*'

Introduction

This history provides an insight into the employment of Australian artillery on operations, in order to understand how artillery has been employed throughout its contemporary political, geostrategic and military context. The history thereby illustrates how the ever-changing character of conflict and the manner of national contribution determine the composition and extent of commitment of artillery to each conflict.

Regardless of era or tactical, operational and strategic setting, a version of the 'gunnery problem' endures throughout: that is, addressing the continual challenge to acquire adversary targets, determine the requisite effect, and engage those targets effectively, as conveyed through an effective 'Sensor-to-Shooter' linkage. Equally, effective interaction with and advice to counterpart manoeuvre arms commanders is a fundamental constant to successful artillery employment.

Beyond revealing these immutable characteristics, Australian artillery history demonstrates that Gunners need to continually train and be expert in all forms of artillery

employment, as the character of future campaigns remains unpredictable.

Pre-Federation 1788-1901

Colonial forts and fortifications

Australia's first defences were based on re-purposed naval guns. Colonial artillery forts and fortifications provided a vital expression of defence of the fledgling British colonies against the threat of sea-borne raids and invasion from Russia, France, Germany and the United States (US).

Colonial-era guns were initially smooth-bore muzzle-loading, and used round-shot, as well as explosive, grape-shot, and canister shells diversely as target treatment became more and more sophisticated. As new technologies of heliography, telegraphy, searchlights, mines and torpedo boats emerged, these were often grouped with artillery as a collection of 'scientific arms'.

Field artillery

Colonial Australian field artillery operated in a Napoleonic era of manoeuvre in land warfare, where infantry, cavalry and horse-drawn artillery visibly interacted in concert. Guns were deployed in a direct fire role, firing enfilade from straight-line gun positions on the flanks of assaulting infantry. No Australian colonies fielded siege batteries, though these were commonplace elsewhere. A traditional 'gunnery problem' existed – where gun, commander and observer were co-located. Speed into and out of action was paramount.

Post-Federation

Garrison (coast) artillery

The largely permanent-force garrison artillery ceaselessly strove to improve the 'gunnery problem'. Target acquisition benefited from advances in optics, fixation and orientation, while a growing use of meteorology (wind, temperature, density) and standardisation of munitions (storage, shell weight, charge loads) began the path towards accurate predicted fire.

First round effectiveness became theoretically achievable, though at this period remained technologically unattainable.

Boer War 1899-1902

The inception of indirect fire coincided with colonial and then Commonwealth Australian commitments to the Boer War. The range and lethality of modern small arms like the Maxim and Vickers machineguns and magazine rifles rendered exposed field artillery positions untenable.

This saw the transition to the modern ‘gunnery problem’: of gun positions in defilade, displaced from observers and supported manoeuvre arm commanders. Intercommunication between observer, commander and gun line thus became indispensable, though was difficult to achieve.

World War One 1914-1918

Prelude

The Boer War experience revealed shortcomings in early breech-loading, non-recuperating guns. 18-pounder quick-fire guns and equivalents had recently been introduced into service afterwards, along with heavier calibre howitzers designed for high angle, destruction and neutralisation – though the latter were in short supply and not standardised.

Gallipoli 1915

The Gallipoli campaign witnessed Australia’s first wholesale involvement in Industrial-era warfare and all its lethality, complexity and consumption, unmatched in its scale and national commitment.

Cramped, hilly terrain and difficult logistics including lack of high-explosive (HE) shells exacerbated the paucity of artillery support available to the Anzacs from both Australian and other British guns. British-Indian mountain batteries assisted, while high-velocity, low angle naval guns and 18-pounders were frequently impeded by intermediate crests and unable to engage targets effectively. Intercommunication between observer, manoeuvre commander and the guns was often poor. Initial use of air observation occurred, but no direct communications or imagery resulted in slow transfer of intelligence.

Sinai-Palestine 1915-1918

The tenets of mobile warfare were retained in Palestine, as the theatre’s terrain and scale

afforded manoeuvre the advantage. Austere logistic lines of supply for both sides saw relatively low intensities of artillery expenditure predominate.

While no Australian artillery deployed, British guns supported Australian Light Horse and other Desert Mounted Corps formations in direct and indirect fire roles, in a fluid mix of rapid advances and the reduction of Ottoman defended positions. The campaign’s tempo and lower strategic priority moderated adoption of contemporary artillery technological and tactical evolutions occurring on the Western Front, such as counter-battery (CB)¹ techniques, and the pursuit of predicted (i.e. calculated rather than adjusted) fire.

Western Front – the modern gunnery problem 1916-1918

On its arrival on the Western Front in 1916, the Australian Imperial Force and the Australian Field Artillery (AFA)² were confronted by a campaign where defence had a considerable advantage over the attack, and manoeuvre had given way to static positions and unprecedented attrition.

Each of the warring forces strove to resolve this lethal manifestation of the modern ‘gunnery problem’ in-stride: improving fixation & orientation of guns in a growing moonscape of featureless terrain with refinements in survey instrumentation and computation; addressing calibration of guns through accounting for variance in barrel wear, projectile size and weight, and propellant composition and handling; inception of the novel field of enemy weapon-locating; and rapid advancements in recording and applying meteorological corrections to gunnery calculations.

The inception of *registration* missions providing ‘correction of the moment’ allowed the usage of accurate predicted fire, and later, were used to support surprise attacks when conducted at a distance from the assault area, or otherwise disguised. Communications developments saw wire telegraphy gradually replaced by wireless radio, permitting immediate and relatively

¹ Alternately termed *counter-bombardment* during World War One.

² The Australian Field Artillery comprised the artillery elements of the Australian Imperial Force, and was drawn from pre-war RAA, Royal Australian Field Artillery (RAFA) and Royal Australian Garrison Artillery (RAGA) personnel, volunteer Militia artillerymen, and new recruits.

reliable linkage between forward and aerial observers and the gun lines. Together, these advancements allowed more flexible application of artillery in support of manoeuvre arms, greater concentration of fire, and heightened responsiveness and reliability of fire.

The employment of anti-aircraft artillery (AAA) spread rapidly as the war progressed. Heavy and light machineguns and field artillery were originally re-purposed, but soon replaced by purpose-built, quick-fire guns such as the 3-inch, and the 1-pounder 'pom-pom'. Immense mathematical and physics challenges in target acquisition, range-finding and airburst fuse-setting were rapidly confronted. Though initially not coordinated beyond local defence, Allied and German AAA nevertheless accounted for many hundreds of aircraft kills, including – famously – the 'Red Baron', by a 53rd Battery AFA Gunner.

While aerial observation from balloons had occurred for decades, the advent of fixed wing flight and improvements in aerial photography permitted huge advances in the speed of intelligence dissemination and application, including, for artillery, predicted fire for both assault and defence. Gridded photomaps shared aloft and at the gun-line now permitted rapid target indication and engagement. Airborne wireless radio introduced in the final months of 1917 – employed notably later in mid-1918 at Le Hamel – permitted real-time artillery adjustment to barrages.

Aerial reconnaissance added significantly to the nascent function of artillery intelligence and the development of CB fire techniques. In the absence of locating radar, effective sound-ranging and flash-spotting techniques were developed on both sides – each striving to locate, engage and destroy the adversary's guns. Heavy calibre, long-range guns were increasingly dedicated to CB work, while lighter calibre guns would be employed to both deceive and provoke enemy response, at the risk of 'unmasking' gun positions in the face of a still-heavier retaliatory artillery 'ambush'.

The Western Front marked the height of complexity and scale in deliberate fireplan construction. Allied and German defences were part of concentrated fortification systems that were heavily protected, and linear as well as deep. The impregnability and lethality of such targets necessitated comprehensive and meticulous artillery support that could simultaneously blind, suppress, neutralise and

destroy targets across uneven, narrow and congested frontages.

Fireplan barrages evolved from simple, fixed arrangements to creeping barrages that moved in front of advancing troops, standing barrages that neutralised whole enemy trench lines, and lifting barrages which were standing barrages that moved wholly to subsequent objectives and cut-offs. Defensive fireplans included predicted-fire 'SOS' missions that engaged likely enemy approaches, while box barrages were fired around advancing troops on new-won objectives to counter enemy penetration.

Other standard AFA fire missions included registration as well as 'search' and 'sweep' missions that were employed across areas to harass forward troops or unmask enemy guns, while heavier calibre howitzers conducted *harassment & interdiction* missions against depth targets, using predicted fire generated from aerial reconnaissance.

The increasing complexity of artillery tactics and functions led to commensurate augmentation of the staff of divisional-level General Officers Commanding Royal Artillery (GOCRA³). Similarly, the growing incidence of corps-level artillery fireplanning in support of corps- and higher-level deliberate operations saw the creation of corps-level GOCRA's across British and subsequently Dominion forces, with steadily increasing authority to allot, coordinate and orchestrate the fireplanning and employment of massed artillery. This included Brig.-Gen Coxen as the first Australian artillery commander of the newly-formed Australian Corps from November 1917.

By the middle of the War, artillery command and control – the allocation and employment of firepower assets at all levels – had evolved to permit strong, highly centralised *command* of guns, primarily to support the destructive massed fireplans of 1916 and 1917. By the War's end, artillery command and control had further developed to equally allow decentralisation of artillery *control* to more flexibly allot and guarantee fire support along the front. Rapid improvements in communications, fixation, orientation and ballistic correction facilitated the development of artillery support tasking that unleashed an unprecedented capacity for artillery to switch and move fires across the front, in greater concert with manoeuvre.

³ Alternately titled *Brigadier-General Royal Artillery* from May-Dec 1916.

Despite the immense efforts given to perfecting artillery indirect fire, artillery in direct fire roles was still essential for the reduction and destruction of obstacles in the attack – such as by 6th Battery AFA at Pozières – or later, as prototype anti-tank guns, successfully employed first by German defenders at Bullecourt, and adopted later by both sides. Both HE and shrapnel shells were employed – the latter effective in direct fire, where the fuse could be set accurately.

Artillery technology and materiel development finally matched the rate of evolution of artillery tactics in the final months of the War, although communication difficulties were never fully resolved. The Australian Corps' advance during the Amiens Offensive witnessed a transition from static back to mobile warfare, with artillery units stepping up behind advancing infantry, and the precursor to modern-day quick fireplans, formulated to respond to rapidly unfolding battles.

The growth of artillery formations and units on the Western Front was relentless. By 1918, the strength of deployable Australian artillery had swelled from a pre-war permanent RAA strength of three field batteries in 1913, to the Australian Corps employing a total of up to 1,200 guns, including 13 field artillery brigades, two heavy siege batteries, five divisional ammunition columns and numerous medium and heavy trench mortar companies.

Between the Wars

The 1930s saw widespread down-sizing across the Australian Military Forces, including the demise of corps-level CRAs, and the diminishing of divisional-level CRA functions. Confronting the task of defending a continent with a depleted force based on the rhetoric of the *Singapore Strategy*, the Chief of the General Staff John Lavarack convinced the Government to invest in motorisation and re-equipping of its modest land forces, including artillery.

Meanwhile, huge advancements in aircraft technology were occurring in Britain and elsewhere, as European powers prepared for conflict, heralding commensurate gains in capability to provide effective intimate close air support (CAS). Global investment in AAA grew accordingly, although Australia remained seriously underprepared and underequipped in both arenas.

As war neared and the threat of German and possibly Japanese raiders and bombardment grew, Australian coast artillery expanded, re-

equipping as well as recalling obsolescent guns into service. Ultimately, the outbreak of war saw Australia engaged on a massive scale in multiple theatres, in highly lethal conflict, demanding Australia move to a war economy to re-equip and re-arm with artillery, munitions and all enablers for firepower.

World War Two 1939-45

Tobruk, Greece and Crete 1941

The Australian defence of Tobruk saw artillery used defensively in both indirect and direct roles, and the first Australian employment of dedicated anti-tank artillery, working closely with defending infantry – including the use of a large collection of captured Italian guns known as the 'Bush Artillery'. AAA was critical to the besieged defenders, with the Axis forces exploiting their regular air superiority.

The abortive subsequent campaigns in Greece and Crete saw Australian artillery often under-employed and misemployed. British, New Zealand and Australian forces quickly lost the initiative against the coordinated all-arms⁴ German advance through Attica, and the Allies fell back, with the withdrawals frequently covered by Australian guns, including notably at Thermopylae and Brallos Pass by the 2/2nd Field Regiment. In Greece, and during the subsequent air assault on Crete, the overall paucity of anti-aircraft and field artillery in both campaigns directly contributed to heavy Allied losses prior to evacuations.

Syria-Lebanon 1941

This Australian-led campaign to clear dogged Vichy French resistance witnessed the extensive, innovative employment of Australian and British Dominion field artillery in the advance and attack, fixing Vichy defenders while Allied infantry and light armour manoeuvred to outflank or bypass. As well as standard missions, single guns and artillery sections were continually used forward in anti-tank and direct-fire tasks. Though only two RAA field regiments were in action during the Syrian campaign, Australian artillery fired almost 15,000 rounds.

Australian Continental Defence 1939-45

Prior to the War, coast defence artillery units were situated sparsely at strategic locations around the Australian coastline. By the War's

⁴ More latterly referred to as *combined arms*.

end, in excess of 200 anti-aircraft and coast artillery batteries, along with searchlight, anti-aircraft group, fire control and command headquarters existed in fixed defences. The expansion of artillery in general and coast defence, survey batteries and anti-aircraft units in particular, meant that by mid-1942 some 80,000 of the Australian Army's strength of 406,000 were Gunners.

Malaya 1941-42

The short-lived Malayan campaign saw haphazard artillery employment as the mixed British, Indian and Australian forces conducted rolling withdrawals after losing the initiative early on.

Dispersed 8th Australian Division field artillery batteries conducted disaggregated but effective close support for the Commonwealth forces retreating southwards. Despite stubborn resistance by the 2/10th and 2/15th Field Regiments and others against the ensuing Japanese amphibious assault on Singapore, the island abruptly capitulated, and its defenders were massacred or captured.

North Africa (after Tobruk) 1942

9th Australian Division artillery assets were an integral part of the British 8th Army during the later North African campaign, which was characterised by employment of many artillery tactics and techniques from World War One: regular use of CB fires, detailed and concentrated fireplans in support of mass attacks, and heavy use of dedicated aerial observation. Australian Army Air Liaison Officers (ALOs)⁵ were also heavily employed in coordinating the air-ground battle.

Artillery was used at El Alamein on a massive scale, supporting the infantry in the assault, and protecting troops when they were counterattacked. Anti-tank artillery and AAA were relied upon heavily firstly in the defence, then in the subsequent breakout and pursuit westwards. Airspace coordination with Desert Air Force elements was crucial, and integrated in the overall coordination with Allied infantry and armoured commanders.

PNG and Pacific Islands 1942-45

Exceptionally rugged terrain and tropical conditions in the South West Pacific severely

hampered the conduct of manoeuvre and firepower early in the campaign. The under-strength 13th and lightly-equipped 14th Field Regiments (Militia) were only able to deploy close to Moresby, the latter firing at maximum range in support of the Australian troops withdrawing from Kokoda.

Conditions and Japanese local air superiority throughout New Guinea drove reorganisation of Australian forces into light, jungle forces with increased reliance on organic, small calibre mortars and machine guns, though artillery remained in high demand throughout as the only guaranteed, all-weather fire units. After Milne Bay and the counteroffensive northwards towards Kokoda, Short 25-pounder gun detachments of the 2/4th Field Regiment accompanied the US Army's 503rd Parachute Infantry Regiment, to conduct the first Australian airborne assault onto Nadzab airfield.

As the campaign progressed, naval gunfire and CAS became increasingly available – the latter founded upon the advent and growth of the pivotal ALO function. The clearances of the last Japanese forces from the northern New Guinea coast and subsequent landings in Borneo witnessed the Australian Army's emergence as a dedicated jungle fighting force, developing a far closer integration of artillery and fire support coordination with manoeuvre units at brigade level, departing from the level of command and scale of employment seen in Europe, Middle East and Africa – and, indeed, on the Eastern Front. Nevertheless, by the end of the War, the RAA had raised in excess of 70 regiments of field, medium, anti-tank, anti-aircraft and survey artillery.

Post-War to Cold War

Korea 1950-53

The War's aftermath saw a rapid demobilisation of units across the entire Army, and the emergence of a fully volunteer force centred on the nascent Royal Australian Regiment, conducting peacekeeping in the former Dutch East Indies and with the British Commonwealth Occupation Force (BCOF). Despite the resurgence of full-scale warfare on the Korean Peninsula, Australia elected not to contribute artillery units. Selected RAA officers were seconded to British and New Zealand artillery units and headquarters, and Australian Air OP officers served with the RAF, gaining valuable insight into post-War joint fires coordination and airspace control concepts.

⁵ The precursor to modern-day *Ground Liaison Officers* (GLOs).

Meanwhile, the onset of the jet and rocket age was heralding the demise of AAA in favour of surface-to-air-missiles (SAMs),⁶ and the introduction of anti-tank missiles into infantry unit inventories, supplanting anti-tank artillery. Coast artillery units were also progressively disbanded.

Pentropic reorganisation 1960-65

Australia nonetheless remained focussed on regional specialisation, and soon after, adopted the *Pentropic* organisation, wherein Australia's reorganised two divisions were intended to be air-portable, capable of fighting in a limited war and of conducting dispersed anti-guerrilla operations. For the RAA, this meant the introduction of 105mm L5 Pack Howitzers and rugged, air-portable M2A2 guns, and development of weapon-locating and SAM capabilities. At divisional level, heavier calibre 5.5in guns were introduced, though the guided missiles also proposed never eventuated.

Whereas once divisional-level, then brigade-level was the principal echelon of tactical action, now it had become the *Pentropic* 'battle group'. Despite a strengthened divisional artillery group, the *Pentropic* concept's organisational decentralisation accelerated a trend away from proficiency in formation-level joint fires coordination and concentration, practiced in the previous world wars.

South-East Asian conflicts

Despite discontinuing the abortive *Pentropic* experiment, Australia's foreign and defence policy of *Forward Defence* precipitated expeditionary intervention operations across South-East Asia. Counter-insurgency operations in tropical terrain prevailed, with an emphasis on dominating ground through aggressive patrolling, based out of and supported from defensible fire-bases.

Malaya 1950-63 and Malaysian-Indonesian Confrontation 1963-66

The Commonwealth operations in Malaya and the subsequent Confrontation in Malaysia saw the deployment of Australian field artillery batteries in Malaya, then in Malaysia and Borneo, and light anti-aircraft artillery batteries to Butterworth, embodying Australia's extant

Forward Defence posture. Tactical engagements were largely fleeting in both campaigns, and responsiveness, dispersion and persistence became key characteristics of field artillery employment, at the relative expense of concentration of force, and flexibility of allocation of support.

South Vietnam 1962-72

With the commitment to Vietnam came a change in threat to a mix of irregular and regular force adversaries. Interoperability with US forces became vital, and scale and intensity of combat increased markedly, though changes in Australian artillery employment occurred more slowly.

The advent of reliable utility helicopters saw fulfilment of the air mobility concept, and restoration of a dedicated organic attack aviation capability, alongside increasingly responsive and powerful CAS and battlespace air interdiction (BAI)⁷ capabilities. This abundance of joint fire assets allocated at brigade (1st Australian Task Force) and battalion levels drove demand for additional forward observers (FOs) with greater access to joint fires, and the creation of the modern Fire Support Coordination Centre (FSCC) at brigade headquarters level, with its attendant Tactical Air Control Party and Airspace Control Element.

Sound-ranging and early-technology weapon-locating radars became instrumental in rapidly and effectively fixing enemy mortars and rockets, cueing CB fires responses, and vectoring patrol missions. The technique of coordinating offensive patrols using combined artillery and signals intelligence was most famously demonstrated in 1966, leading up to the Battle of Long Tan. The success of Delta Company 6th Battalion's ensuing desperate firefight was guaranteed by the lethal and accurate fire from the supporting Australian, New Zealander and American gun batteries.

Deployment from air-portable and static fire- or patrol-bases continued, with increasing artillery assets and an ongoing employment of organic, small calibre mortars. Combined-arms operations from the fire support patrol bases at Coral and Balmoral in 1968 exemplified both the tactical effectiveness, as well as the potential for risks, intrinsic in planning and conduct of such actions.

⁶ This development led to change in nomenclature to Air Defence (AD), then progressively Ground-Based Air Defence (GBAD), to distinguish from the corresponding air power role.

⁷ More recently termed simply *Air Interdiction*.

Post-Vietnam

Post-Vietnam 1973-1999

Withdrawal from Vietnam saw force reductions and further batteries disbanded, and an Army reorganisation re-focussed towards a Cold War conventional threat. The re-focus witnessed a short-lived recognisance of the importance of coordination of artillery at the divisional level that was reflected at least in Australian artillery doctrine and training, if not in its organisation.

As the spectre of war with Warsaw Pact forces evaporated, the 1990s saw the onset of the *Defence of Australia* doctrine, anticipating widespread low-incidence, though lethal, threats. The *Army in the 21st Century* (A21) Trials proposed highly decentralised command of fire support, and artillery integrated as organic assets into motorised infantry. In response to the prevailing *Defence of Australia* doctrine, a concept of 'continental' force projection similar to that exhorted between the Wars was attempted, as a desperate recourse to maintain a nucleus of modern levels of firepower and manoeuvre, in the face of dwindling defence expenditure.

Improvements in fire control computerisation allowed the ability to disperse firing locations, yet accurately concentrate fire, and supported the introduction of artillery precision guided munitions (PGMs). Advent of the PGM indisputably re-introduced *destruction* as a primary artillery mission.

The A21's 6th Motorised Battalion Group construct trialled an organic armoured cavalry reconnaissance troop; guns of both light and medium calibre distributed in section-level positions; FO parties; organic weapon-locating, meteorological and survey assets; and the inception of a battalion-level All-Sources Cell. Importantly, the latter fused organic artillery and cavalry intelligence, but also imagery from the primitive unmanned aerial vehicles (UAVs), thermal imagery and ground surveillance radars in Reconnaissance/ Surveillance Company. While locally potent and well supplied in intelligence, the A21 concept's command structure lacked the flexibility to aggregate forces, and to coordinate its artillery firepower in support of higher-level operations.

Meanwhile, Headquarters 1st Task Force was experimenting with Joint Offensive Support Coordination Centre (JOSCC) structures, building on the functions and capability of the predecessor FSCC organisation. Timely fusion of intelligence, surveillance and reconnaissance

(ISR), and coordination of lethal and non-lethal effects entered Australian Army developing doctrine, and with it the re-defining of the employment of artillery at formation level.

During this period, as part of the ADF contribution to the US-led Gulf War of 1991; 16th Air Defence Regiment deployed multiple air defence missile launchers and command elements aboard RAN replenishment vessels HMAS *Success* and *Westralia* to protect from close air and small surface threats from September 1990 to June 1991. These deployments marked the only conventional Army unit deployments to this operation; albeit in a slightly non-traditional fashion.

Contribution to Peace Operations and United Nations commitments

Operational employment of conventional artillery firepower waned as Australian foreign policy trended post-Cold War towards overt support to United Nations (UN) commitments. Earlier Australian peacekeeping with the BCOF in Japan had seen deployment of a gun battery for precautionary purpose, but now as deployment under UN Chapter Six conditions became standard in theatres such as Lebanon, Namibia, Cambodia, and Western Sahara, the low threat conditions limited employment of artillery to liaison, communications and non-lethal targeting roles only.

Despite heightening ground threat situations in Rwanda, Somalia and Former Yugoslavia, Australian peacekeeping missions sought to maintain low profile and overt neutrality to offset any potential 'threat to force'. Subsequent regional peacekeeping deployments into Bougainville and later into the Solomon Islands continued this approach.

Consequently, Australian land force doctrine developed the option of employing artillery elements in civil-military cooperation roles, particularly in evacuation scenarios, exploiting the Gunners' intrinsic characteristics as well-equipped combat soldiers, organised for command, liaison & observation tasks in all threat settings.

Recent intervention operations: 1999-now

All recent RAA employment reflects an ongoing prominence of artillery command, liaison, observation and targeting functions. RAA staff and commanders provided individual or staff cell contributions to all Australian deployed

headquarters, and individual third-country embedded staff into larger coalition headquarters in all active theatres – Timor-Leste, Iraq, Afghanistan and the wider Middle East. Application of artillery principles learned in lethal fires engagements were redeveloped to provide clear and effective appreciations of employment of non-lethal effects such as Information Operations and public information, and even the calculated apportionment of development assistance.

Timor 1999-2012

In support to UN peacekeeping operations in Timor, the scale of the mission, prevailing low threat and low lethality induced the re-role of artillery sub-units into infantry and other non-artillery roles, reprising similar RAA employment in earlier conflicts. Initially however, while threat was uncertain, options were retained for deployment of field artillery to provide close support from firebases in familiar counter-insurgency roles, operating in austere, disaggregated and tropical settings. Meanwhile, RAA command, liaison and observation groups performed important civil-military roles, coordinating with humanitarian and development assistance.

Iraq 2003-2011

RAA elements were not involved in the initial ground invasion and occupation of Iraq in 2003, although elements of 16th Air Defence Regiment provided an AD point defence role aboard HMAS *Kanimbla* from May 2003, and RAA Ground Liaison Officers (GLOs) deployed with RAAF assets conducting air operations as part of *Operation Falconer*.

RAA elements were deployed later as part of the Al Muthanna Task Group, by which time security threats from insurgent direct fire, improvised explosive devices (IEDs) and indirect fire were low in incidence, although potentially highly lethal. From 2005, successive rotations of the Australian task group provided security initially to their partner Japanese reconstruction units, and later also to co-located Australian Army Training Team-Iraq units.

Subsequently, the Australian commitment transitioned to a more wide-ranging security employment, as the mission expanded in 2006 to an operational overwatch role, in support of fledgling Iraqi security control of the provinces of Al Muthanna and, eventually, Dhi Qar. In addition to integral Joint Offensive Support

Team (JOST)⁸ and JOSCC targeting, liaison and observation functions furnished throughout the deployment, RAA-operated UAVs provided organic ISR to the restructured, retitled Overwatch Battle Group (West).

In 2006, RAA locating assets were added to provide a rapidly-introduced counter-rocket, artillery & mortar (C-RAM) capability. The composite C-RAM system incorporated locating radars, cueing base force protection measures as well as ISR responses. Later, a British self-propelled howitzer was incorporated to provide a CB response capability, which was demonstrated on several locations. These operations exemplified the increasing norm of deploying multi-disciplinary artillery batteries, capable of coordinating coalition fires and effects in support of Australian forces.

Afghanistan 2005-2014

After the initial Special Operations-led commitments in 2001-2, Australian military intervention into Afghanistan in Regional Command-South (RC-S) increased and diversified from 2005, deploying into a moderate threat setting of sporadic indirect fire, but escalating ground threat in terms of direct fire and IEDs. Although Australia did not deploy organic artillery fire assets with successive reconstruction and mentoring units, the provision of supporting JOSTs and a Joint Fires & Effects Coordination Cell (JFECC)⁹ was imperative to Australian targeting and access to reinforcing coalition fires and effects. Interoperability with NATO International Stabilisation Assistance Force (ISAF) and US forces became essential; and Australian Special Operations and manoeuvre elements in both Uruzgan province and beyond relied on US and NATO artillery, mortar, attack aviation and CAS throughout the campaign.

RAA-operated tactical UAVs combined with RAAF and coalition counterpart assets to provide multi-layered aerial ISR. Fusion of this ISR product from manned and unmanned platforms through the JFECC to lead and inform tactical manoeuvre became standard practice,

⁸ JOST replaced the more generic and historic term of *Forward Observer* party, reflecting a regularly wider role of application of and access to non-artillery fire support. The term JOST was itself later replaced to the simpler *Joint Fires Team* (JFT).

⁹ The *Joint Fires & Effects Coordination Cell* term superseded the *Joint Offensive Support Coordination Centre*.

while Joint Fires Observers (JFOs)¹⁰ and RAA, Special Operations and RAAF Joint Terminal Attack Controllers (JTACs)¹¹ coordinated joint fires and effects for both defensive and patrol operations.

The indirect fire threat heightened as Australia's commitment into RC-S continued. This precipitated the deployment of a C-RAM system manned by re-trained Gunners from 16th Air Defence Regiment, and later, weapon locating assets to protect the Coalition base at Tarin Kowt. These systems were integrated through the JFECC, cueing force protection and ISR response assets.

Separately, a troop of RAA field artillery was also embedded with British RA/RHA field batteries in support of British operations in neighbouring Helmand province, where the ground and indirect threat was markedly higher. The tempo and intensity of artillery fire – both indirectly supporting Coalition manoeuvre forces, and directly in local defence of the troop's own firebases – were considerable, regularly requiring significant augmentation by joint fires from helicopter attack aviation and CAS.

Within the ISAF mentoring mission, the RAA deployed several joint fires & effects (JFE) training teams, including RAA personnel within the Army's combat support Observation, Mentoring and Liaison Teams (OMLTs), training individual Afghan National Army (ANA) field artillery batteries to combat readiness. Additionally, the Artillery Training Team – Kabul was responsible for wider artillery training within the ANA's Training Command, while other RAA training elements were embedded within the ANA Officer Academy and elsewhere.

Contemporary artillery and the coalition joint fires battlespace

The contemporary joint fires battlespace continues to evolve, presenting new considerations for modern artillery employment. Developments in long range precision surface fires and multi-domain fires exploiting the electro-magnetic spectrum continue, matched by a revitalisation of ground-based air and missile

defence, and the enduring importance of joint fires and effects planning, coordination and advice.

Iraq 2016-18

Recent Coalition operations in Iraq from 2016 have faced considerably increased threat in terms of scale, intensity and lethality from Islamic State militants. In providing modern coalition joint fires and enablers to the beleaguered Iraqi Security Forces, *Operation Inherent Resolve* forces have provided highly effective ISR and targeting through coalition JTACs and artillery observer mentors. These elements coordinated overwhelming quantities of lethal and pervasive joint fires – both PGMs as well as conventional munitions – delivered from US and NATO field artillery guns, rockets and mortars, in the form of long range precision fires and artillery raids from prepared firebases.

Meanwhile, coalition joint fires and effects mentors aided Iraqi Army artillery in providing close support to Iraqi manoeuvre forces in the advance and attack. Coalition Strike Cells coordinated all coalition joint fires on behalf of Iraqi forces, as the Iraqis prepared to develop their own fledgling theatre-level joint fires coordination. Within Coalition headquarters at component and combined joint task force levels, RAA personnel were embedded as part of targeting and joint fires and effects coordination.

Today's joint fires battlespace

Contemporary artillery employment characteristics include: full coalition integration; inherent expeditionary capability; high-technology, high-lethality adversaries; global political interest in tactical outcomes; and full spectrum conflict short of nuclear exchange. Modern joint fires now comprise surface-surface missiles and rockets, 'tube' artillery, mortars, naval gunfire, attack aviation, and airborne strike (CAS and Air Interdiction) from manned aircraft and UAVs. Coalition interoperability in coordination offers unprecedented joint fires access.

Artillery command, liaison & observation groups¹² still provide the joint fires 'brokerage' to manoeuvre arm commanders. Provision of JTACs and JFOs remain integral conduits for vital reach-back & coordination for joint fires and effects – including non-lethal effects such as information operations, electronic warfare and

¹⁰ The term *Forward Observer* was altered to *Joint Fires Observer* to reflect the growth in accessing joint fires.

¹¹ The term *Forward Air Controller* was altered to *Joint Tactical Attack Controller* to reflect the ability to terminally control all forms of joint fires.

¹² Also known as *Tactical* or *Tac Groups*.

even cyber – at increasingly lower tactical levels.

Dramatic improvements in intelligence fusion in theatres with unchallenged airspace have permitted uncontested, high-quality targeting of irregular adversaries for neutralisation or destruction. However, detection is often possible when discrimination is not, and lethal engagement remains constrained under rules of engagement. Contemporary conflict between other belligerents – such as in Ukraine – demonstrate that target development is less simple against peer adversaries in hotly-contested domains, especially air and the electro-magnetic spectrum.

Surface artillery's capacity to provide intimate fire support is enhanced through PGM. PGM shells and rockets offer an increasing repertoire of reliable precision joint fires, when platforms for air-delivered munitions are unable to fly, or acquire targets effectively. However, parallel ongoing advances in artillery technology, and the persistent application of survey, meteorological, calibration & ordnance corrections, continue to improve conventional artillery's predicted fire accuracy and precision. All standard mission types – blinding, obscuration, illumination, suppression, destruction, neutralisation and even direct fire – are still employed consistently. Deliberate and quick fireplanning remain essential parts of the artillery skillset.

Theatre-level precision for location and orientation via satellite geo-location is now prevalent, but the growing threat of electro-magnetic signal interference is creating a fast-growing need for autonomous geo-location & orientation systems. Accurate meteorological data remains essential, and though increasingly provided automatically, is still difficult to disseminate time-sensitively.

While some RAA Surveillance & Target Acquisition (STA) systems including ground sensors, surveillance radars and acoustic sensing have not recently deployed, these systems have all been employed by coalition partners and other belligerents in recent conflicts. Further systemic refinements to C-RAM will fully integrate the initiation of multiple responses – force protection measures and ISR launch, as well as lethal CB response. This reflects recent irregular adversary use of indiscriminate, disparate indirect fire from highly mobile, low-detectability platforms.

The Air OP is now embodied in the airborne ISR capability. UAVs feed product directly to

coalition fires strike cells. Ubiquitous, high trust communications networks permit commensurate levels of centralised fusion and allocation of scarce joint fires assets, across vast areas of operation.

AAAD has evolved into Ground-based Air & Missile Defence (GBAMD), capable of being fully synchronised into integrated air defence systems at multiple levels. The projected re-introduction of stand-off GBAMD in the ADF will complement the RAA's legacy low-level air defence capability. Recent operations with no or minimal air threat has lowered wider military perceptions of the requirement for GBAMD; however, an intensifying threat from enemy UAVs, and maturing technological solutions to provide effective C-RAM is correcting this misperception.

The value of artillery to coastal defence is again being recognised. The proposed acquisition of long-range surface-to-surface rocket systems primarily for land deep fires has utility in anti-access anti-denial (A2AD) in the maritime environment. When linked with advances in acquisition, lethality, range and operational and tactical mobility these systems will provide highly effective stand-off artillery in the maritime environment.

The RAA of today

Currently, the RAA comprises seven units and a number of smaller, enabling force elements. Organisationally, the RAA consists of three field artillery regiments – one per combat brigade – for close support; one STA regiment responsible (primarily) to provide JFE-led ISR to Army including Unmanned Aerial Systems (UAS);¹³ and one composite air-land regiment responsible to provide Army's air defence capability. The latter two regiments are divisional-level assets, grouped as part of 6th Combat Support Brigade. Within the 2nd Division, the RAA's mortar-based reserve regiment provides JFE command & control, JFOs, and 81mm fires support to the various 2nd Division battlegroups. The School of Artillery continues to conduct artillery and JFE training for all RAA trades, as well as individual training for infantry mortars.

The RAA also provides standing JFE staff functions to the wider Army and ADF, to

¹³ *Unmanned Aerial System* (UAS) describes the entire capability system (airframes, ground control station, Command & Control nodes, observation and advice elements), whereas the term UAV describes the airframes specifically.

provide artillery and JFE advice to commanders at the joint operational level. These include the Divisional JFECC within HQ 1st Division / Deployable Joint Force Headquarters; the Supported Arms Coordination Centre within Headquarters Amphibious Task Group (RAN); and the Directorate of Army Air Support within RAAF Air Command. These staffs are supported by various embedded RAA force elements such as JTAC Troop, Ground Liaison Troop and 106th Battery (Amphibious). Additionally, the RAA contributes staff into higher joint headquarters, such as the Effects Cell within Headquarters Joint Operations Command.

Along with a number of smaller individual elements embedded across the ADF, the RAA collectively provides the land domain element of the ADF's joint fires and effects capability system. Several key changes in progress, or due to commence in the near future, will further enhance and evolve these capabilities. The RAA is currently well-placed to incorporate these changes, and adapt effectively to the future battlespace and warfighting environment.

Conclusion

Tenets of artillery employment

The history of Australian artillery employment reveals a highly varied application of offensive support and coordination. Moreover, it demonstrates that all branches of artillery – surface-surface field artillery, STA, GBAMD, airspace coordination, targeting and strike coordination – and accompanying artillery advice to manoeuvre commanders are all still relevant contributors to joint battlespace functions. Conventional artillery remains integral to contemporary conflict in all its forms, while the unique character of each conflict and national strategic commitment drives artillery's varied manifestation, employment and prominence in each battlespace.

The 'gunnery problem' dilemmas arising from technological deficiencies during World War One are now able to be resolved, founded on ongoing application of underlying principles of ballistics, kinetics and chemistry. Nonetheless, several aspects of artillery employment remain consistent.

The principle of stand-off and out-ranging opponents has not changed – distances are simply greater, and now encompasses stand-off in virtual (cyber and electro-magnetic) as well as physical domains.

Effective target engagement is fundamental, and a function of both discrimination and detection.

Logistic supply considerations remain vital to artillery employment, across extended lines of operation, scale, dispersal, duration, and rates of fire.

Airspace coordination is more important than ever, with UAVs and attack, aero-medical and utility aviation congesting airspace. The land manoeuvre commander still unequivocally owns the airspace directly above the close fight, and requires a dedicated manager.

Other aspects of joint fires coordination have merely evolved in their sophistication of employment.

Conduct of tactical ISR now clearly divides into support to intelligence preparation of the battlespace; targeting development; current operations; and after-action assessment.

Regardless of changing nomenclature and growth in complexity, joint fires coordination remains the domain of artillery, with its inherent joint fires pedigree, expertise, integral communications & organisation. This domain must be shared in concert with Air and Aviation as fellow contributors.

The employment of artillery remains a fundamental component in the application of land forces, and in the combining of firepower with manoeuvre. Artillery commanders at all levels must be highly flexible and readily adaptable in its employment, and anticipate artillery's latent potential for widespread application in all operational theatres, with commensurate rates of expenditure.



This Anzac Day will look very different. But the reasons why we remember remain the same

By His Excellency General the Honourable David Hurley AC DSC (Retd) is the Governor-General of the Commonwealth of Australia.

ABC Online 25 April 2020, Posted at 5:00 am

Throughout their history, the men and women of the Australian Defence Force have had a role to assist our own communities, and those of our neighbours, in times of natural disasters.

During the Spanish Flu pandemic in 1918-19 the Pacific nations of Fiji, Tonga and Samoa were very badly afflicted.

In late 1919, in the Royal Australian Navy's first overseas humanitarian operation, HMAS Encounter, provided medical and burial support to the overstretched health services of these countries.

When asked by their captain to volunteer to go ashore in Samoa to assist, with the certain prospect of being left ashore while the Encounter steamed to other ports, all the officers and the vast majority of the sailors stepped forward.

One hundred years on, in the same spirit and in an extraordinary scene for Australians today, HMAS Choules participated in the evacuation of people from the beach at Mallacoota during the recent bushfire season.

Both these incidents were marked by a quickness to respond and a willingness to accept personal risk. These are characteristics of our defence force and its people that have been built over 100 years of service to our nation. They have their roots in the legacy of Gallipoli and the Western Front and have sustained servicemen and women over decades of service. These characteristics are part of what we acknowledge on Anzac Day.

In 2020, a very different commemoration

This Anzac Day will be different to any in recent memory. I recall that in 1972, as a cadet in my first year at Duntroon, I attended my first dawn service at the Australian War Memorial.

The attendance was small, the lack of public support reflecting, in part, opposition to the war in Vietnam, and all who attended fitted into the Commemorative Area and the surrounding cloisters of the Roll of Honour.

This year we will recreate that scene as we are compelled to assemble in small numbers. But this time we will know that in thousands of homes around Australia, families will be gathering in support.

Hopefully, after watching the national service, many Australians will gather in their driveways and on their balconies to support initiatives such as the RSL's campaign, Light Up the Dawn. Importantly, this revised format provides an opportunity for all of us to reflect with others in our lives.

I encourage all Australians to discuss why Anzac Day has become so important to them and why the legacy of the first Anzacs has had such a profound effect on our national character and outlook.

Anzac spirit takes many forms

It will also be an opportunity to revisit the service of past family members, especially those of the First World War, which many Australians discovered through research during the recent Centenary of Service commemorative period.

If a legacy is to have any value, it must shape the way we think and behave. For me, the Anzac legacy says that we are a people who, in adverse situations, are strong, look out for each other and are prepared to put others before ourselves.

These characteristics were evident during this year's bushfire season and must help define the way we approach our responses to the coronavirus pandemic. Like our current and past defence members, they sustain us during a difficult period.

A gathering in spirit can be just as powerful as a physical gathering this Anzac Day. And on Anzac Day we remember for a reason. We are proud of our Anzac forebears. Let us make them proud of us. I look forward to hearing many stories of how families observed the day and how reflecting on our past will help us today. Lest We Forget.

Routine Orders

MEMORIAL WALK

Kevin Browning

The Royal Australian Artillery Historical Company is seeking your assistance to complete the Memorial Walk at North Fort. Consisting of five monuments and a paved path the walkway is a place where visitors can reflect on the service given by the members of the Defence force and their families throughout our nations history. The path follows an old track that weaves through the flora of the headland and offers views over the entrance to Sydney harbour. Many troops moving overseas would have sailed past the headland on their way to foreign shores.



The Walkway contains five memorials commemorating the Colonial Wars, World War I, World War II, Post 1955 Conflicts and Peacekeeping. Each memorial will contain story and photo plaques that tell the story conflicts. Funding for the project commenced with a \$10,000 grant from the Department of Veterans' Affairs. Through the donation of an engraved paver we have raised a further \$225,000 but we are still short of completing the project.

Donations of engraved pavers, donations are tax deductible, has slowed in the past year and we require another 300 donations to achieve our goal. Presently we have over 3500 pavers and 58 centre piece pavers.

The centre piece pavers have been generally donated by Associations, units and organisations such as RSL Clubs. They cost \$1500 and provide the organisation members a reduction in member

contributions for general pavers. The general paver costs \$70 for one, \$130 for two and \$190 for three.

Many families have contributed to the project and it is very interesting to hear their stories and reflect on how much many families have contributed. Allied servicemen and families have also supported the work. Service from the Imperial troops to the present conflicts have been represented.



If your organisation, contingent or individually you would like to contribute please contact us. An Order Form is enclosed and it contains our contact details. Once we have the fund to complete the monuments a dedication ceremony will be organized to formally recognize the Memorial Walkway. It is one of the larger memorials in Australia in terms of names recorded and certainly in one of the most scenic locations.

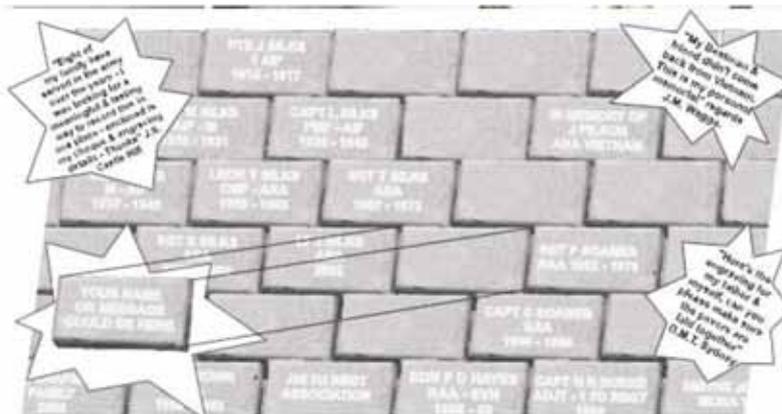


The volunteers of the RAAHC have constructed the walkway as a memorial to all servicemen and their families. Please assist us to complete the memorials.



Be part of
AUSTRALIA'S MEMORIAL WALK
at Historic North Fort, North Head, Manly

For a tax deductible donation of \$70.00 your name or message will be engraved into a paver which will then be laid permanently in our walkway which features five memorials dedicated to the men and women of the armed forces of Australia, her allies, and people who served in the civilian services, as well as volunteer organisations from Australia's colonial past through to the present. The five memorials are for: Colonial Wars, World War I, World War II, Post 1945 Conflicts, and Peace Keeping Operations.



To order your paver please complete and return the order form

Become a Major Sponsor

For \$1,500.00 your unit badge, club emblem or organisation logo will be engraved onto a centre piece paver measuring 460mm x 460mm.

Phone **0418 412 354** for further information regarding major sponsorship package.





Application for Ordinary Membership or Renewal of Membership of the Royal Australian Artillery Historical Company (RAAHC)

<p>Honorary Secretary RAAHC PO Box 171 Cremorne Junction NSW 2090</p>	<p>Membership Enquiries Phone: 02 9908 4618 Email: membership@artilleryhistory.org</p>
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You can complete the Renewal or Application via the RAAHC Website www.artilleryhistory.org to save you time and pay via secure credit card/PayPal.

I apply to become a Member/Renew my Membership* of the Royal Australian Artillery Historical Company (RAAHC) and agree, subject to my admission, to abide by the Company's Constitution and its By-Laws. *(for membership renewal, only complete name and payment information unless contact details have changed; a receipt will be emailed to you).

Membership Rates As applicable, subscriptions are due for renewal on 1 July each year	
Ordinary Membership – One Year	\$30.00
OR Ordinary Membership – Five Years	\$120.00
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Rank/Title: **Surname:**

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Payment Options

1. Bank Transfers are the least cost to us to process, please use BSB 032 096 A/c # 179215. Include description "(Surname-Initials) Subs"; or
 2. Please make cheques payable to the RAAHC.
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Note: 1. The RAAHC is a not-for profit organisation and is registered as a Deductible Gift Recipient with the Australian Tax Office. Donations over \$2.00 are Tax Deductible. Please consider making a donation to help us preserve the heritage and history of Australian Artillery.

Note: 2. The RAAHC relies on Volunteers to assist with our work. Please see our Website www.artilleryhistory.org

RAAHC

NEEDS YOUR SUPPORT



The Royal Australian Artillery Historical Company needs Your Help to Support the Preservation and Promotion of Artillery History and Heritage and the Management of the Regiments Collection Nationally



How Much Does It Cost?

\$30.00 (1 year), or \$120 (5 years)

All Gunners and friends of the Regiment are invited to join



What You Get In Return?

RAA Liaison Letter and Cannonball twice annually

Free access to the Artillery Museum (temporarily closed) and most other museums in the Australian Army Museum network

Use of the Artillery Museum's library resources

Personal satisfaction in supporting the preservation of Artillery heritage



How Does The Company Benefit?

They can add your weight to the membership numbers when seeking grants and other assistance from public and non-public sources

Your subscription assists with ongoing administration costs



How Do You Join?

A membership form can be found in this publication

Submit a form and start supporting a very worthwhile cause



RAAHC THANKS YOU FOR YOUR SUPPORT