

The Royal Australian Artillery **LIAISON LETTER**

Spring Edition 2009



The Official Journal of the Royal Regiment of Australian Artillery
Incorporating the Australian Gunner Magazine

First Published in 1948



RAA LIAISON LETTER

Spring Edition 2009

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Next Edition Contribution Deadline

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Editors Comment



Introduction

Welcome to another Liaison Letter. I thank all those people who have taken the time and made the effort to contribute. In this edition there are a wide range of articles, reports and papers which should interest all readers. These include a mid tour report from 105 Troop RA/RAA as well as an article by Captain Andrew Ludlow on his experiences as a forward observer in Afghanistan. These are supported by some high quality professional papers and letters to the editor that should form the basis for thought provoking discussion and even debate.

Feedback

I received some observations on my recent editors comments. The first was that I was turning into a grumpy old major! For those who know me this claim would come as no great surprise - I have been grumpy (even passionate) about one thing or another pretty well since I joined the Army in 1979. Another observation was that I am too traditional in my views. I guess this was a polite way of saying I am stuck in the past and not open to the changes occurring in the Adaptive Army. I am very open to change and have embraced it throughout my career and where appropriate have assisted with its implementation. I would argue you can only plan and implement meaningful and sensible change if you reflect on what has transpired previously. In other words ignore history at your peril. In my view it is our traditions and heritage that set us apart from other professions. It was these words of 'advice' combined with a recent cost saving initiative at the School of Artillery that gave me reason to pause and think about the 'new' Army.

Cost Savings

The School of Artillery recently placed a moratorium on the purchase of printing paper for two months because they have a short fall of funds in their administration budget. Please do not get me wrong I am all for not wasting resources. In fact, it annoys me immensely to see waste. My point is,

what message does this send to people (including the public) about preparing for operations. We cannot afford paper but we can waste millions of dollars in other areas and despite lots of huffing and puffing very little seems to change at the coal face!

We have all heard the old adage 'If you look after cents the dollars will look after themselves'. I appreciate that this probably applies in family situations but one has to question if it really works in a unique organisation like the Army. I think it is unfortunate that we are so ineffective at influencing Macro change and making the required real savings, we have to console ourselves with Micro tinkering.

In my view one of the underlying pillars of this problem is the inflexible 'buckets' of gold concept that is the basis on which the Department of Defence conducts business. The other problem is one which you only have to pick up a newspaper to be reminded of, and that is the waste of funds at the Macro level. It remains to be seen what long term benefits will be afforded by the creation of Forces Command. Unless our leadership has the courage and political will to make real change we will have to continue to content ourselves with saving reams of printing paper!

Exchange IG

Along the same theme of short sighted cost cutting I find it extraordinary the recent decision to cancel the exchange instructor in gunnery position with the Royal Artillery. It is even more difficult to fathom when it has been done at the very moment in our history that the Regiment has had the opportunity for the first time since the Vietnam War to send an 'in role' gunline element on operations with the Royal Artillery. To me the logic does not add up! Whilst not being privy to the rationale behind the decision for cancelling the exchange I have no doubt it was based on funding.

Proposed Uniform Changes

Continuing the theme of false economies a recent story I have heard ties in with my views on the need to preserve our traditions and our unique identity both as an Army and Regiment. I understand at the recent RSM-Army conference a topic for discussion was uniforms. In itself this is not surprising, what is, if my feedback is accurate, are some of the ideas being considered in the name of saving money. These include removing polyesters as a form of dress of the day - I can just see Army Headquarters

full of DPCU wearing desk bound staff officers. We have come a long way since the Commander Training Command in the late 1990s issued a directive that polyesters was the normal dress of the day and that DPCU was only to be worn when conducting field training. Older Gunners will remember the School of Artillery requirement to read the daily program as the dress changed based on the daily instruction. Some of the rationale for being directed to change uniforms was funding (so I guess nothing much has changed) in that polyesters were purchased using uniform maintenance allowance by individuals, whilst DPCU were exchanged one for one at public expense. I also recall for most of my Regimental service in the 1980s that it was by exception that officers and warrant officers did not wear polyesters to work. To address the concerns immediately we just have to revert back to wearing polyesters instead of DPCU as the norm or heaven forbid take a reduction in uniform maintenance allowance. The question I have is this proposal really about saving money or have we as an Army just become lazy!

Further uniform points discussed included removing Corps lanyards, berets (except for a select few) but the one that really caught my attention was the plan to do away with our uniquely Australian pattern DPCU and replace them with a cheaper computer designed pattern based on the US Army pattern. Where will it stop!!!!!! If we continue on this slippery slope we are at real risk of going down the Canadian Defence Force experiment of all becoming one bland looking organisation.

RSM Training

Another Army trend which has given me reason to pause and think is the evolution of senior soldier training, especially for Regimental Sergeant Majors. It seems to me to some extent we are trying to turn senior soldiers into officers. An example of this is the attendance of selected Regimental Sergeant Majors on portions of the Command and Staff College course. Whilst I can appreciate this development has some merit, I feel the counter is we are breeding Regimental Sergeant Majors who are becoming focused on what has traditionally been the domain of officers. In my view this creates the very real possibility that they will start to lose touch with their traditional role of representing the 'digger' and all the implied responsibilities that this brings with it. A by product of this situation is that you have senior soldiers who are more qualified than many majors, that is, they have attended command and staff college!

Conclusion

I again would like to thank everyone who has contributed to make this edition as interesting and varied as I believe readers will find it. I am sure everyone will find more than enough to spark their interest. I encourage everyone to keep writing and recording their experiences, thoughts, views and opinions and most importantly I implore everyone to share these with the readers of the Liaison Letter.



D.T. (Terry) BRENNAN

Major
Editor

Telephone: 07 4651 0939 (h)

Mobile: 0419 179 974

Email: stratford01@bigpond.com or

terry.brennan@defence.gov.au

Postal: 'Stratford' BLACKALL QLD 4472

<http://www.defence.gov.au/army/RRAA>

<http://intranet.defence.gov.au/armyweb/Sites/RRAA/>

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Letters to the Editor

Dynamic Targeting Draws Response

I read with interest Captain Peter Watkins' recent article on 'Dynamic Targeting' (Autumn Edition, 2009). Captain Watkins touched on a couple of interesting aspects on the way contemporary warfighting is being shaped and conducted. The author highlighted an inherent frustration with how RAAF lexicon, platforms and procedures appear to be imposing their 'will' more pervasively on the land battle, but with seeming little appreciation or adeptness in meeting the ground tactical commander's needs. In light of this, Captain Watkins rightly identifies that it is the 'gunner' who is well positioned, educated and trained to deconflict, synthesise and coordinate access to a greater array of (joint) effects within the contemporary and future battlespace. As such, the enclosed article from 20th Surveillance and Target Acquisition Regiment's recently returned UAV Group from Operation Slipper in Afghanistan, illustrates but one aspect of how Gunners are gripping up an ever-increasing complex and technically demanding environment [Editor: The article is published in this Liaison Letter].

With that said, I think there is more to explore and contemplate from Captain Watkins' article than simply furnishing operational anecdotes of the great work done by all Gunners abroad. Rather, since assuming command at 20th Surveillance and Target Acquisition Regiment it has been interesting to observe the 'competitive tension' between both Services within the context of air-land integration issues, particularly with regard to two prevailing trends/issues: the impact of the increasing prevalence of air vehicle (AV) automation within contemporary airspace and the real and/or perceived diminishing requirement for our RAAF to organically achieve air superiority within the assigned battlespace.

Firstly, the new and exciting innovative world of UAVs with the accompanying preponderance of such technology, poses a significant threat to the utility of conventional air-ground air force

capabilities. Further to this, when the ADF gets around to examining the arming of tactical UAVs, I'm quite sure we will see vigorous debate on how this function and capability ought to be managed between the Services. In fact, Captain Watkins' article only scratched the surface on the thorny issue of 'authorised observation' for targets that were once ostensibly within the land tactical realm, but due to the strategic reach provided by today's communications and the versatility of the UAV platform, such decisions may well be reserved for our senior and joint leadership who might otherwise be far removed from the designated battlespace.

My recent participation at a UAS International Operators Group (IOG) conference revealed that our ABCA partners are wrestling with this same dilemma with mixed results. What was of further interest was the majority view held by the aviation community of the increasing pre-dominance of UAVs and the impact to the role of the pilot - arguably the *raison detre* for the air force as an organisation. Put simply, Army-land operators are increasingly playing in a space that was inconceivable to the broader aviation community a decade or so ago.

Secondly, recent operational theatres point to a battlespace already set for ADF/coalition forces with air superiority 'guaranteed' for the majority share of the campaign. In turn, this has driven respective air forces to apply greater attention to the land tactical environment by employing assets that were previously held to address strategic and operational objectives/effects. Greater access to such potent capabilities for our land tactical units is clearly advantageous, but it is worrisome that the manner in which these joint assets are employed is largely governed by the 'owner' with little appreciation of how land operations are currently orchestrated. A cynic might be so bold as to offer that this recent phenomena is simply a manifestation of our air forces searching for relevance in the contemporary fight otherwise, how else do you explain the recent vernacular called 'time sensitive targeting (TST)'? To Gunners, TST is 'Targeting 1-0-1' to the four-step process.

So in all of this, I can appreciate the probable confusion experienced by Captain Watkins when he set out to write his short paper. The air-land integration dynamic we Gunners find ourselves in is working in two different directions and at both ends of the gunnery problem. On one hand, we have surveillance and target acquisition gunners

increasingly engaged in the 'circle of competence' that was once the sole preserve of the aviation community and on the other hand, we have our air force compatriots becoming increasingly committed to application of effects at the tactical level which sits well inside what a JOST/JFECC should handle.

In light of this, it would seem timely (even fortuitous?) that Army has taken measures to secure this future to such complex matters, with the formation of the Combat Support and ISTAR Group at Forces Command. With all RAA units grouped under this structure for technical control (TECHCON) purposes there is a great opportunity for the RAA to shape debate and lead Army with a clear and comprehensive approach to coordinating and synchronising current and future joint effects across OS, STA and GBAD domains. With some tweaking of doctrine and training, I reckon the RAA will be well placed to deliver the right outcome for all land tactical forces into the future.

Ubique

Lieutenant Colonel Dean Pearce
Commanding Officer
20th Surveillance & Target Acquisition Regiment

Editor: I agree whole heartedly with Lieutenant Colonel Pearce. His letter also places a spotlight on the age old chestnut regarding interoperability between Army and Air Force and the claim that those 'non green skinned' personnel in the air do not understand or appreciate what those on the ground are doing or require. Those of us who were serving in the 1980s will recall the arguments for and against why the battlefield helicopter had to be transferred from Air Force to Army. On reflection I have to ask whether the support provided by Army in 2009 is any more operationally focused than that provided by Air Force when I worked with them in the mid 1980s. Whilst the battlefield helicopter is not directly related to the points raised by Lieutenant Colonel Pearce it highlights that friction still appears to exist today between the two services. Personally I think we have come a long way in breaking down the negative cultural attitude Army had towards Air Force which unfortunately was instilled from day one in the Army. We need to be a little flexible and smart in our thinking when addressing these interoperability concerns. We should remember it is not just us who question the conduct and modus operandi of others eg even in Army some did not, and probably still do not, agree with the UAV capability residing within the RAA.

'Where is the King'

I congratulate you on another informative RAA Liaison Letter. I read with interest the Professional Papers; in particular, the article submitted by Lieutenant Colonel Andrew Garrard entitled 'Where is the King?'

The article highlights some concerns held amongst many members of the RAA (myself included). However, having returned from Operation Slipper in April 2008 as the Battery Commander of Reconstruction Task Force Three (RTF 3), I would like to offer an alternative perspective on the Afghanistan case study presented.

The author states the following within his article:

- 'encircled by a Taliban force estimated to be in excess of 300' (p. 57). One should be cautious of the inflation of Taliban numbers associated with contacts. RTF 3 experiences encountered reports regularly of 200-300 Taliban; subsequent investigation revealed that actual numbers were closer to 20. At no time in any SITREP during the contact was the stated enemy force reported as 300. Subsequent intelligence reporting estimate the force to have been between 40-50 Taliban fighters.
- 'the small Australian force made best use of available coverand established themselves in all round defence' (p. 57). When the platoon patrol was contacted, the majority of the company's combat power (Light Armoured Vehicle [LAV] and Bushmaster) were in overwatch positions out of the 'green zone' and were subsequently able to bring accurate fire into the target area when they had manoeuvred into their support by fire positions. Other than the Special Operations Task Group, the RTF Security Task group arguably had the strongest combat power in southern Afghanistan. Contacts, prior to and after, reinforced this fact and proved that once in a gunfight with Australian forces the Taliban were overmatched. All round defence was a brief prelim to aggressive clear and destroy actions.
- 'FO's urgent request for artillery fire...the Dutch gun...remained silent' (p. 57). I agree that the call for fire (CFF) was received; however the reason that the Dutch SP (PzH) gun remained silent is incorrect. The case study fails to outline that, upon contact, Dutch F-16's refuelling in the vicinity of the contact site immediately checked in with the joint terminal air controllers (JTACs) -

the first 500lb suppression mission occurred within minutes of the report of contact. Coalition fire support and airspace coordination measures are more to blame than the Dutch Battery Commander denying the mission due to Dutch rules of engagement (ROE). Of note, for the duration of the contact Dutch and US fighters remained overhead, UAV was in support, and apache helicopter (AH64) stationed throughout. The Dutch PzH provided H&I (illumination) to the Task Force during the reorganisation phase of the contact. Furthermore, the notion that artillery covering fire can be instantly provided to troops in contact inside Afghan villages is a failure to appreciate the complexities of the Afghanistan battle space.

- 'Taliban were able to direct accurate and concentrated small arms fire resulting in several casualties' (p. 57). There were no Australian casualties during the contact.
- 'AH-64 ...engage one point target at a time...not effectively suppress or neutralise' (p. 58). There is no doubt in my mind that the arrival of the AH64 on station represented a turning point in the contact. Review of the cockpit tapes upon return from the contact clearly identified the neutralisation of numerous Taliban fighters. The AH64 was commonly viewed as the offensive support (OS) weapon of choice when fighting in the green zone and the observers appreciated all of the available support delivered by the Dutch aviators. This was highlighted in my previous published article - 'Bringing on the Rain'. I agree that indirect fire systems provide the best area neutralisation, however in the context of the case study illustrated this may not have been the only solution.
- 'Without artillery close covering fire did not risk an attempt to exploit little option other than to withdraw' (p. 58). Platoons pushed forward throughout the contact. Fading light, an unwillingness to remain in the green zone through the night, and the withdrawal of the key Taliban leader coordinating the contact were the key contributing factors into why the company conducted reorganisation to the west of the contact location in the Dascht. This reorganisation was supported by an indirect H&I fire plan supported by the Dutch.

Rather than the case study presented the authors point of view may have been better enhanced by comparing how 'The King' is performing in Helmand

province, or analysed contacts the RTF experienced in February and March 2008, whereby accurate Danger Close mortar fire was engaged by Australian forces within minutes of contact. This, combined with the heavy hitting LAVs, close air support (CAS) provided by US A-10 and AH64, PzH and higher intelligence support, meant that true combined arms operations were fully realised.

The author concludes his article with the statement 'outsourcing our artillery support has denied our troops the level of guaranteed organic fire support...(and) has consequently eroded the integrity and cohesiveness of the Australian combined arms team'. I can only comment from an RTF 3 perspective, however the feeling I gain from those manoeuvre commanders we are supporting indicates that relationships within the combined arms team have never been tighter. Go/No Go operational criteria for JTACs, a Commendation for Distinguished Service by an RAA observer, additional requests for RAA personnel on operational manning, are all key measures to the importance of the RAA within the combined arms team. There are many others.

Where I do agree with the author is that there is definitely a place for Australian guns in Afghanistan. Increasing patrol areas of responsibility, requirement for precision and greater target end effects are all excellent arguments for the inclusion of a gun troop or battery in the province. Only time will tell - I hope it is so.

The King is not dead, nor has he disappeared. It's just that the old King has abdicated and a new King sits on the throne. He is, however, a King still adept at prosecuting targets accurately, aggressively, and without fear nor favour. In the contemporary operating environment he is constrained by restrictions such as Collateral Damage Estimates and Rules of Engagement. Despite this, he remains responsible for the full spectrum of indirect fires - from precision to area suppression.

We are fighting a cunning enemy. Indirect fire systems may not always be the OS system of choice in the counter insurgency (COIN) fight, nor is immediate suppression the automatic response to the first shot in a contact. The new King's challenge is to effectively synchronise himself, within an amazing array of assets, to deliver the required effect, almost always within a coalition environment.

War amongst the people, as complex as this is, will demand the ability to discriminate. We, as Gunners, need to adapt to this complexity to ensure that the new King remains relevant - and a critical requirement to overall mission success.

Hotter than Hell

Major Adam Worsley

Editor: This letter by Major Worsley foreshadows the possible future of the RAA. What I mean by this is his reference to the new King and his description of himself as the Battery Commander of RTF 3. He was essentially the Battery Commander of what I understood years ago as a CLOG (Command, Liaison and Observation Group) and has now evolved into the Joint Fires and Effects Coordination Cell (JFECC) and the Joint Fires Team (JFT) with no dedicated organic direct support gunline. I have pointed out to whoever will listen that not a lot has 'really' changed in that we have always had this ability to separate the CLOG and gunline operationally under artillery tactical control terminology doctrine and that the structure we have had in barracks for at least the last 35 years was simply an administrative arrangement which worked and still does!

Greater Artillery Support Required

Lieutenant Colonel Andrew Garrad's article confirmed my arguments contained in letters to four national newspapers (not printed) arguing for more than token RAA representation in Afghanistan to ensure readily available quick organic fire support to our units and to lessen the large number of civilian casualties (co-lateral damage).

As you personally know I sent the same letter to the Minister for Defence with a copy to the CDF. You also have a copy of the predictable reply by the Minister's staff on his behalf.

Yes Andrew, 'Where is the King?' So intelligently and fervently embraced by Napoleon, Stalin, and many others; and lastly including The Commonwealth Division in Korea. Well done.

Yours sincerely

Brigadier John Salmon CBE (Retd)

Fire Support in Afghanistan 'Tokenism'

You will recall that four national dailies having thrice failed to publish my letter requesting/or suggesting adequate close field artillery support for our soldiers in Afghanistan, so I sent a copy to the Minister for Defence with an information copy to the Chief of the Defence Force. The Ministers staff have replied in the letter enclosed. Typical!

The restricted troop now attached to an RA Regiment is but 'Tokenism' and falls way short of an RAA regiment or battery in direct support of Australian units.

Having controlled (as an FOO) the 1st Commonwealth (72 x 25 pounders) artillery plus two platoons of USA 155s on Operation Fauna (and on other occasions) in Korea, the current lip-service to close fire support leaves me astounded!

Yours aye

Brigadier John Salmon CBE (Retd)

Editor: I could not agree more with the sentiments of Brigadier Salmon who incidentally was wounded in action during his time as a forward observer in Korea. The letters Brigadier Salmon refers to follow.

The letter written by
Brigadier J. Salmon to the
Minister for Defence and the
reply he received are printed on
the following pages.



25 March 2009

The Hon Joel Fitzgibbon, MP
Minister for Defence
3 Edward Street
Cessnock NSW 2325

Dear Minister

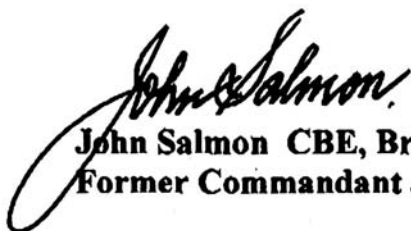
If we are considering additions to our forces in Afghanistan there is a very strong case for including field artillery. Besides the requirement for construction/civic action/ "heart and minds" complements, *close* fire support is essential if we are to minimise casualties to our own soldiers and civilians. In broad terms we should consider the separate characteristics of air support and artillery in their close fire support roles.

Normally, air support takes time to lay on, can have difficulty in identifying targets, even when precision guided weapons are available; it delivers its armament and then leaves. It is not continuous. It requires our troops to be at a significant safe distance and is greatly hampered, in many instances, in conditions of rain, fog and night. Aircraft have a greater range and flexibility than artillery.

Field artillery support in daytime is normally observed fire with accurate laser identified and pin pointed targets, within 3 minutes from fire requests to shell delivery – some of which may be guided. It is available 24 hours around the clock. Shells can be delivered close to our own troops and, with GPS now available, with only a very small margin for error. Ammunition supply can be an additional logistic problem but it has been minimised by the deployment of sufficient helicopters. Artillery can provide smoke screens for our own soldiers and both air and field guns are able to illuminate the battlefield at night.

Surely we owe our own and allied troops better, quicker and more intimate fire support which will minimise co-lateral damage and improve the safety of civilians in the target area.

Yours sincerely



John Salmon CBE, Brigadier (Retd)
Former Commandant Joint Services Staff College



THE OFFICE OF THE MINISTER FOR DEFENCE
THE HON JOEL FITZGIBBON MP

Brigadier John Salmon CBE (Retd)

28 APR 2009

Dear Brigadier Salmon

Thank you for your letter of 25 March 2009 to the Minister for Defence, the Hon Joel Fitzgibbon MP, and also copied to the Chief of the Defence Force, concerning artillery support for our military personnel in Afghanistan. The Minister has asked me to respond on his behalf.

You raise a number of very important points and I am pleased to confirm that your recommendation about fire support is quite consistent with the Defence Department's own view. While the Australian Defence Force has not committed any of its own artillery in Afghanistan, our troops in Oruzgan Province are very well supported by both artillery and close air support from our partners in the International Security Assistance Force.

In particular, the Netherland Task Force Uruzgan provides timely and accurate fire support to Australian troops, including our mentors with the Afghan National Army, through very capable PzH 2000 self propelled artillery. Australian ground forces patrol with Joint Fire Teams, to call in both air and ground fire support. Australia also provides a number of Royal Australian Artillery members who are fielded in the 'gun line' with United Kingdom Forces in Helmand Province.

Defence shares your concern about the choice of flexible fire support options to protect the civilian population in Afghanistan. Our forces operate under strict Rules of Engagement designed for their own protection, while at the same time ensuring that their actions are consistent with our obligations under Australian and international law in protecting civilian lives and property.

The Australian Defence Force regularly reviews its commitment to Afghanistan to ensure that our forces are appropriately configured for their assigned operations. I appreciate your ongoing interest in Defence matters and I trust this advice has been of assistance to you.

You may also care to visit the Department of Defence operational website at:

www.defence.gov.au/opEx/global/index.htm

News of the Australian Artillery commitment in Afghanistan is posted on this website from time to time.

Yours sincerely

A handwritten signature in black ink, appearing to be 'TYSON SARA', written over a circular scribble.

TYSON SARA
Senior Adviser

Plea to Capture Contemporary History

I would like to congratulate Terry Brennan and the Head of Regiment team on their outstanding efforts in publishing the Royal Australian Artillery Liaison Letter. It is a publication the whole of the Regiment can be proud of for its recording of Regimental history and events.

It is on the subject of Regimental history I would like to raise some concerns. In this time of out of role missions and task organising artillery troops and batteries for specific operations it is vitally important that the Regiment retain its identity (this subject has been done to death) and records its efforts. If the Regiment doesn't, much of its history and experience will be unrecorded for future generations. This is best reflected in the paucity of information in our official history on our involvement in Korea. We, the Regiment, know we provided platoon commanders and forward observers to the Australian battalion but our history, probably for brevity, only reflects upon the Regiment training the Anti-Tank Platoon in the Battalion. The situation in Korea is not that far removed from the current operational situation we find ourselves in now with detachments to the Royal Artillery and Forward Observers with Combat Teams.

Gunner units must not discount the importance of war diaries, unit history reports, situation reports for the liaison letter and the collection of other material from operations. These publications will become vital into the future as we continue to record the Regiment's history through books such as David Horner's 'The Gunners,' or to use as material to support the recognition of our Gunners achievements on operations, as members of the Regiment did for the awarding of the 'Coral' honour title to 102nd Field Battery, RAA. It would be a pity to miss out on recognising the fine achievements of our Forward Observers, Gunners, UAV Operators and Air Defenders during these times by not collecting, archiving and publishing this information.

I would encourage our Gunner Commanders to invest a little time in collecting this information and ensuring it is preserved for future Gunner generations, even if it is a few sentences, a list of gunners deployed and the deployment dates. If Gunners are looking for someone to archive the material do not look much further than the Regimental Museum at North Fort.

It is up to us who are experiencing this operational tempo to make the effort to support the Regiment

into the future. We are a fine Regiment and we should be proud of our achievements.

Sincerely

Lieutenant Colonel Sean Ryan

Concerned Gunner

Editor: I agree with and endorse the observations and plea made by Lieutenant Colonel Ryan. It is essential individuals take personal responsibility for ensuring their operational experiences are recorded. Trust me you cannot rely on the system to preserve them as is evident by the lack of a 12th Field Regiment commanders war diary for the period covering Operation Toan Thang (Battles of Coral and Balmoral). Whilst the Liaison Letter is not necessarily an official source it is a primary enduring vehicle for preserving your operational experience for the future. A few years ago during a conversation with Major General John Whitelaw he informed me that the Liaison Letter was a critical resource tool when conducting research for 'The Gunners' by Professor David Horner. I urge readers to continue to submit articles to the Liaison Letter.

Appreciation of Great War Service

Let me congratulate you most heartily and all who contributed to the recent Autumn Edition on what was an excellent production.

Lieutenant Colonel Nick Floyd's 'The Metamorphosis of the God of War' was conscientiously and very thoroughly researched. I found it most informative. My father and three of his brothers served in France 1916-18. Being too short (5 foot 2 inches 'in his socks') to enlist prior to Gallipoli; Jack (the eldest) and his third and favourite brother Wilfred (Wiff) joined the same gun detachment as Drivers in 13th Battery, 4th Field Artillery Brigade when the minimum height was lowered.

Gunners in Egypt, Bombardiers in France at The Somme, Pozieres and Bullecourt they were concerned lest their widowed mother and five sisters were left without support. Jack was commissioned at St John's Wood and Larkhill then joined 13th Battery, 5th Field Artillery Brigade, Wiff applied for the Army Flying Corps but on being told they were 'full up' gained his discharge at Horseferry Road so he could join the Royal Flying Corps in which he was killed.

My father Jack, wounded three times including gassing, commanded a Forward Observation Officer Liaison Party attached to support the Americans in the breaching of the Hindenburg Line

on 29th September 1918. On being released when the attack outran the range of 5th Field Artillery Brigade guns, his right arm was blown off at the shoulder by a stray German shell as he made his way through a communication trench back to his battery. He barely survived.

Nick Floyd's article greatly increased my knowledge of what my father and his three brothers endured while serving with the guns in France in 1916-18. I'm enlightened and most grateful.

Yours aye

Brigadier John Salmon CBE (Retd)

Editor: On behalf of Lieutenant Colonel Nick Floyd I thank you for your very positive feedback. I also have a far more enlightened understanding of Australian artillery operations during the Great War and its rapid evolution. I have received a good response to the paper from a wide array of readers.

102nd (Coral) Field Battery

I write in reference to the letter posted in the letters last edition by the last Battery Commander of 102nd Medium Battery, Lieutenant Colonel Phillip Tyrell. We the Vietnam Veterans of 102nd Field Battery have been of the same view as him ever since the Battery was disbanded on that fateful day in 1987 and right up to the present time. We sir, could not have put our thoughts across any better than you did, and 'ALL' ex 102 Battery Diggers thank you.

We will never forget Tuesday the 1st of December 1987 the day of the Batteries last parade. We will never forget the hospitality that 8th/12th Medium Regiment afforded us after the parade. We will also never forget that the 102nd Medium Battery sign went missing from the front of the orderly room on that evening. I am told it was unscrewed with a five cent coin.

The Veterans of the 102nd (Coral) Field Battery were like an extended family in 1968 / 69. To this very day, 41 years on, we are still the same. I doubt if any other Australian unit had or has the same camaraderie that our Battery possesses. But I may be biased.

Five ex 102nd (Coral) Field Battery members were a part of the 12 Gunners on the Coral commemorations organizing committee last year. Once again Gunner bias may come into the equation, but I am certain that if not for the skills of the Gunners the celebrations would not have been

near as successful as they were. We even had a Gunner organize all the other corps functions with little or no help from the people he was trying to organize.

Should 102 Battery ever be re formed I may be able to locate the orderly room sign and some tac signs that fell off some of the vehicles on the 1st of December 1987 for viewing in the Battery display cabinets. I also suggest that the bird that was the Batteries logo was in fact a Hornbill and not that as has always been depicted, a Toucan. Due to its long period of existence in picture form the Toucan and not the Hornbill should be the Battery emblem.

We have grave doubts that our proud Battery will be re-formed in our time or any time in the future. It is indeed sad that the tribal elders didn't take into consideration the proud past of our great unit.

Kind Regards

Rob Costello

Editor: Have faith!!! Whilst I have no special 'inside' knowledge I truly believe it will not be too long before the wrong is righted and 102nd (Coral) Battery will be back on the current order of battle where it should have rightly been all the time given its illustrious history.

Air Defence History

This letter is not a criticism of RSM Potter (RAA Liaison Letter Autumn Edition 2009), nor his informative article on the history of 16th Air Defence Regiment; but in reference to a piece of misinformation which has obviously found its way into the Regiment's history.

He mentions that gunners from the Regiment (then 16th Light Anti Aircraft Regiment) served the guns '... mounted on RAN small ships operating in South Vietnam (in 1968)'. The vessels were in fact Landing Ships Medium (LSMs) of the Royal Australian Engineers' 32nd Small Ships Squadron. The Squadron also had gunners, from the Regiment, serving the Ships' guns over the period 1970 - 1971.

Yours sincerely

Chris Jobson

Editor: Many thanks for setting the record straight. I draw readers attention to Chris Jobson's regular contribution on RAA Customs and Traditions in the Regimental Section.

Professional Paper Draws Praise

Another exceptional issue. I was particularly impressed with Nick Floyd's excellent article on the employment of Artillery in World War One.

Kind regards

Lieutenant Colonel John Macpherson (Retd)

Editor: You echo the views of many - thank you for your letter. The paper is an important contribution towards capturing and preserving our history.

Positive Feedback

Could I first congratulate you on a magnificent Autumn 2009 issue. The Liaison Letter has really changed over time and I really enjoy its current format and balance. It is good to get the updates but I found the articles of the highest quality in this edition such as Captain Cooper's 'Ten Things', but I would like to particularly congratulate Lieutenant Colonel Nick Floyd for his professional paper on RAA in World War One. Well done.

Regards and best wishes

Lieutenant Colonel Paul Harris

Editor: Your feedback is most welcome and appreciated. I have been trying for ten years to evolve the Liaison Letter into a format which appeals to as wide an audience as possible. Whilst I believe I have achieved this goal to some extent there is always room for improvement. I encourage all readers to pass on their constructive feedback and to write articles especially those on current operations in order to share their experiences with the wider Regiment.

Liaison Letter Catalyst for Discussion

I have had the good fortune to be able to read the Spring Edition 2008. I found the reading very enlightening to a matured gunner from the 60s and 70s. There are a few of us matured gunners here [Maryborough Qld] and I pass the book around and they all enjoyed it. It is a good talking point at the meeting place.

Thanking you

Des Hansen

Editor: I am pleased the Liaison Letter is not only bringing enjoyment to a group of more senior retired gunners but it is wonderful to hear it is also improving your awareness of the activities of the current Regiment.

Welcome Reader and Life Subscriber

I introduce myself as a retired Gunner who served in the Reserve Forces from 1955 to 1979 when I chose to retire. At that time I had returned from Hong Kong where I served my final years seconded to the Royal Hong Kong Regiment. My service started as a Member of 16th Heavy Anti-Aircraft Regiment at North Head and finished in Australia as the Commanding Officer of 18th Light Anti-Aircraft Regiment.

I was privileged to attend the 40th Anniversary of the Battles of Coral and Balmoral in Canberra last year and the National Gunner Dinner. I served a short time in Vietnam in 1969 where I came in contact with 101 Battery in particular.

As a separate issue, I have taken steps to pay a Life Subscription to the RAA Regimental Fund.

Congratulations on a most informative Liaison Letter. I look forward to receiving future copies.

Regards

Lieutenant Colonel Barry L. Lloyd RFD ED (Retd)

Editor: I am very pleased to hear you enjoy the Liaison Letter. I endorse your comments about the 40th Anniversary of the Battle of Coral, it was indeed an honour to share the event with the veterans especially the ceremony on Mount Pleasant where they received their long overdue recognition. I am also most grateful to hear you have become a life subscriber. I encourage others to follow your example.

More Welcome Accolades

Just a quick note to join the well deserved chorus of congratulations on the Liaison Letter publication. It's a fabulous way to remain connected with the Regiment. I must sort my subscription!

Best regards

Colonel Jon Black

Editor: Your 'chorus' is warmly and genuinely most appreciated. It is good to hear feedback that your efforts are appreciated.

Medium Gunner Socks!!

I received the Autumn RAA Liaison Letter yesterday: by Courier, rather than from the Postie, no less! I was so impressed that I read it last night and you certainly draw together a wide range of material: well done. I can offer some 'peripheral' information about medium gunners and their socks, although I would be surprised if this was not superseded quickly by many more authoritative communications.

On return to Australia from south Vietnam in May 1969, I was posted as Adjutant 2nd Field Regiment RAA, Batman Avenue and Landcox Street Brighton Depots. 2nd Division Artillery was a formidable group at the time, comprising 2nd & 15th Field, 10 Medium plus 132nd Divisional Locating Battery, all under the command of a Divisional Artillery Headquarters. Because Citizen Military Forces (CMF) service was available as a national service alternative, all gun units were at close to full strength, having two gun batteries and a headquarters battery each. 132nd and headquarters RAA were also well-manned.

Now, to socks... Such large numbers meant that the social whirl of Melbourne included an annual RAA Ball, which I duly attended each year and, at my first, was regaled by the sight of one Captain Geoff 'Putters' Putnam, one of the forward observer captain's of 2nd Field, who proceeded to raise his trouser legs to reveal one red and one blue sock, proudly stating 'Old medium gunner quiff!'

As the founding subbie of 104th Medium Battery when it was re-raised as an independent Australian Regular Army sub-unit at Holsworthy (I joined them in February 1966), I reckoned I already knew a thing or two about those who served the OBL 5.5, but this was news to me. So I would suggest that you pursue enquiries with former members of 10th Medium Regiment (Geelong and Colac). Graham Farley, later Colonel Artillery 3rd Military District, who was a battery commander at the time I served with 2nd Field, springs to mind as a likely source of authoritative knowledge, as I still have a copy of his witty and erudite slim publication 'In Direct Support - Gunner Miscellanea', produced for the 3rd Military District RAA TEWT at Woodend in September 1980. It is, alas, silent on the question of medium gunners socks!

With warm regards

Major John Thornton

Editor: If you think back to the original query about Red and Blue socks by Colonel Reg Foster, Colonel Commandant Central Region, the background and history to the story has evolved far beyond a 'subbie' writing about it recently in 8th/12th Medium Regiment. Many thanks for your contribution to the evolving story about a tradition which I think was almost lost and now needs to be proudly resurrected by medium gunners. Start wearing your 'Red and Blue' socks medium gunners. I wonder if it matters which foot each colour should be worn?

Red and Blue Socks Story Continues

I'm a little embarrassed having not renewed my subscription for some time, particularly as I've been reading Peter Bruce's copy of the Liaison Letter and failing to return it to him as soon as I should. However, I'll see him at Legacy tomorrow night and return his latest letter, The Spring Edition 2008. Could you send me a copy of it for my keeping please? You do great work and I very much enjoy seeing some names I recognise in 'Letters to the Editor'.

I read with interest Major Kym Schoene's response to Reg Foster's question of the medium gunners' socks. I thought you may be interested in a version given to me some years ago by the late Major Jock Finlay, popular, long-serving Victorian gunner. Having discussed many things trivial over a long Gunner Dinner in the Vic Bks Officers Mess, Melbourne, Jock volunteered to improve my knowledge with a number of written pieces connected with traditions and customs. The enclosed offering on the Red & Blue Socks situation was one of them. I enclose a copy of his covering letter and his description for what it's worth.

I've sent my membership to Major Schoene. I hope your 2009 is an enjoyable, productive year and congratulations on your high quality liaison letter.

Regards

Major Warren Barnard (Retd)

Editor: I think with the transition of the Regiment to 155 mm it may be time to formalise something about 'Red and Blue' socks in RAA SO's. [Editor: On a personal note while we are about formalising customs and traditions perhaps we should formalise Gunner bow ties!!] Major Jock Finlay's letter and version of the 'Red and Blue' socks history referred to above is reproduced on the next page.

Red and Blue

The observance of customs in the Army, whether it be the dignified ceremonial of Trooping the Colour or the wearing of a piece of coloured cloth behind a badge, is an integral part of military life, derived from military experience throughout the ages. To the uninitiated these customs may seem to be meaningless anachronisms, but to those who understand their origin they are the foundation of that potent driving force 'in the British Army -Esprit de Corps.

Throughout the British Army regimental customs are many and varied, encouraged by Authority and proudly cherished by those concerned. The Gloucester's two cap badges, the queue ribbons of the Welsh Fusiliers and the Minden Roses of the Lancashire Fusiliers are only a few examples.

The Australian Army has in the past been notably short of such distinctions, the tendency unfortunately being towards uniformity. It is interesting, therefore, to note that a novel custom has been adopted by officers of the Medium Regiments of the Royal Australian Artillery.

This custom harks back to a memorable occasion in the history of human conflict. At the Battle of Agincourt, on the twentyfifth day of October 1415, an English force under Henry V comprising mostly archers, field and medium, fought against a far larger French force for three hours and won a signal victory. Legend has it that at the height of the battle, the Commanding Officer of the 2nd Medium Archery Regiment fell mortally wounded. This gallant archer refused medical assistance and ably assisted by his Adjutant continued to issue fire orders until he finally succumbed to his wounds. His gallantry and devotion to duty went far towards the hard won victory and have been an inspiration to archers and gunners ever since.

Legend also tells us how when the body of the revered CO was being prepared for burial a miracle was revealed. His right leg was stained and encrusted with the rich red blood of the hero whereas to the amazement of all it was found that his left leg was covered with the royal blue blood of the aristocrat. This was immediately regarded as a divine revelation of the undoubted aristocracy of the "Mediums".

Gunners, being the modern counterpart of the gallant Archers of Olde England have for long cherished red and blue as their traditional colours, such being Symbolic - that they live like aristocrats and die-like heroes.

Officers of Medium Artillery Regiments are now perpetuating the Agincourt revelation in a somewhat unique manner. On certain formal occasions they may be distinguished from other categories of Gunner Officers, in that the sock on the right is red and the one on the left is blue. By this sign shall they be known.

Major W.M. Finlay

Writing Challenge

Lieutenant Colonel Nick Floyd
Chief of Army Visiting Fellow Lowy Institute

Background

Army Headquarters has developed a forum known as *Vanguard* to encourage professional discussion and debate. This is a monthly two page bulletin published by the Land Warfare Studies Centre (LWSC). Its style and purpose is similar to those already published by the RAAF Airpower Development Centre, and the RAN Seapower Centre (*Pathfinder* and *Semaphore* respectively).

Vanguard at this stage has broadly the same directed readership as the Australian Army Journal, and is hosted on the LWSC website (both intra and internet), and therefore reaches an audience well beyond the confines of Army itself. Its tri-Service homologues use this as a means for information action for their Service, and this is also one of the underlying objectives for *Vanguard*.

Proposal

I propose that the RAA develop a new literary vehicle (not necessarily a competition) aimed at all Gunners to write short, compelling pieces relevant to our calling, with a view to have the best ones submitted (possibly with scope for sub-editor enhancements) to *Vanguard*. A working title for the activity might be something like 'On Call', or in similar spirit. Those pieces that may not make it into *Vanguard* could be printed in the Liaison Letter and posted on the RRAA website as a practical means of keeping the debate rolling.

Submissions would be open to anyone, but I would propose we target the junior non commissioned officer through to major demographic. They wouldn't need to be syrupy and dew-eyed idealistic pieces in defence of old Gunner anachronisms - although debating the relevance of lessons from the past would be apt. Rather, the pieces should be challenging us as a Regiment (in all its facets) to remain relevant in today's battlespace in the best ways we can be. But importantly, any criticism needs to be constructive and offer compelling and realistic ways forward for the Regiment.

Style and Format

Pieces would have to conform to the *Vanguard* style and format – http://in_Hlt240336033_Hlt240336034tBM_1_BM_2_ranet.defence.gov.au/armyweb/sites/LWSC/comweb.asp?page=183604&Title=Vanguard – for ease of adoption, and also to reduce citation and length issues that may scare some writers away from a dusted-off 'RAA Essay Competition' resuscitation.

Publication

I think we would be looking for leading-edge use of media technology and a youthful, yet still disciplined argumentative style. This should in itself demonstrate the Regiments' capacity to explain its purpose - across every facet, from offensive support, ground based air defence and surveillance and target acquisition gunnery as well as joint offensive support – in a relevant and compelling manner. An initial easy methodology to encourage debate could be a website-based arrangement similar to the Lowy Institute website found at [<http://www.lowyinstitute.org/>], where .pdf articles are posted to a website.

Each product has a heading, an abstract, and the .pdf link.

For RAA purposes, the editor of such a page could receive commentary submissions via e-mail on an article that's been posted, select those that are useful to the debate, and then place .pdf versions of the juicy ripostes underneath the initial paper. This would probably lend itself to the idea's purpose of having submissions that would eventually go towards *Vanguard*. By subjecting each hosted/posted article to what would effectively be peer review, we could then select those that have: (1) raised the most interest; (2) had the most polarised discussions; and (3) been the most compelling in taking the Regiment forward; and then use this as the start point for selecting those for submission to *Vanguard*.

This is a good solution to generate debate, and for the purpose of developing peer reviewed, compelling product for *Vanguard*.

Conclusion

The proposal's appeal would be to energise writers who may be a little daunted by sending their product in directly to LWSC, and might have concerns that they could attract some serious negativity from other senior RAA members. Having their pieces come through a mid-point could provide them some much-needed moral support - and it indeed would be more compelling for Army Headquarters to have them published in *Vanguard*.

Editor: Further information on the final agreed way ahead for this proposal will be published in the coming months and will be circulated around the Regiment.



AUSTRALIAN ARMY
Head of Regiment
Royal Regiment of Australian Artillery
Bridges Barracks, PUCKAPUNYAL VIC 3662

2009/1041254
RAA HOR/OUT/2009/I1164129

The Private Secretary to Her Majesty The Queen
BUCKINGHAM PALACE

Dear Sir,

I request that you submit for Her Majesty's consideration the following loyal message from the Royal Regiment of Australian Artillery:

The Colonels Commandant, the Head of Regiment, and all Ranks of the Royal Regiment of Australian Artillery convey to Her Majesty, our Captain General, their respect and loyalty on the occasion of Royal Australian Artillery Day, 1st of August 2009, commemorating 138 years of dedicated service to Australia.

Sadly, in November 2008, the Regiment mourned the death of Lieutenant Michael Fussell who was killed in action whilst on operations in Afghanistan.

20th Surveillance and Target Acquisition Regiment continues its successful support to operations in Afghanistan whilst 110th Air Defence Battery, re-roled as infantry recently returned from a tour of duty in East Timor. The close ties with the Royal Regiment of Artillery continue with gunners from 4th Field Regiment returning to Australia from operations with 29th Commando Regiment, Royal Artillery in Helmand Province, Afghanistan and replaced by gunners from 1st Field Regiment who have now deployed with 40th Regiment, Royal Artillery.

This year our special thoughts are with our gunners and their families who continue to prepare for and support several operational theatres.

Ubique

Yours faithfully,

T.R. FORD, AO
Major General (Retired)
Representative Colonel Commandant
Royal Regiment of Australian Artillery

Tel: +61 3 5735 6465
E-mail: kym.schoene@defence.gov.au

June 2009



BUCKINGHAM PALACE

Major General T. R. Ford, AO,
Representative Colonel Commandant,
Royal Regiment of Australian Artillery.

Please convey my warm thanks to the Colonels Commandant, the Head of the Regiment and all Ranks of the Royal Regiment of Australian Artillery for their kind message of loyal greetings, sent on the occasion of Royal Australian Artillery Day which is being held today to celebrate one hundred and thirty-eight years of dedicated service by the Regiment.

As your Captain General, I was saddened by the death of Lieutenant Michael Fussell and appreciate your thoughtfulness in writing as you did. In return, I send my best wishes to all concerned for a most memorable and enjoyable day.

ELIZABETH R.

1st August, 2009.



AUSTRALIAN ARMY
Royal Regiment of Australian Artillery

2009/1041254
HOR/OUT/2009/I1178367

**Representative Colonel Commandant,
Colonels Commandant,
Commanding Officers,
Battery Commanders,
Regimental Sergeant Majors,
All Ranks of the Royal Regiment of Australian Artillery,
Associations and affiliated friends of the Regiment.**

**ANNIVERSARY GREETINGS TO THE ROYAL REGIMENT OF AUSTRALIAN ARTILLERY – 1ST
AUGUST 2009**

The 1st of August 2009 marks the 138th Anniversary of the Royal Regiment of Australian Artillery service to the Army and Australia. Today we again celebrate the history, lineage and customs of the Regiment through a range of dinners and activities.

In November 2008 we were all reminded that our dedication, service and commitment to Australia comes at a price, when Lieutenant Michael Fussell was killed in action whilst on operations in Afghanistan.

The Regiment continues to support operations in Afghanistan, East Timor and across the world whilst those in Australia have assisted in bushfires and floods. The coming year will also bring many new challenges through equipment, ammunition, doctrine, manning and applications in the battle-space. I ask you all to continue to actively embrace these challenges – look forward, be ready, remain focussed and apply all your skills to ensure we get the best from these changes.

We must all continue to embrace and implement the concepts of 'Adaptive Army' at all levels, understanding that at its heart adaption balances the need to change with a requirement to retain vital corporate knowledge.

In celebrating our anniversary this year, I ask you all to reflect on our gunners currently deployed or in training for deployment to operations across the world, to thank and continue to support their families during their absence; and to wish all those serving overseas a safe and speedy return to their beloved Australia and their families.

On behalf of the Representative Colonel Commandant and Colonels Commandant, I congratulate all ranks of the Royal Regiment of Australian Artillery, serving and former, for their service.

Ubique

A handwritten signature in black ink, appearing to read 'W.L. Goodman'.

W.L. GOODMAN, AM
Brigadier
Head of Regiment

Telephone: (03) 5735 6465
E-mail: kym.schoene@defence.gov.au

17 July 2009

The threat of death all in a day's work

Ian McPhedran in Afghanistan

THE true horror of war struck Will Close hard when his good mate Mike Fussell was killed in Afghanistan in November.

'Before that it was a bit remote. It can't happen to me, but when you know someone who dies it really hits home,' the 24-year old artillery captain said over a cup of coffee under canvas in this hot, dusty outpost this week. The death of his mate had a knock-on effect when his mum and dad, Peter and Mary Close from Orange in NSW, met the Fussell family at their home in Armidale.

'Mum, particularly, is terrified, but my parents are my biggest supporters,' Capt Close said. 'They know this is what I love doing.' And love plays a major part in a soldier's life, particularly soldiers such as Capt Will 'Danger' Close, deployed to one of the world's most dangerous places, facing possible death or disability on a near daily basis.

His nickname derives from the military term 'danger close', which is broadcast when heavy fire is deployed near friendly troops. It is particularly apt given his job as a

forward observer - the man who calls in the heavy metal.

During a two-day stay at Combat Outpost Mashal this week, we met great soldiers under the command of another fine officer, Capt Duncan Foster.

The team has been at Mashal since early June and is working hard to secure its small section of the large Australian area of operations in this small but productive corner of Oruzgan Province.

As an Operational Mentor and Liaison Team, Capt Foster and his troops are at the cutting edge of the Afghanistan mission.

They are not here simply to fight the Taliban and make the local people safe, they are also responsible for mentoring the Afghan National Army.

For Will Close and his mates that means early starts, long and frustrating days and short nights where a few hours' sleep, in non-air conditioned HABS (hardened accommodation blocks), is broken by piquet duty, sudden call-outs or pre-dawn patrols. The Herald Sun followed Capt Close through a typical day.

3am: Wakes up in his HAB, still constipated, like most of the Diggers, who lack fibre in their diet. Breakfast is a cup of tea and two muesli bars. Random chat with the lads until 3.30am when it is time to get geared up and check radios.

Body armour, ballistic vest with night fighting gear, sunglasses, weapons, ammunition, up to 10 litres (10kg) of water, 24-hour ration pack, trauma first aid kit, tourniquet - all up about 40kg.

3.45am: Prepare to depart for a patrol into the 'green zone'. After some coaxing and well-placed boots by their boss, Capt Abdul Samad, the rag-tag ANA soldiers eventually arrive.

4.05am: Out the gate (five minutes late) in patrol formation. After about 500m they reach the 'green' to begin a cordon-and-search mission looking for insurgent activity.

Patrol through trees and head-high crops of corn towards their objective.

An infantry patrol from the 1st Battalion's 3 Platoon is already in place in an outer security cordon.

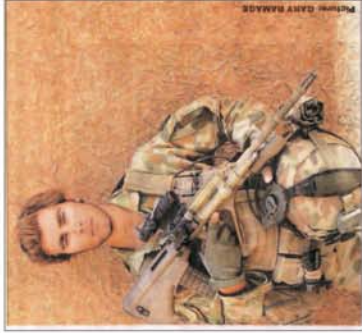
5am: Arrive at target, a group of qalalas, or mud compounds, where the locals live, to start search. The ANA troops move the women and children into rooms away from the men so the search and interview of all fighting age males can begin.

The women will be interviewed by a female Dutch soldier attached to the patrol.

7.30am: Cordon-and-search operation completed and stop at mosque so Capt Samad can present the Mullah with a new carpet in a gesture of goodwill. Capt Close believes that insurgents are planning to set an improvised explosive device on their return route.

The Diggers defeat the threat by moving in an unexpected direction for home and Combat Outpost Mashal. The main challenge here is keeping the ANA in check. 'They can be like horses turning for home,' he says.

8.30am: Arrive back at Mashal, strip off the heavy gear, cool down, change into shorts and singlet and enjoy a cool drink before



a detailed de-brief. Once all the gear is stowed, it is back to the command post for radio piquet duty and liaison with ANA for future tasks.

Noon: Lunch, followed by rest and rack time before the process begins again.

Will Close will serve for nine months here. He plans to meet his folks in Rome for his out of country leave. He'll then travel to London to catch up with mates from the Royal Artillery. Good-luck to him.

Herald Sun, August 22, 2009 Picture by Gary Ramage

Regimental

Representative Colonel Commandant

Major General Tim Ford AO (Retd)



Dear Fellow Gunners

Another six months has passed quickly for the Regiment, and the pace has not slackened. We continue to have RAA units and individuals deployed around the world on difficult and dangerous missions, and as outlined

elsewhere in this Liaison Letter a wide range of development proposals are being pursued for our future force structure. As a Gunner I am delighted to see the establishment of an Artillery (Joint Fires) cell at Forces Command. The coordination of technical gunnery and advice at our higher operational level headquarters has been absent for some time and this has been reflected in some decisions affecting the RAA. This is a step to fixing that problem.

I recently attended the Gunner Dinner run by the RAA Association (NSW) in Sydney and a Handover of a Japanese Diary found by Gunners in Buna in 1943 from the RAAHC via Manly Council to the soldier's family. Both events reminded me of the breadth of our membership and experiences across the Regiment and the strong and positive values that Gunners promote within our Defence Force and the Australian community.

As most of you are aware, there has been some local publicity and comment this year on the future of the Australian Army Artillery Museum located at

North Fort. As I noted in the last Liaison Letter, the site at North Fort has now been handed over by Defence to the Sydney Harbour Federation Trust and negotiations are continuing on what this will eventually mean for the Museum. While we are certain that the history of the RAA in Sydney will continue to be acknowledged and displayed at North Head, the nature of the future relationships that the RAA should have there and with other historic forts and artillery collections around Australia, the School of Artillery, the Army History Unit and other regional museums continues to be discussed. A representative of the Regimental Committee appointed by me, Brigadier Vince Williams (Retd), is reviewing the complete situation and the various opinions and factors that exist about the Museum and the collection. He will report on these matters to the Regimental Committee in October. As the Head of Regiment and I have noted in our issued statements, we will strive to seek the very best solution that will appropriately recognise and maintain RAA heritage and history into the future.

In this respect, it was great to see the RAA History Sub Committee assembled in Randwick in June. This was the first opportunity for the full sub committee to meet. Under the Chairmanship of Brigadier John Cox they have established a clear vision on the way ahead and a plan to complete a wide range of projects that will ensure our RAA history is properly recorded. Importantly this includes our current Gunner activities and operations. To assist this I urge all RAA units and individuals to record current events and to pass them to the Head of Regiment for our archives.

On your behalf I have written to congratulate Warrant Officer Class One Mick Spring on his award of a Conspicuous Service Medal in the 2009 Queen's Birthday Honours list. Many of you will remember Mick from his many postings in Gunner units. I have also acknowledged the award to the military historian Professor David Horner, author of 'The Gunners - A History of Australian Artillery' printed in 1995. David continues to be a great

source of knowledge for us all on Australian military history which was appropriately recognised by his appointment as a Member in the Order of Australia.

I was delighted to see that two of our hard working Gunner elders were also recognised in the Queen's Birthday Honours List in June. Brigadier Doug Perry (Retd) and Colonel Don Tait (Retd) have both been awarded the Medal of the Order of Australia on the civil list. These two have been supporting Gunner and other community activities for many years, including long term appointments as the RAA Colonel Commandants in their regions. Doug's award also recognised his significant contributions in the Peninsular region in Victoria over many years and Don's his great work with organising the Coral 40th anniversary activities amongst many other achievements.

I look forward to meeting with you at RAA activities over the next year and to your continued contributions to our effectiveness as a Regiment and to our heritage. Good luck and good shooting to all.

Ubique

RAA Heritage

*Major General Tim Ford AO (Retd)
Representative Colonel Commandant*

In recent days there has been speculation and comment circulating following articles and comment last Tuesday in the Sydney media on the Australian Army Artillery Museum (AAAM) at North Fort. I have discussed this with our Head of Regiment and we feel that it is important that all Gunners past and present should be aware that the preservation of the heritage and history of the Regiment is being carefully guided and monitored by the RAA Regimental Committee and associated bodies.

The RAA Regimental Committee comprises the RAA Colonel Commandants from each region, the Head of Regiment and RAA Regimental Gunner, the Commanding Officers of all RAA units and their RSMs, plus Officers Commanding independent RAA sub units and their BSMs. The Regimental

Committee is in contact through its Col Comdts and units with the various RAA State, regional and unit associations and with the RAA Historical Company and the various regional and local artillery organisations and societies that exist around Australia. Representatives of the RAAHC and the AAAM attend and report to Regimental Committee meetings.

The Regimental Committee has approved the RAA Strategic Plan which includes a goal to preserve RAA Heritage and history. It has established an RAA History Sub Committee (HSC) that has developed 26 RAA history projects, and it has appointed a Regimental representative, Brigadier Vince Williams CSC (Retd), to attend Museum Advisory Committee at North Fort and to advise and assist the RAA Historical Company.

The Regimental Committee will continue to monitor and advise on the entirety of RAA heritage including the links to the many historic artillery sites around Australia and the many collections that relate to our history. This includes the future of the collection and preservation of the various artillery and national treasures at North Fort such as the Defence of Sydney Monument, the Memorial Pathway and the 9.2in Gun emplacements. This will be done in conjunction with the Sydney Harbour Federation Trust who have been allocated responsibility for the North Fort site and are developing a management plan for all of North Head. It will also be done in conjunction with the Army History Unit who is responsible for Army history and the management of 17 Corps and Area Museums, including the AAAM.

It is Army policy that where practical Army Corps Museums should be co-located with Corps schools, and there have been discussions along this line for many years, but at present there are no definite plans to move any of the current collection at North Head to the School of Artillery at Puckapunyal. Any such proposal and its impact on the North Fort will depend upon many factors, and whatever the outcome it is probable that because of the importance of North Head to the history of the RAA and Sydney, an artillery museum presence will always remain at North Fort.

There is a great breadth and depth to the history of the RAA overseas and around Australia, and we need to not close our minds to number of solutions that will appropriately recognise and maintain RAA heritage and history into the future.

Ubique

Head of Regiment

Brigadier Wayne Goodman AM



Greetings

As has become the norm, this year is quickly slipping by in a flurry of activities for members of the Royal Regiment both overseas on operations as well as here at home. Gunners of all ranks continue to bring great credit on themselves, their units and the wider Regiment through their positive 'can do' attitudes and professional conduct.

This year the Regimental Conference Capstone Day has the theme of 'Future Capabilities - What the Army needs from Joint Fires and ISTAR'. The Regiment is entering a challenging and professionally rewarding phase of its evolution; some may even claim revolution, across the spectrum of our capabilities. For those involved at the coal face this is a significant paradigm shift from how Gunners deliver our capabilities to the battlespace. I encourage everyone to embrace these opportunities and enjoy the challenges and rewards they will bring to your career and most importantly job satisfaction.

There have been some recent changes to key artillery terminology made to better explain to the combined arms team the wide range of capabilities and skills that Gunners bring to the battlefield. Essentially the term 'offensive support' has been replaced with a combination of the terms 'fires and effects'. An Army Newspaper article compiled by Major's Julian West and Adam Worsley explaining the changes is in this edition.

I appreciate that there are many people eagerly awaiting confirmation of how the RAA Force Modernization Review will impact on the Regiment and themselves personally. Unfortunately the details have not been finalised and endorsed, therefore I can not advise any specific information at the moment. I appreciate there is keen interest in the possible relocation of some batteries and key Regimental structural changes. I will ensure this information is promulgated through your chain of

Command, in the Liaison Letter and elsewhere as soon as the final outcomes are agreed and approved for release.

The RAA conducted an Occupational Analysis in 2008 in order to provide data for the development of future employment categories. The data collected from the Occupational Analysis was used to facilitate the validation or redesign of trade structures, employment and training as appropriate. Overall, results from both the full-time and part-time respondents demonstrated generally positive attitudes towards their immediate supervisor leadership, senior leadership, career development and performance culture.

When asked for written comment however, retention issues drew the greatest comments with remarks about general dissatisfaction with some leadership, pay and conditions, claiming old and out dated equipment and the lack of deployment opportunity, specifically in their primary role. Comments provided by the part-time respondents focused on training and the negative effect existing training has on their career management; the ability to balance their civilian employment / personal lives and their Army commitment. I thank all those who participated in the Occupational Analysis survey.

A series of proposals have been put before the Defence Force Remuneration Tribunal; the date for their decision is 16th October 2009. The proposals consist of new employment categories for the offensive support trades, with some realignment in the surveillance and target acquisition and air defence trade areas. I believe these proposed changes are a major advancement for the respective streams. One example of the changes is the incorporation of the Artillery Meteorology and Survey trade within the Unmanned Aerial Systems trade. These changes will assist with establishing the platform which will assist the Regiment to move forward into the future and support the Adaptive Army. I thank Captain Greg Metcalf and his team at Artillery Trade and Training for the tireless work and effort they have put into bringing this to a timely conclusion with positive outcomes for the Regiment.

Recently, at the Royal Military College, I had the pleasure to present the Royal Australian Artillery Prize to Lieutenant Simon Frewin. It was also privilege to welcome all the graduates from the mid year class to the Royal Regiment: Lieutenant's John McDonald, Neil Gould and Abraham Dearmer

all posted to 8th/12th Medium Regiment; Lieutenant's Nicholas Dickeson and Simon Frewin all posted to 4th Field Regiment; Lieutenant's Andrew Evans and Grady McDowall all posted to 20th Surveillance and Target Acquisition Regiment; and Lieutenant Richard Naisbitt posted to 16th Air Defence Regiment.

In late May I joined serving as well as former members of 1st Field Regiment to mark the 60th anniversary of the Regiments establishment in 1949. The 'Premier' Regiment was raised out of the ashes of the Second World War as part of the establishment of the Australian Regular Army. There is an article elsewhere on the event. In June I visited the School of Artillery as the guest of the Manager Operations Offensive Support Course for their end of course dinner. It was a pleasure to address the members during their celebration of successfully completing this vital career course. More recently I visited 105th Medium Battery on Exercise Tigers Charge at Wide Bay Training Area along with Colonel Brian Bailey, the first incumbent of the recently established 'Colonel Joint Fires' who heads up the newly created Joint Fires Cell in Force Command. I must say it was excellent to again smell cordite and watch the fall of shot!

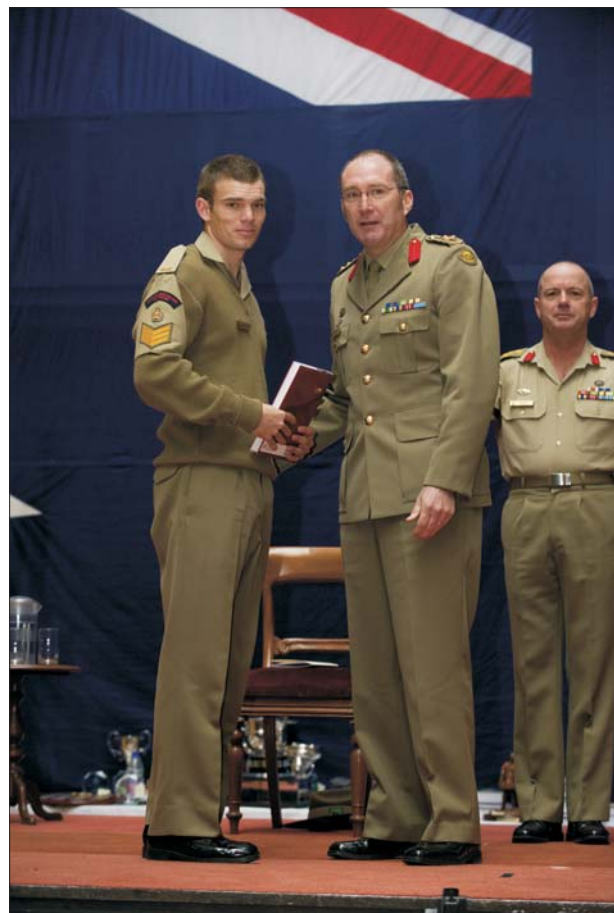
In these times of change I would highlight that whilst the name may have changed from 4th Battalion Royal Australian Regiment (Commando) to the 2nd Commando Regiment, Gunners remain posted to the unit. Along the same theme an era at the School of Artillery which started in 1978 was drawn to a close mid this year with the cancellation of the UK exchange 'Major' instructor-in-gunners position. This means there will also be no more Australian Gunner officers on exchange at the Royal School of Artillery.

Head of Regiment is currently participating in an Army Headquarters review of the Head of Corps functions and responsibilities. While this has not been completed I see the primary change being that with the establishment of the Joint Fires Cell at Forces Command and the creation of the position of Colonel Joint Fires, the Head of Regiment will be in position to step back from the responsibilities of day to day oversight of the serving Regiment and focus more on broader Regimental matters. I welcome the establishment of the Colonel Joint Fires position and with it the chance for Colonel Bailey and his staff to work inside the Forces Command Chain of Command. I look forward to working closely together.

I echo the congratulations from the Representative Colonel Commandant to those retired members of Regiment, Brigadier Doug Perry and Colonel Don Tait, who were recognised in the Queens Birthday honours as well a former Gunner, Warrant Officer Class One Mick Spring.

In what are professionally exciting times to be a Gunner regardless of rank or appointment I ask you all to embrace the future of the Regiment and all that this brings with it. I look forward to seeing as many of you as I possibly can around the Regiment in the coming months and discussing the future of our Royal Regiment.

Ubique



Lieutenant Simon Frewin presented the Artillery prize for the last RMC graduation class by Head of Regiment

Museum Future

*Brigadier Wayne Goodman AM
Head of Regiment*

Greetings

I am aware that there has been some recent press (Telegraph and Manly local paper) regarding the old chestnut of moving the Museum to Puckapunyal. Please find below some facts concerning this issue, and attached a letter from the RCC. Please disseminate widely to assist in an informed and not emotive debate.

The move of the AAAM from North Fort to Puckapunyal has been on-going since the 1990s. The reports in the papers appear to have stemmed from a brief to the RAAHC and AAAM which identified that the Army History Unit still intends to progress the relocation of the AAAM from North Fort to Puckapunyal in the mid to long term.

This briefing appears to have then been leaked to the press and to local state and federal members and couched in words so as to appear as if it was occurring immediately. **This is not the case. If it is to occur in the future there will be prior consultation.**

There are many issues which need to be addressed for such a move to take place, the least of which is funding, and the RAA and AHU are continuing to work through these issues noting the wishes of the Army, RAAHC, AHU, the AAAM and of course the RAA.

Army policy remains an intent that Corps museums are co-located with their Schools. This policy is not new and is promulgated in the relevant Defence Instructions. The key issue in meeting this intent is funding. There has been no funding allocation for construction of a new museum at Puckapunyal, and given the current issues with sourcing funding for the maintenance and repair to existing facilities in the Puckapunyal Military Area, I do not envisage any funding becoming available in the short to medium term at least.

In recent years with the development of the Sydney Harbour Federation Trust (SHFT), who have taken over the North Head site and other coastal historical areas in Sydney, they have advised their

intent to charge AHU rent for the North Fort site. The planned rent is considered to be excessive and is being discussed by AHU and SHFT with the RAA. This development must also be considered in future planning. The HOR and RCC also attend regular discussions with SHFT and AHU.

The HOR and RCC are in consultation with all the key stakeholders and will provide further updates when information is tabled to any planned move and to the future of the AAAM.

Ubique

Note: The information from Head of Regiment was circulated as RAA Advice Notice 2/09 on the 29th April 2009

Regimental Master Gunner

Warrant Officer Class One Phil Matthysen

How will the Adaptive Army impact on me?



One element of the 'Adaptive Army' initiative has been the rationalisation of command and control in order to ensure force generation procedures are efficient and highly

adaptive. However, it must be understood that Adaptive Army is more than a reorganisation; it is a series of linked initiatives encompassing personnel initiatives, material management improvements, advances in training and education, advances in knowledge management, better equipment and new doctrine.

Much has been written about these initiatives already. Almost simultaneously, the RAA have several major projects that will provide additional or replacement capability to the ADF. The RAA will need to ensure its implementation plans are aligned with the development of Adaptive Army so that these measures do not adversely affect the contribution to the Divisional Rotation Plan and are aligned to the Army Training Continuum and Deployment Cycle; furthermore, all aspects of the RAA implementation must be resource neutral.

These are some of the challenges that we as a Regiment will need to negotiate in order to succeed. However, at the Gunner level the question is 'How will these changes impact on me?'

The following highlights several new projects for the RAA that as a consequence will be inextricably linked with Adaptive Army initiatives. LAND 17 will deliver a 155mm calibre towed and self-propelled delivery system with increased range, greater accuracy with enhanced effects. Linked to this will be a Battle Management Systems (BMS-F), enabling the digitisation of the indirect fire system, resulting in increased responsiveness and situational awareness and the integration in to all facets of the planning and execution. The training on Lightweight Towed Guns and BMS-F is expected to commence early in 2011 to meet the Introduction into Service (IIS) date of June 2011 ensuring both 1st and 4th Field Regiments are fully equipped with new guns and BMS-F (C2) by December 2011. Training on the Self Propelled Howitzers and updates to 8th/12th Medium Regiment's BMS-F software are expected to be delivered into service mid 2012. JP 2085, the Excalibur GPS-directed HE projectile, adds a further capability through the acquisition of precision guided munitions that will significantly reduce the potential for collateral damage caused by indirect fire.

JP 129 Unmanned Aerial Systems will significantly enhance the ISTAR capability by providing a degree of digitised sensor-to-shooter linkage that the ADF OS community has not had before. 16th Air Defence Regiment, or Ground Based Air Defence, will potentially adapt its capability, based on the 2009 White Paper, to include a Counter Rocket Artillery and Mortar (CRAM) system, the enhancement or replacement of the current RBS 70 missile surface to air guided weapon system, and a BMS. When the Chief of Army planned the Adaptive Army, he wanted a force that was capable, responsive and relevant being able to deploy at short notice with our joint and interagency partners. In the years to come, the modernisation of the RAA will have improved protection and interoperability with Coalition partners meeting those requirements involving Gunners at all levels.

Fundamental to successful force generation under the Adaptive Army is the provision and development of foundation technical skills. The complexity of job skills and the associated platforms in the 21st Century battlespace is such that the RAA can no longer train its personnel in a range of skills for broad-based employment. Consequently, the RAA has re-structured five

Regimental streams - gun, artillery observer, artillery command post, ground based air defence and surveillance and target acquisition. With the advent of the Adaptive Army initiative, one aspect is the Army Training Continuum (ATC) that covers individual, collective training and force preparation to produce force elements for operations. The ATC and re-structured trades will support an unprecedented range of systems-focussed capabilities being introduced into the RAA as the new trade structures will allow improved development of individuals by enhancing the baseline level of knowledge required to become true subject-matter experts within their job.

The answer to the question of the Adaptive Army initiatives and what does it mean to Gunners is that RAA soldiers will need to be expeditious learners in order to understand the full capability of the new digital technologies. In Utopia, entire units would be taken off-line to concentrate on the IIS the new equipment and skills much in the same way that the Canadian and Dutch artillery have done in the past. This allowed focussed unit training without any interruption from higher up the chain-of-command. However, I expect that this will not be the case here as our commitments are different from theirs. Ideally, a gun regiment undertaking IIS of a capability will be able to isolate an element from the force generation cycle within the Division rotational model so as to allow the growth of the foundation technical baseline skills.

The mental approach of making things work must be balanced with an attitude of being able to raise issues and concerns with commanders even if the concern maybe contrary to the inclinations of the recipient. The unit command team is vital to the development of these changes; from the quintessential junior non commissioned officer ranks to higher; we all have a role to play as these changes occur over the coming years. At the risk of stating the obvious, we as a Regiment must be proactive and enterprising about the way these changes are implemented to ensure that the new Army initiatives, equipment, and employment category restructures are developed and given a chance to work.

Ubique

Joint Fires Cell

*Colonel Brian Bailey
Colonel Joint Fires*

There has been much change and development with the Forces Command Offensive Support Cell since the last Liaison Letter. Firstly, the cell is now embedded within CS & ISTAR Group. This group is responsible for the direct command of 11 units (including 16th Air Defence Regiment, 20th Surveillance and Target Acquisition Regiment and 1st Ground Liaison Group) and for technical advocacy of joint fires, ISTAR and engineers. Within this capacity it is anticipated by the end of this year the Offensive Support Cell will migrate to become Joint Fires Cell and facilitate technical control of Army offensive support force elements on behalf of Commander Forces Command.

Secondly the cell has assisted with the development of the new RAA Trade Structures and RAA Force Modernisation review. Special mention must be made of Captain Greg Metcalf and Lieutenant Colonel Griff Thomas who have been working tirelessly behind the scenes to ensure that these initiatives have successfully progressed through the various committees and staff processes. Both of these initiatives will ensure that the Regiment is well placed to meet the challenges of the future battlespace by embedding flexible structures and trade models. As we incorporate the constituent elements of Land 17 (AFATDS, M777A2, SPH etc), the new trade models and force structures will enable the RAA to realise a truly integrated sensor to shooter network.

Thirdly, the cell has worked closely with joint agencies to better integrate the RAA with joint fires. The imminent introduction into service of Air Warfare Destroyer, Super Hornet, Joint Strike Fighter and Airborne Early Warning and Control Aircraft will pose significant challenges for the integration of joint fires. The Joint Fires Cell will continue to work with RAAF and Navy through the Air Land Integration Office, 4 Sqn (for JTAC training), and the Amphibious Working Group, to ensure that the RAA remains integrated with, and at the forefront of the Australian Defence Force joint fires capability.

Finally, by 2nd November 2009, all RAA units will be under the command of Commander Forces Command. This is the first time in the modern era

that all RAA units have been unified under a single command structure. Within this unified structure, the Joint Fires Cell will be responsible for the implementation of the RAA Force Modernisation Plan. The plan will synchronise the introduction of the new trade models and new unit structures with the introduction into service of Land 17. The unified command structure should simplify this synchronisation and enable the RAA to be the first to realise a fully digitised capability within Army.

These are the major initiatives that the Joint Fires Cell is currently working on. The cell will soon commence work on the Ground Based Air Defence Regiment and Surveillance and Target Acquisition Force Modernisation Review and the Army Air/Land Force Modernisation Review. In addition we are closely monitoring the second and third order effects of the many Adaptive Army initiatives that are impacting on the RAA.

In conclusion, the Joint Fires Cell, just like Forces Command and the rest of Army, still remains largely a work in progress. There is much to do and many challenges to overcome however the RAA is currently in an exciting space that is gaining the positive attention of Army's senior leadership. As I go around and visit RAA units I am continually reminded of just how exciting this brave new world is for the RAA and how well placed our young officers and non commissioned officers are to capitalise on these opportunities.



Vale

Brigadier F.R. (Ron) Evans OBE

Brigadier Vince Williams CSC (Retd)

241 (NX 12273) Brigadier F.R. (Ron) Evans (Retd) OBE passed away on 16th May 2009 at the age of 96. Ron was a 1935 (Victoria Barracks) Royal Military College graduate. Due to the shortage of opportunities in pre War Australia, he served his initial regimental duties with an Indian Army mountain battery. He became adjutant of 2/5th Field Regiment when it was raised as part of 2AIF and was promoted to major in the same unit, serving with them in the Middle East. Late in the war, as a lieutenant colonel, he was on the headquarters during the Borneo campaign and took over as commanding officer of the 2/5th Field Regiment when its commanding officer was injured during the Balikpapan landings.

After the war, as a lieutenant colonel, Ron attended the Staff College located in Puckapunyal before being sent to the UK on the Gunnery Staff Course. He returned to North Head and became Senior Instructor Field Wing and then subsequently Commanding Officer / Chief Instructor of the School. As a brigadier Ron commanded Puckapunyal and then attended the Imperial Defence College Course in the United Kingdom. He subsequently became the commander of Australian Army troops deployed in the Far East as part of the United Kingdoms FARELF. On his return to Australia he became Commander Royal Artillery (CRA) and retired in 1968.

Ron's wife of 68 years, Alison, predeceased him last month. Two sons and a daughter and many grandchildren and great grand children survive him. I have known Ron for many years and he and Alison were Julia and my guests at a number of functions at North Head when I was Commanding Officer / Chief Instructor. He was a very distinguished gunner and will be missed.

Major Allan Campbell

Compiled from 4th Field Regiment Emails

Major Allan Campbell served over a 27 year period in the Australian Regular Army in a range of gunner

appointments. During this time Allan held the appointment of second-in-command 4th Field Regiment. On departure from the full-time Army in 1990 Allan remained a long term honorary member of the 4th Field Regiment Officers Mess and continued this close affiliation with the Regiment and the officers throughout the consolidation stages of the officers messes in Townsville up until his death.

Major Allan Campbell passed away on 19th June 2009. Though his health had deteriorated considerably over the two weeks leading up to his death it still was sudden and tragic to all who have connected with him both professionally and personally over many years in the gunner community. Vale Major Allan Campbell.

Major Ronald James Glew

Colonel Arthur Burke OAM (Retd)



Commitment and passion were the two words used at Ron Glew's final farewell to describe his vibrant and full life. The very mention of these two words started heads in the chapel nodding in agreement-his Army mates, Returned and

Services League of Australia (RSL) and Caboolture Orchid Society members, and of course his bereaved family.

Born in Melbourne on 1st August 1944 to plumber George and his wife June Glew during the war years, it was evident from an early age that Ron would set his own agenda for life. Not wanting to follow in his father's footsteps, he joined the Victorian Railways and became a member of the Citizen Military Forces (CMF) in his spare time. He was an excellent sportsman, excelling in Aussie Rules and loving golf with a passion.

The CMF provided a challenge and stimulation, something which Ron missed working for the railways so, just after his 17th birthday, he enlisted in the Regular Army and was allocated to the 111th Light Anti Aircraft Battery. His younger brother, John marvelled at the passion with which Ron cleaned his webbing equipment, polished his boots and took hours to iron his starched uniforms.

Two years later, Gunner Glew had earned two stripes and seven months after that was on overseas service at Butterworth in Malaysia. In stove pipe pants, pointed shoes and Elvis Presley hair style liberally slicked down with Brylcreem, Ron won the heart of and married Rita. He arrived back in Australia in 1966 with a new wife and a newborn son, Robbie.

He continued in the air defence world till 1968 then move on promotion to sergeant to the School of Artillery. Next it was 19th Composite then 8th Medium Regiment and 123rd Training Battery. Ron achieved his warrant officer's cap in 1971 and returned to 16th LAA Regiment. He was held in high esteem by his peers as evidenced when brother John followed in his footsteps. Whilst a recruit at the School of Artillery, John was told quite plainly by his instructor, Sergeant Bluey Bellis, 'So you're Sticky Glew's brother. Well, you have big shoes to fill!'

Mind you, Ron was not always an angel. One day John and he went down to the local pub promising Rita they would be home for lunch. A very chirpy pair arrived after it was dark and sat down in front of the television with a beer. Rita ignored them and continued ironing quietly. However, Ron's comment, 'What's for dinner, love' was quickly answered by an iron hurtling through the air and the miscreants ducking for cover.

In 1971, Warrant Officer Glew was commissioned Lieutenant Glew and enjoyed periods with the 'steam' gunners of 4th Field Regiment in Townsville, the Proof & Experimental Establishment at Port Wakefield in South Australia and the 2nd/15th Field Regiment in Victoria. He returned to his beloved 16th Air Defence Regiment at Woodside, SA in 1977 as the captain quartermaster then Headquarters Battery commander.

Ron never did anything by halves and this included being a consummate host and entertainer. Together with his soul mate, Rita he created a true festive atmosphere for his brother's large family each Christmas - eating magnificent curries, fishing, lounging in the spa, picnicing at the beach. Similar repasts and treatment greeted visiting friends.

Major Glew transferred to the Army Reserve in 1985 but was determined not to rest on his laurels. In 1986 he became the inaugural battery commander of the re-raised 13th Field Battery of artillery at Kallangur on Brisbane's northern outskirts. He remained a very committed commander of this unit till 1993 when he was transferred to Brisbane's 7th

Brigade Headquarters till he reached statutory retiring age in 1999.

But Ron was already thinking ahead and during the last decade of his service, he became passionate about the RSL. From 1991, he served as the president of the Pine Rivers Sub-Branch for nine years and was most instrumental in raising and becoming the inaugural deputy district president of the Brisbane North District of the RSL in 1998.

Mr Glew stepped up to the district presidency from 2000 till 2005 and again served a parallel executive position as a state vice president of the RSL from 2003 till 2006. For his endeavours with the RSL, he was granted Life Membership. During this time Ron also formed Air Defence Queensland, an association for former members of this facet of artillerymen. He proudly led their inaugural participation in the Brisbane Anzac Day March in 2007. Over the last 12 months, Ron became very energetic behind the scenes of the Caboolture Orchid Society and was studying to become a judge.

Ronald James Glew, passionate air defender, retired major and RSL stalwart passed away suddenly on 8th August 2009. His final parade was held at Burpengary near Caboolture, Queensland where the chapel overflowed with his former service mates, RSL members, friends and family. His wake at the Caboolture RSL resounded with laughter from many stories of a life of commitment and passion. Gone to that Great Gun Park up above at just 65 years of age.

Major Karl Heinz Doehrmann

Mr Kevin Browning OAM & Mrs Margrit Dutton



Karl was born on 15th June 1933 in Freiburg-Breisgam (Black Forrest) Germany to Wilhelm and Margaretha Doehrmann. His father was the

Director of the Southwest German Philharmonic Orchestra, which led to Karl's love of classical music, which remained with him for the rest of his life.

Karl graduated as a Chemical engineer from Isny-allga University in Bavaria. He then worked for an American Oil Company in Libya and other Middle Eastern countries between 1954 and 1958. Upon his return to Germany he took up employment with American Express in Munich.

He immigrated to Australia in 1962 and following problems in having his qualification recognised - he actually refused to do the test which were based on the text of a book he had written, he crossed the road and enlisted in the Army in October 1963. The chemical engineering loss was the Army's gain. Karl was trained as an Artillery Surveyor with 131st Divisional Locating Battery and on his first tour in Vietnam was selected with one other to study the American meteorological system which provided meteorology for the Australian guns. At that time there was no such component in the Australian Artillery.

In August 1966 he was wounded when the Nui Dat base was mortared the night before the Battle of Long Tan. It was a light wound but caused much humour to others, but an annoyance to Karl, over the years as they would ask him to show them his wound. The area was that part upon which one sits.

Upon his return to Australia he was sent to the Australian Meteorology Bureau in Melbourne. The aim was to establish a Meteorology Section in the RAA. In 1970 Karl returned to Vietnam as the Survey/Sound Ranging Sergeant. Upon his return to Australia he was commissioned.

Karl's postings included the School of Artillery at North Head as an Instructor and in Development Wing, battery captain of 130th Gun Locating Battery, staff officer in Papua New Guinea from November 1970 till February 1974. Karl's last posting was Officer Commanding District Support Unit Randwick NSW. Upon retirement Karl was offered the position as the 'Corrective Services Commissioner' for NSW. There would be a lot of prisoners letting out a sigh of relief that he didn't take on this role.

Karl did not tolerate fools lightly and always expressed his views. Those who knew him will often recall the times when he would question your intelligence in that wonderful German accent 'What you got 'S--T' for brains?'

Karl died on 10 August 2009. He is survived by his wife Joan, children Bianca, Michael and Margrit and their families. At Karl's request there was no funeral service.

Warrant Officer Class One Geoff Sexton

Major Kym Schoene OAM

Warrant Officer Class One Geoff Sexton enlisted in March 1976 and after initial employment training he served with 8th/12th Medium Regiment, 1st Recruit Training Battalion, 4th Field Regiment, 4th Training Group, School of Artillery, 16th Air Defence Regiment, Headquarters Logistic Support Force, District Support Unit Sydney and BASC Liverpool. Geoff commenced his service with the RAA and worked on the gunline in both 8th/12th Medium Regiment and 4th Field Regiment when he requalified in logistics remaining in the RAA until compulsory transfer to RAAOC in 1998. Warrant Officer Class One Geoff Sexton died on Tuesday 25th August 2009 following complications associated with a brief battle with cancer.

Warrant Officer Class Two John William Bird

Colonel Arthur Burke OAM (Retd) & Mr A.J. Hutcheson

3411210 Warrant Officer Class Two John William Bird was born on 12th November 1943. He enlisted in the Army Regular Army on 21st May 1962. In 1965 he served as a gunner with A Field Battery in Malaysia and with 102nd Field Battery in South Vietnam from 8th May 1968 to 11th March 1969. After being promoted sergeant he served with 16th Light Anti-Aircraft Regiment in 1972-73; 106 Battery Trials Unit 1976-77 and Headquarters Battery 4th Field Regiment in 1978. Following promotion to Warrant Officer Class Two he was appointed Sergeant Major Instructor in Gunnery at 39 Battery, 10th Medium Regiment in 1980. He discharged on 23rd August 1982.

Sadly, another young Gunner has gone to that Great Gun Park up above at only 65 years of age. Warrant Officer Class Two John William Bird passed away on 25th August 2009. Vale 'Birdie' May God bless you.

Warrant Officer Class Two Stephen 'Stretch' Williamson

Major Kym Schoene OAM

Warrant Officer Class Two Stephen 'Stretch' Williamson enlisted in the Australian Regular Army in 1975 and after recruit and initial employment training he was posted to 1st Field Regiment, where he was employed as a gun number, driver and operator command post as a gunner and bombardier. He qualified in Survey in 1981 whilst posted to P&EE Port Wakefield.

Returning to 1st Field Regiment in 1983 and promoted sergeant in 1984 to 4th Field Regiment as an operator command post sergeant. By 1986, he had commenced training as a quartermaster and posted as a staff sergeant quartermaster sergeant at 7th Field Regiment in 1987 returning to 4th Field Regiment, now as a battery quartermaster sergeant in 1991. In 1993 he served with 7th Field Battery and promoted warrant officer class two transferring to the Army Reserve in 1995 and remaining with 7th Field Battery until he completed his service in 1996. He had remained RAA throughout his career and did not transfer to RAAOC.

Warrant Officer Class Two Stephen 'Stretch' Williamson died in Perth on 26th July 2009 after losing his battle with cancer. I was lucky enough to have served and laughed with him over the years. Sadly, we have lost another character of the RAA. Vale 'Stretch'.

Private Deenel Jeneen Park

*Barry Willoughby
President 23 Field Regiment Association*

F2308292 Private Deenel Jeneen Park was born on the 13th February 1961 at Newcastle. She attended school and spent most of her young years in the Newcastle area before moving to Sydney. Deenel joined 23 Field Regiment at Kogarah in 1987 and entered into the Catering stream. During her four years service Deenel transferred to the clerical stream. She attended exercise Tasman Reserve in New Zealand in 1990 as a cook. Deenel discharged from the Reserve to focus on her family. She joined the 23 Field Regiment Association in 1994 and in 1998 was elected to the position of honorary secretary and held that position until her passing.

During her appointment as secretary, Deenel showed dedication and loyalty to the Association, and her innovative characteristics came to the fore during the instigation of the Association's website and the many newsletters provided for the enjoyment of members. Additionally, she provided much willing and enthusiastic support to the various sub-committees thereby contributing significantly to our achievements.

Deenel Jeneen Park passed away on Sunday 22nd March 2009, after a long bout of cancer. Peter Merlino represented the Association at her funeral and he placed a poppy on her casket in our memory. Deenel will be sadly missed by the Association, especially by the Association Executive. May she rest in peace.

Queens Birthday Honours

Order of Australia Medal (General Division)

Brigadier Douglas Ivan Perry RFD ED (Retd)

For service to the community of the Mornington Peninsula.

Colonel Donald Montague Tait (Retd)

For service to veterans, and to the preservation of artillery history and heritage.

Conspicuous Service Medal

Warrant Officer Class One Michael James Spring

For meritorious achievement as the Personnel Operations Warrant Officer, Directorate of Operations - Army



Customs & Traditions

Christopher Jobson
Former RSM Ceremonial & Protocol - Army;
Author of RAA Customs & Traditions &
Customs & Traditions of the Australian Army

Regimental Mottos

The Royal Regiment of Australian Artillery has two mottos. Both were granted to the Regiment by His Majesty King George VI in 1950. The mottos are *UBIQUE* (Everywhere - which is also the Regiment's Battle Honour) and *QUO FAS ET GLORIA DUCUNT* (Whither right and glory lead). There is some debate as to whether the second motto's first word is 'whither' or 'where'; however, both are deemed to be acceptable.

The origin of the mottos goes back to 10th July 1832 when the *London Gazette* proclaimed that His Majesty King William IV had granted them to both the Royal Regiment of Artillery and the Royal Engineers. The *Gazette* also stated that *UBIQUE* was granted to the Gunners as a Battle Honour (the Royal Australian Engineers also has *UBIQUE* as a motto; however, it is not their Battle Honour, and they do not have *QUO FAS ET GLORIA DUCUNT* as a second motto).

The Australian Artillery has had, over time, many mottos and they include:

- *CONSENSU STABILES*. The Regiment's motto prior to 1950 when it was replaced by the current mottos (there are three interpretations as to the translation of the motto; 'Strong in Agreement', 'Firm and Ready' and the most accepted 'Firm and Steadfast').
- *PRO ARIS ET FOCIS* (For pride and Hearths). Queensland Field Artillery, and the Tasmanian and South Australian Garrison Artillery.
- *CUSTODES PORTARUM* (Guardians of the Gates). Queensland, Victorian and New South Wales Garrison Artillery.
- *SI VIS PACEM PARA BELLUM* (If you want peace, prepare for war). Western Australia Field Artillery.
- *CAVE FULMEN MEI* (Beware my Fire). South Australia's No: 1 Australian Garrison Artillery Company.

- *JAMAIS ARRIERA* (Always to the Fore). Western Australia Garrison Artillery.
- *SEMPER FIDELIS* (Always Faithful). New South Wales Artillery (there is an incorrect line of thought that the motto was *SEMPER PARATUS* - Always Ready, and this has been adopted by A Field Battery as its motto).
- *TARDUS ET DEFINITUS* (Slow but Sure). 106th Field Battery.
- *SWIFT TO STRIKE*. 41st Field Battery.

White Lanyard

The lanyard had a genuine purpose in war. It was originally a piece of cord, approximately a metre in length, used to secure a jack-knife which was issued to both the artillery and the cavalry. The knife had a number of uses: the blade was for cutting-loose horses which became entangled in the head and heel ropes of the picket lines, and the spike of the knife was used as a hoof pick for the removal of stones from horses' hooves. A fuze key was also attached to the lanyard.

Hanging loose, the lanyard soon became dirty and for the day-to-day barrack routine it looked out of place on an otherwise smart uniform. So for peacetime purposes, the lanyard was plaited and blanched white, to match both the white bandolier and the white waist belt worn by the gunners of the day. The lanyard was worn on the left shoulder, with the end, containing both the knife and fuze key, tucked into the left breast pocket.

In 1920, the lanyard was moved to the right shoulder, simply to solve the problem of trying to remove the knife from the pocket behind the bandolier. By now the bandolier and the belt, worn with battle dress, had long ceased to be white, whilst the lanyard remained so. The knife was removed in 1933 and the lanyard then became a straight cord, worn purely as an ornamental item of dress. In 1955 it was, for a short time, re-introduced in the plaited style but it quickly went back to the straight lanyard currently worn today.

All Corps' wear the lanyard on the right shoulder. However, both A Field Battery, of the Royal Regiment of Australian Artillery, and the battalions of infantry regiments wear their lanyards on the left shoulder. A Field Battery just did not bother to change in 1920 (there is no truth in the story of the Prince of Wales authorizing the Battery to wear the lanyard on the left shoulder for services to himself and the Empire), and the infantry regiments use

different coloured lanyards on the left shoulder to identify their various battalions (eg in the Royal Australian Regiment, the 1st Battalion wears a Garter Blue lanyard, the 2nd Battalion wears a Black lanyard).

As time has gone by other Corps' and units have adopted the lanyard as an item of dress, wearing it in their own appropriate Corps colours. However, it is perhaps interesting to note that a good many gunners today still wear a lanyard in the field, to which is attached a modern version of the clasp knife.

There is another item of dress which is often confused with the lanyard, the aiguillette. The aiguillette was originally a piece of cord worn by the cavalry, for the sole purpose of tying-up bundles of forage.

Salutes & Victoria Cross Recipients

There is a common misconception that recipients of the Victoria Cross are saluted; the reality is that they are not. The two Army publications that deal with the protocols of saluting are the *Drill Manual* and the *Ceremonial Manual*, and neither of these mentions the saluting of Victoria Cross recipients.

The current edition of the Army's *Drill Manual* specifies that commissioned officers are saluted and it also lays down that salutes are given during the raising and lowering of the National Flag; during the playing of the National Anthem; to 'Vehicles flying distinguishing pennants, personal standards or with star-plates uncovered'; and as '...an act of courtesy to ... (civilian) ladies when greeting them'.

The current edition of the Army's *Ceremonial Manual* states that '...compliments are not paid to an individual as such but to either The Queen's Commission, to the office, or out of respect to the sovereignty of a foreign country'. The Manual also describes salutes as being paid to commissioned officers of the Australian Defence Force; to commissioned officers of the armed forces of any nation formally recognized by the Australian Government; and to distinguished persons listed in the relevant Chapter's Annex (and nowhere within this annex are Victoria Cross recipients mentioned).

The *Ceremonial Manual* also states that salutes are given in relation to Standards, Guidons, Colours and Banners; during the raising / breaking and lowering of both the Australian National Flag, and Royal Australian and Royal Australian Air Force Ensigns; at war cemeteries, war memorials and funerals; to armed Corps' and parties; during the

playing of the Last Post and Reveille/Rouse at commemoration ceremonies; to naval ships of Australia and its allied defence forces; and the playing of national anthems. Again, no mention is made of Victoria Cross recipients.

Added to this is the reference in the current edition of the Army's Protocol Manual, which quite clearly lays down (within the Dignitaries Table) that Victoria Cross Recipients '...unless they are serving commissioned officers in the Armed Forces, are NOT saluted.'

The Victoria Cross Warrant, issued under the authority of The Sovereign, lays-down, amongst other matters, the rules and ordinances covering the award. To date there have been five warrants issued, the latest being that under the authority of Her Majesty Queen Elizabeth II, dated 30th September 1961. If recipients were to be saluted, regardless of their rank, it would be laid-down within the Warrant; however, it is not.

In January 1991, in Australia, the award was re-designated as the Victoria Cross for Australia and brought into the Australian Honours System. Again, no mention is made of saluting recipients in the accompanying Regulations (dated 15th January 1991 and signed by Her Majesty), nor the award's determination (dated 11th November and signed by His Excellency the Governor-General).

It should also be noted that the term, stated within the Warrant, for a person who receives the Cross is 'recipient'; the term 'winner' (that is, a Victoria Cross winner) is incorrect.

Leading Edge

There is a great deal of confusion with regard to the placement of the Australian National Flag on dress, vehicles, aircraft, etc. When the Australian National Flag is worn on the right arm, or placed on the right (starboard) side of an aircraft, a vessel or a vehicle, etc, it is seen in the 'reverse'; that is, the Union Flag is to the top right as seen by the observer. The same protocol applies with the Army's Series 1 colour patches. The reasoning behind this is the 'leading edge'.

The position of prominence, as laid down in Heraldry Protocol, is to the left, as seen by the observer, or to the front (hence the term 'leading edge'). For example, on all Defence and QANTAS aircraft the Australian National Flag, when displayed on the starboard side, is seen in 'reverse', with the Union Flag pointing towards the front of the aircraft (the same protocol is applied when the Flag is on vehicles, sea vessels, etc). If the

Australian National Flag is to be worn on the upper arm of the right sleeve the same principle is applied; that is the Flag is worn in 'reverse'.

As stated above, the same procedure applies to colour patches. That is the patch, when worn on the puggaree, is in its 'reverse' image, with the 'leading edge' facing towards the front of the wearer.

RAAHC News

Mr Kevin Browning OAM
President RAAHC

Proposed Move of Museum

The major topic of the past six months regarding the Museum centred on its proposed move to Puckapunyal. I received quite an amount of flak over this but also a great deal of support through concerns raised at the prospect. There was a lot of ignorance shown, including from myself, but hopefully we are all starting to appreciate the reality of the situation.

The last we heard came through an article in the Manly Daily on 21st July 2009 the content of which is outlined below.

COMMONSENSE has prevailed with former Federal defence minister Joel Fitzgibbon confirming the North Fort Artillery Museum will not be relocated to country Victoria now or any time in the future.

The former minister's belated response to a question on notice from Warringah Liberal MP Tony Abbott is at odds with previous statements from the Defence Department that stated moving the museum to Puckapunyal was a long-term plan, when finance was available. The plan came to light when the museum's volunteers were told the move would happen in the future.

The volunteers were reluctant to comment yesterday until they had been officially advised the move was no longer on the agenda.

But Mr Fitzgibbon, who resigned as defence minister in June, categorically ruled out a relocation in a response he gave to questions from Mr Abbott. Mr Abbott asked whether there was a plan to relocate the museum, and if so, in what time frame.

The former defence minister's response was succinct: 'No.'

A spokesman for the current Defence Minister, John Faulkner, confirmed Mr Fitzgibbon's stated position was policy. 'It's terrific news. There's a sense that you always have to be vigilant here because I suspect that the defence planners are always eyeing off a far-flung outpost,' Mr Abbott said.

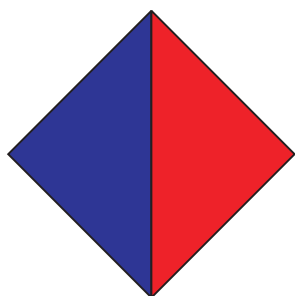
He said the seemingly contradictory response from Mr Fitzgibbon to that previously given by the Defence Department was not surprising given the nature of the defence bureaucracy.



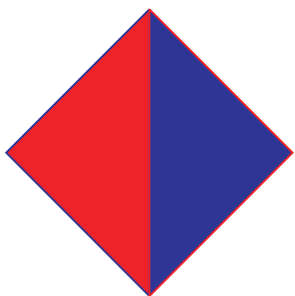
The Australian National Flag as seen on a chart, a sign or on the left (port) side of an aircraft, dress, etc.



The Australian National Flag as seen on the right (starboard) side of an aircraft, dress, etc.



A colour patch as seen on a sign or letter-head.



The same colour patch as seen when worn on the right side of headdress.

'Defence is one of these organisations where the left hand does not always know what the right hand is doing. There are all sorts of things that are taken for granted inside Defence that if opened up to public scrutiny would not stand up, and I suspect this is one of those cases.'

Manly Liberal MP Mike Baird said the decision was the only logical one to make.

Since then I have received a copy of a letter sent to another 'concerned Gunner' in answer to a question to his local MP. The letter from The Hon Dr Mike Kelly AM MP, Parliamentary Secretary for Defence Support (dated 4th August 2009) includes the following advice:

The Artillery Museum is the Corps Museum of the Royal Australian Artillery and belongs to the Army History Unit/museums network. Its principal role is to support Army training and it achieves this through the retention of the doctrinal history of the artillery; by illustrating equipment development and evolution over time; and by acting as a research centre for Corps military history. In so doing, the museum reinforces Corps spirit.

Because of the importance of museums to the development of corps spirit, the Chief of Army stated in September 2005 that corps museums are to be collocated with corps schools. Since that time, the Army History Unit has anticipated a future move for the museum to Puckapunyal in accordance with the directive. Presently there is no allocated funding, however, it remains a long term aim. I can confirm that at present there is no funded plan to move the Artillery Museum from North Head.

The Chief of Army co-location requirement is stated in a Defence Instruction (Army) signed in 2005. At the time it was signed I wonder how many of the Corps Museum's were not collocated with their Corps School. I suggest the answer is 'one'. I wonder who is the author of the document.

All that aside there is no doubt there is a requirement at the School for historical items and unless I am mistaken it is being met currently and without the added burden of having to assist the Museum. So a question really is what level of support is required at the School? Then should the Museum be collocated what level of support would be expected from the School to assist with the Museum? This is really academic at present as funding for the move is really something well into the future.

Another part of the equation regarding the move is the ownership of the site at North Fort. When the School moved in 1997 an area at North Fort was surveyed and set aside for retention by Defence.

For some unknown reason the North Fort area was included in the hand back of land when title was transferred to the Sydney Harbour Federation Trust. So basically we understand negotiations are underway to decide what 'rent' Defence will have to pay to trust to remain at North Fort. Hopefully commonsense will prevail. We appreciate there is a lot of work going on in the background to achieve a good outcome and we wish all involved a successful outcome.

Present Happenings

In the meantime life goes on at North Fort with mixed success but always moving forward. Recently we returned the Diary of a fallen Japanese Marine to his family (see separate article in this Liaison Letter edition). This saw the wishes of its donor Lieutenant Chisholm Cutts, former member of 1st Australian Mountain Battery (A Battery), realized. It resulted in very good media coverage both here and in Japan.

The volunteers continue to provide very good service to the Museum. Whilst the RAAHC is the principal volunteer organization there are two other organizations that provide very good volunteer support. They are the Locating Artillery Association and the 18 LAA Association or better known locally as the Armco Group. Collectively we provide the people to allow the Museum to function. Tasks presently under way include:

- Cataloguing the collection items into the accession register;
- Cataloguing the library collection;
- Restoration of a:
 - 18 Pounder Mark II (World War I vintage);
 - 150 cm SLC searchlight;
 - 150 cm Sperry searchlight;
 - No 6 Bofors Blitz;
 - 76 mm Light Minenwerfer; and
 - Japanese 20 mm Anti aircraft gun.

To place the above in prospective we estimate the value of the work being undertaken, had it been contracted out to civil contractors, would be in the vicinity of \$500,000. A display on anti-tank artillery is nearing completion thanks to the efforts of Warrant Officer Class Two Peter Armstrong and staff.

Restoration Projects

As examples of some of the restoration tasks undertaken by the volunteers the two larger projects are the 150 cm SLC searchlight and No 6

Bofors Blitz. The Blitz vehicle was purchased from a private collector with the intention to use it for towing the 25 pounder gun. However, it was found to be of a longer wheel base and further investigation revealed it was used for the No 6 Bofors configuration as used during World War II and post war period. The vehicle has been restored and work is about, as funds are raised, on the body. The vehicle was Australian designed.

No 6 Bofors Blitz



Top: Original condition
Middle: Prior to recovery
Bottom: Undergoing restoration

150 cm Searchlight Control



Top: World War 2
Middle: Start point
Bottom: Work continues

There were four basic models of searchlights used in air defence during World War II. The Museum is fortunate to have examples of all four. The 150 cm Searchlight Control (SLC) commonly called 'Elsie' was the 150 cm model fitted with radar.

We also receive a large number of enquiries about artillery or artillery related subjects. These enquiries consume a large amount of time but are beneficial to all involved. Recently we received a request about enemy anti aircraft equipments in Vietnam which was used to assist in the search for the two missing in action Australian pilots. Their recent recovery was ample reward for any assistance provided. Assistance has also been provided with archaeological work undertaken on fortifications around Australia. The reports are valuable for the future maintenance of the sites.

A major research project was completed during the year and work is progressing on placing the information on the web. It was conducted through funding provided from the New South Wales Heritage Office and involved recording the historical artillery pieces in New South Wales. The plan, once the web is running, is to complete the same work for all States and Territories of Australia. A number of guns are being recommended for placement on the New South Wales Heritage Register. It is one of the projects identified by the RAA History Sub Committee.

Acquisitions

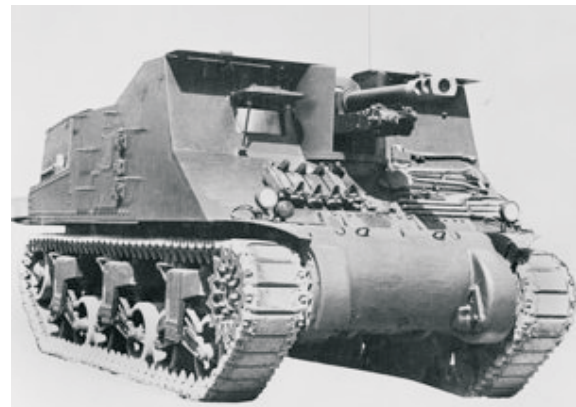
The acquisitions for the Museum continue and we have had some good results and also some set backs. Work also continues on locating and acquiring a number of other items. A major task which will be continuing is to identify the objects that should be in the collection. Whilst we are trying hard to identify the objects of the past we should not lose sight of the items that are presently in service. Identify them now and await their availability. Recently the Museum obtained a Boyes anti-tank rifle. Sir Roden Cutler used one during the actions leading to his award of the Victoria Cross.

The Museum also received a second 105 mm M2A2. Both guns in the collection saw service in Vietnam but interestingly the gun histories only record their service with the Kiwi 161st Field Battery.

The greatest disappointment came recently when we were advised the *'Minister of Defence has directed all Leopards going to Museums, RSLs etc, are to have their asbestos removed.'* Clarification of this was requested and we were advised *'The obvious place is the engine bay surrounds and exhaust protection. That in itself does not cause a major problem. The problem begins with every gasket, washer and brake pad. All of which will be removed. The real issue, though, is that a majority of component parts have asbestos within them and they won't be dismantled to remove the asbestos but the entire component removed. The component parts*

control/provide power and hydraulics.' This advice has a dramatic effect on a project we have been working on for over 20 years - the acquisition of a Yeramba Self Propelled 25 Pounder.

There were 14 Yeramba produced and when disposed they all appear to have had their upper armour removed for other uses. There are only four remaining. We had negotiated the swap of a Yeramba but had difficulty in finding a suitable item. When the disposal of the leopard tanks was announced we asked whether one could be made available for our purpose and it was agreed. Based on that the collector commenced restoration and now with only months to go before it would have been exchanged the above announcement was made. Our arrangement was for an operable Leopard. We appreciate the asbestos problem but the collectors cannot remanufacture components. A request has been made through our local member for the Minister to reconsider the blanket requirement to enable the exchange to proceed.



Original Yeramba

Cannonball and Membership

Due to a change in arrangements between the RAAHC and Defence we are no longer able to provide free copies of Cannonball to RAA units and specified units. It is regretted that this has been forced upon us as it was the only source providing information on heritage items to the Regiment. We hope the RAA units will consider becoming affiliated with the RAAHC thus providing a continued source for Cannonball and also providing the RAAHC with increased representation.

Finally I wish to express our thanks to Major General Tim Ford and Brigadier Vince Williams for their support during the trying events of the past year. We also wish to acknowledge the assistance provided by the staff of the Head of Regiment.

Lingo changes with the times

By Maj Adam Worsley

RECENT changes to operational terminology now better reflect the Army's capability in coordinating and executing joint fires and effects such as mortars, artillery, rockets and naval gunfire on the modern complex battlefield.

The terminology changes are designed to simplify wider understanding of the array of systems, procedures and techniques that have entered the offensive support battlefield operating system during the past few years.

RAA Head of Corps Brig Wayne Goodman said the terminology changes embraced the knowledge and experience that corps members had brought back to Australia following coalition operations in Iraq and Afghanistan.

"The old Joint Offensive Support Coordination Centre has been renamed the Joint Fires and Effects Coordination Cell (JFECC) to better reflect its role in supporting joint land manoeuvre at the combat team, battlegroup, brigade, division or joint-task-force level," Brig Goodman said.

The JFECC is now principally concerned with the synchronisation and coordination of all effects, kinetic and non-kinetic, in support of the joint land force.

A forward observer now commands a six-man joint fires team (JFT) instead of the previous joint offensive support team (JOST).

The JFT consists of a command element within the supported company headquarters and two splinter teams that can be allocated to the company's platoons.

The JFT has the ability to coordinate the delivery of mortars, artillery, rockets, naval gunfire, close combat attack aviation and close air support for the company.

An infantry battalion's organic mortar-fire controller party is incorporated as a part of the JFT, allowing extra expertise and experience to be distributed among the JFT.

A JFT is designed to enable combat teams to have timely access to accurate and well coordinated joint fires-and-effects to shape or defeat the enemy." Brig Goodman said every JFT would ideally have at least one joint terminal attack controller (JTAC).

"All JFT splinter-team commanders would also be qualified as a joint-fires observer enabling them to coordinate close air support, with a JTAC supervising the terminal control," Brig Goodman said.

"Most importantly, the new structure allows a JFT to better support a combat team in complex environments and improves access to joint fires and effects for those in the battle."

Regiment's celebration

By Capt Alastair McPherson and Tpr Michael Franchi

IT WAS a proud day for the young gunners of 1 Fd Regt who stood with veterans of Vietnam and Malaya to celebrate the regiment's 60th birthday at Gallipoli Barracks on May 25. The celebrations started with a service to the fallen conducted by the unit's padre, Chap Neil McKinlay, to a full house at the All Saints Chapel. An all -ranks luncheon was held afterwards at the Gunners Club. CO 1 Fd Regt Lt-Col Stuart Kenny served as a young officer at the regiment from 1992 to 1994 and being there for the unit's 60th birthday was significant. "Coming back as the CO for the 60th was quite important to me. There were a lot of friends and comrades I served with here," Lt-Col Kenny said. "But more importantly it reminded me of the length and depth to which the regiment had served the nation both in peace and in war. "Members of the 105 Mdm Bty Association, some of them veterans of the battles, attended the day's events. Arthur Clendinen, who served in Malaya and in Vietnam, remained proud of his service and the close relationship the regiment maintained with his association. "The association has always had a close relationship with the regiment. Once an artilleryman always an artilleryman," Mr Clendinen said. 105 Mdm Bty Association formed in 1993 with a membership of 300 boasting new and old gunners. Greg West, a Vietnam War veteran of 1969-70, said the association had one member in Helmand province with the British. Fifteen personnel have deployed to Afghanistan to provide fire support to combat operations in Helmand province. Lt-Col Kenny said up to another 70 might deploy to Afghanistan next year. "We also have a contingent going to East Timor next year," he said.

UNIT BATTLE HISTORY

Raised in Sydney in 1949, 1 Fd Regt was first based at North Head and by 1955 it was providing field batteries to support Australian battalion groups during the Malayan Emergency. The regiment finally settled at Enoggera in 1983. 1 Fd Regt saw most of its operational service in Vietnam and was fully tested during the Battle of Long Tan in support of Delta Company, 6RAR. During the 3-hour battle they fired 3198 field rounds and 242 medium rounds. The regiment's next largest battle was at Binh Ba with more than 2000 rounds fired in 72 hours.

'Army' The Soldiers Newspaper - June 25, 2009

'Army' The Soldiers Newspaper - August 20, 2009

Operations

Helmand Stories

*Lieutenant Khalid Elkhaliqi
Troop Commander 105 Troop RA/RAA*

Firing rounds in anger in support of International Security Assistance Force (ISAF) patrols whilst deployed to Helmand Province, Afghanistan with the United Kingdom (UK) armed forces is proving to be an experience of a lifetime for 15 Gunners from 105th Medium Battery, 1st Field Regiment.

The soldiers from RAA Troop Afghanistan - Three have deployed to Helmand Province with 40 Regiment (The Lowland Gunners) Royal Artillery after completing six months pre-deployment training in the UK. The majority of the soldiers belong to the 4th gun troop of 40 Regiment, which is a composite troop from across the regiment and has been named 105th Troop Royal Artillery / Royal Australian Artillery (105 Tp RA/RAA) in honour of the 'Aussie Gunners'. The only member of the contingent not with 105 Tp RA/RAA is Captain Trevor Watson who is the joint fires and ISTAR cell commander and occasional forward observer for BG (NW). Throughout the pre-deployment training and the operational deployment 105 Tp RA/RAA has been commanded by Lieutenant Elkhaliqi with the Troop Sergeant Major being Warrant Officer Class Two Shaun Graham.

*The threat of enemy action
against the troop is very real and
is always present as the FOB is
only 200 m from the Green
zone ...*

In late March 2009, the troop conducted its final preparations in Northern Ireland before departing on a civilian chartered flight to Minhad Air Base, Saudi Arabia, then boarding a C17 direct to Camp Bastion, Helmand Province. A thorough Reception,

Staging, Onwards Movement & Integration (RSO & I) package was conducted, which consisted of range practices, operational briefs, improvised explosive device (IED) clearance practice, medical revision and electronic counter measures revision. The troop then departed Camp Bastion on two Chinooks and arrived 14 minutes later at Forward Operating Base (FOB) Armadillo in Battle Group Centre on 1st April 2009. The relief in place with the previous troop from 29 Commando Regiment RA was completed smoothly in one day as Lieutenant Elkhaliqi and Warrant Officer Class Two Graham had arrived a few days earlier to sign for the equipment and take over command of the position.



105 Troop RA/RAA Flag

The FOB is commanded by a Danish infantry company headquarters as they are the largest manoeuvre arm in the FOB. Residents of the FOB include the attached UK assets to support the company and other callsigns within the Danish BG. This includes a UK Royal Engineers detachment, a UK Guided Multi Launch Rocket System (GMLRS), a UK Light Counter Mortar Radar (LCMR) detachment and UK signals detachment and the occasional visit by the Danish tank troop.

Immediately on arrival the troop commenced work resighting and reinforcing defensive positions,

reorganising gun platforms and improving accommodation. After the internal positions were improved, Warrant Officer Class Two Graham conducted a recon patrol in the dead ground in front of the troop's sector perimeter to assess our vulnerabilities, check our wiring gaps and claymore sighting. Weekly patrols have been conducted on a regular basis to continue to improve and resight our field defences. Ground dominating patrols by day and night have also been conducted to deter and observe local nationals, identify support to the Taliban and identify depth firing points used by the Taliban to engage the FOB from their maximum range. During all of these patrols, the IED clearance technique called Operation Barma, has been utilised, seeing our Gunners clear vulnerable points and routes with UK mine detectors with no assistance from other arms.

... the troop had engaged on 41 fire missions, and had laid on numerous others totalling 999 rounds fired in anger ...

During the initial week a solid FOB routine was established, which was vital as the troop operates independently from the Regiment in almost every way, except for resupply. We are responsible for our own excrement burning, cooking, cleaning and defence of our sector of the FOB. The troop is responsible to fully man the strong point in its sector and reports directly to company headquarters. The threat of enemy action against the troop is very real and is always present as the FOB is only 200 m from the Green zone and the troop's sector and strong point is located on the closest corner to the Green zone. The soldiers do however get to enjoy the spectacular views towards the Helmand River, with the mountains of Kandahar in the background when they are on gun piquet.

Every week a small arms range practice is conducted outside the wire on the desert side of the FOB to ensure that all section and troop weapons are thoroughly checked. SA80 ranges are also conducted which have progressed in complexity up to live fire fighting withdrawals.

The soldiers have made life as comfortable as they can in their accommodation, even though they have been sleeping on stretcher beds and mosquito domes in low ceiling Hesco houses under their guns for the past four months. Food at the gun position is basic; consisting of travel cereal packs with powdered milk for breakfast, a US MRE for lunch

and a cooked UK ten man ration pack meal for dinner. The meals are now becoming very creative as the soldiers are using field ovens made from ammo boxes to make bread and cakes. The troop also maintains its high level of fitness with a troop gym and regular PT sessions.

The troop is near guaranteed fire missions on every occasion that the Danish infantry platoons conduct active patrolling in the Green zone. This at times is up to five days per week. They frequently get in contact with the enemy and always use the guns as their primary fire support. As at late July the troop had engaged on 41 fire missions, and had laid on numerous others totalling 999 rounds fired in anger in support of Danish and UK infantry callsigns.

All contacts have been between 900 m to 2000 m from the FOB which means that the troop can observe its fall of shot, watch air support engage with 500 lb bombs, see A10 Warthogs conduct strafing runs and Danish tanks engage with 120 mm rounds from the desert into the Green zone. The other result of the contacts being so close to the FOB is the high threat of ricochet and 'spill over' rounds coming over the wall from the contacts. The gun detachments always wear body armour and helmet when manning the guns, due to this threat and the fact that the gun platforms are raised leaving the detachments exposed above the Hesco perimeter walls. The raised gun platforms are required due to the Hesco walls presenting local crests to the guns when we engage at minimum ranges.

All contacts have been between 900 m to 2000 m from the FOB which means that the troop can observe its fall of shot ...

Some highlights of the tour include the troop's involvement in an incident which required the FOB to launch a hasty multinational quick reaction force (QRF) commanded by elements of 105 Troop to assist a UK Operational Mentor and Liaison Team (OMLT) patrol under heavy accurate sustained fire. The QRF consisted of elements from all callsigns within the FOB and utilised Danish vehicles for transport and fire support.

FOB Armadillo has also recently received its first enemy stand off attack. The troop received sustained small arms fire from around the gun position from 5 different firing points as well as coordinated Taliban indirect fires (IDF). This fire,

including RPGs, detonated behind and within the walls of the FOB. During the contact the Troop received a counter battery fire mission on the IDF point of origin provided by the LCMR detachment. The IDF point was silenced after 14 high explosive proximity rounds from the troop.

The troop received sustained small arms fire from around the gun position from 5 different firing points as well as coordinated Taliban indirect fires ...

During a large Danish operation to clear the Taliban Forward Line of Enemy Troops (FLET) further away from the FOB, a high value target was identified and engaged with high explosive rounds from our troop, 500 lb bombs from F15's and 120 mm rounds from Danish Leopard 2 tanks simultaneously. The combined engagement of this target was very exciting to be apart of. The day was then topped off when the troop fired a 60 round smoke screen to allow the tank troop to disengage from the contact.

It has been an extremely rewarding experience working as a combined troop supporting Danish and UK infantry in an international FOB. The troop has learnt so much and has been constantly praised by the Danes for providing first class fire support to them on the ground. There is an enormous trust and respect for the life saving, combat multiplying capability that gun troops can provide. This same capability is present in the RAA today.



FO Lessons in Afghanistan

*Captain Andrew Ludlow, 101st Medium Battery
8th/12th Medium Regiment*

Introduction

I was deployed as the Joint Fires Team (JFT) commander for Combat Team (CT) Tusk as part of the Mentoring and Reconstruction Task Force from October 2008 to July 2009. CT Tusk's role was to provide force protection to the other components of the 7th Battalion Battle Group, being the Engineering Task Group and the Operational Mentoring and Liaison Team.

My JFT comprised of six personnel, split into three separate Splinter Teams. The initial composition had myself and a signaller forming the CHQ component and two separate Splinter Teams comprising a bombardier as commander and a signaller that were attached to the platoons as required for patrolling.

The following is a summation of some of the lessons learnt on my tour covering my duties as a forward observer (FO), employing the JFT to support CT Tusk's operations, other duties I had to fill and the implications that had and Fire Support Coordination Measures and deconfliction.

An FO is not Just an FO

One of the biggest issues that I had to come to terms with personally was the fact that as a JFT commander, I was not the one doing the job as an FO like we train. In effect, I was a mini battery commander at CT level. My signaller and I manned our Bushmaster observation post vehicle (OPV) as a command post (CP), providing overwatch to dismounted patrols, ensuring the smooth passage of information up and down, allocating resources as required for the Splinter Teams patrolling, whilst also providing advice to OC Tusk on what the various sensor systems detected.

... as a JFT commander, I was not the one doing the job as an FO like we train.

This was quite a successful means of operating as it allowed me to be removed from the situation to analytically assess what was occurring and act accordingly. This enabled the Splinter Teams to fight the fight and for me to coordinate the resources and requests required to enable them to do their job.

However, there was one significant issue with the JFT construct, manning. The six man JFT was not sufficient to fully support CT Tusk, especially on dispersed operations. Having a company headquarter (CHQ) element and two Splinter Teams does not offer the JFT commander the flexibility to support three separate platoons on patrol, as would often happen. I was fortunate that on occasion I could have another Splinter Team attached for an operation, or if the mortar section was attached to CT Tusk I could use the section commander as a mobile fire controller (MFC) otherwise I would have to patrol, leaving no gunner with the CHQ to conduct the required liaison and planning. Unfortunately, this still left occasions where I could not support a platoon. A nine man JFT is the solution as it would allow a three pers CHQ Splinter Team and three separate Splinter Teams to support each individual platoon.

Trust Your Bombardiers

At the end of the day, the bombardiers were the ones out on patrol with the infantry dispersed over a wide area. They are the ones doing the hard work as FOs, not the officer in charge of the party. Any training opportunity was taken and given to them, to ensure they were at the top of their game, any support while they were out patrolling was requested and pushed to them in a timely manner. While the JFT overall was still commanded by me, I had to become an enabler for the Splinter Teams, coordinating the overall offensive support effort while they provided the intimate support to the platoons.

At the end of the day, the bombardiers were the ones out on patrol ...

Tied in with this, my Splinter Teams would sometimes be allocated independently to a BG element for an operation and I would not see them again for upwards of six weeks. This required the utmost of trust in my bombardiers as I had to give them their task, not always in person, and leave them to their own devices to achieve this, which they consistently achieved to a high standard.



Bombardier Thomas Grieve on patrol in Baluchi Valley with Lance Bombardier Justin Cowan, his signaller, in the background

Sound Knowledge of All Jobs and Equipment

As CT Tusk was not constantly patrolling or supporting other sub-units as a CT complete, there were occasions where I found myself working in the Joint Fires and Effects Coordination Cell (JFECC) or attached to other elements of the BG. This required my bombardiers and I to have an understanding of the procedures employed within the JFECC for conducting the required deconfliction with Task Force Uruzgan Headquarters. This relied on having a sound understanding of the procedures for establishing Fire Support Coordination Measures (FSCM) and understanding the battle rhythm of the BG CP, as we would all regularly be called upon to perform the duties of watch keeper in the JFECC.

I also had to have an understanding of the equipment employed by my Splinter Teams above what would normally be required, as I would also deploy independently on tasking as a Splinter Team, most of the time without my signaller as he was required elsewhere. This was made more apparent when I was deployed to a patrol base to command the Splinter Team while members were on leave. For the first week of this I was the only gunner at the patrol base. I became the communications guru by default, and took responsibility for all the crypto and signals equipment maintenance and upkeep, as well as the Splinter Teams equipment and performing the duties of an FO. This highlighted the fact that I needed to have as much an understanding of the employment of the different equipment that a Splinter Team utilises, as well as all other in service communications equipment, but must share the same understanding on how to use the equipment, conduct fault finding and even operator level maintenance to the same level as my soldiers.

The Basics Work

The basics that we all get taught at the various training institutions throughout our career saved lives. Simple things such as the obstacle crossing drills for the dismounted soldiers to the defile drills carried out at CT level all had a positive effect on the battlespace. Trigger men were displaced; wires and even improvised explosive devices (IEDs) were found often by these simple yet effective drills. The same held true for the gunners, basic map to ground appreciation and Area of Operations (AO) familiarisation allowed for quick and easy target indications and talk-ons to different elements. The solid understanding of radios, ancillaries and RAA communications procedures allowed for our signallers to constantly feed information higher, and ensured that we always had communications regardless of how dispersed our operations were. Our net was getting information to the CP 15 - 20 minutes before anything was received over other nets. This led to the key commanders listening to our net and making timely decisions to influence the battle.

The basics that we all get taught at the various training institutions throughout our career saved lives.

As JFT commander, all the basic skills I had learned throughout my career about battle tracking were invaluable. This ranged from assisting with the deconfliction of the platoons patrols to dealing with complex situations such as an IED find whilst a platoon was moving into a harbour, assisting CHQ with their movements but also dealing with the establishment of the ROZ for the engineers to destroy the IED, pushing the unmanned aerial vehicles (UAV) around to see if we could identify any suspicious activity, deconflicting with the Operational Mentor and Liaison Team (OMLT) Splinter Team as they moved with their supported elements through our AO with the Dutch and Afghan National Army (ANA) on a handover patrol and supervising the mortar section bedding-in into a safe area, but establishing the OC's intent by dispersing the group of fighting aged males that were congregating near our platoon patrol.

Fire Support Coordination Measures

Another significant issue that was encountered early in the tour was the fact that as gunners we have a sound knowledge of what FSCM are and what they are used for but never practice operating

with them, or even following through the procedures to establish and implement them within an exercise environment. This provided many issues early on in our lead up training and we deployed with a good base to build upon once we arrived in theatre. This also rang true for clear air/clear ground procedures, which are regularly overlooked in training and prove to be a war stopper on operations. Thankfully, the Reconstruction Task Force Four (RTF 4) gunners had established a simple and effective means for conducting this localised deconfliction, which we continued to utilise throughout our tour. Training at battery and regimental levels need to include these procedures and ensure that those responsible at all levels are confident on conducting the required deconfliction and drills to establish FSCM on the battlespace, and also have the clear air/clear ground procedure firmly established within SOPs and regularly practiced at all levels.

Conclusion

In conclusion this is only a synopsis of some of the lessons learnt from a long and successful tour. The move to a six man JFT is a step in the right direction for supporting CT operations; however, only having two Splinter Teams capable of patrolling is a significant issue. The FO needs to remain with CHQ and provide the relevant advice to the OC, whilst being removed from the situation and being an enabler for his Splinter Teams.

The RAA as a whole needs to conduct training at all levels on the procedures of implementing FSCM and the conduct of deconfliction such as Clear Air/Clear Ground. This needs to be developed so that members at all levels have a solid base understanding and can conduct the deconfliction required with the right agencies in a timely manner so that when we deploy into a coalition environment we are not having to start from scratch.

While it was a long, and sometimes trying, tour personally and professionally there is a lot that has been taken away. The main theme that I took away from the tour was that our training sets our soldiers up well for operations, but we need to focus on the smaller things to ensure that they are not an issue, and further ready ourselves for future deployments.

UAV in Afghanistan

Lieutenant Courtney Ames (UAV Group 3) & Lieutenant D. Mujkanovic (UAV Group 4) 20th Surveillance and Target Acquisition Regiment

Unmanned Aerial Vehicle Group Three

During the second half of 2008 I was deployed to Afghanistan as a member of Unmanned Aerial Vehicle (UAV) Group 3. Our small detachment was responsible for the provision of UAV support to both the Mentoring and Reconstruction Task Force (MRTF) and the Special Operations Task Group (SOTG), as part of Operation Slipper. As a second-year lieutenant relatively new to the RAA, my time overseas provided me with an incredible period of both professional development and life experience, examples of which I will share in this article.

The main role of Australian forces in Afghanistan is to assist with reconstruction within Oruzgan Province and to mentor members of the Afghan National Army (ANA). This is a highly challenging role, partly because the Afghan culture is vastly different from ours, and encouraging stability within such a volatile social and political climate will take many years. The UAV Group assists MRTF and SOTG achieve their mission by providing video and photographic information to both the headquarters and troops on the ground.

... my time overseas provided me with an incredible period of both professional development and life experience ...

The capability of the UAV detachment is of an intelligence, surveillance and reconnaissance (ISR) nature, to conduct tasks such as route reconnaissance, patterns of life surveillance, and convoy overwatch. The most challenging aspect of working with UAVs is the rapid development of technology and procedures, even when deployed overseas. Working closely with MRTF and SOTG encouraged us to continually adapt and improve our operations, and devise new methods of employing the UAV.

My exposure to external Australian and foreign capabilities was widened as I was lucky enough to be employed in varying roles during my time overseas. Primarily, I was the troop commander for the UAV Group and the liaison officer to MRTF1. As the liaison officer, I worked closely with the task groups we were supporting, which gave me a greater understanding of other capabilities within the wider army, and the significance of UAV support during their operations. In particular, I learnt how STA ties in with the wider RAA capability and the role of the Joint Offensive Support Coordination Centre (JOSCC) (Editor: now Joint Fires and Effects Coordination Cell). As the UAV group liaison officer, working with Dutch personnel responsible for ISR, air and artillery assets provided me with a different perspective of military service and operation.



As a watch keeper (duty officer), I gained valuable exposure to the ISTAR Cell (the headquarters for the UAV Group). This assisted in my understanding of how the UAV group integrates with the wider Australian element in Afghanistan. The highlight of my deployment was commanding a three-person detachment providing forward-deployed UAV support to SOTG. In particular, one of my most important lessons was gained from experiencing operations under the leadership of both UAV Group 3 and 4, as my deployment covered a month after the handover period to the next rotation. As a lieutenant serving within both groups, it allowed me to see two effective but different ways of approaching the same mission, and it has enabled me to witness different aspects of innovation and command.

Overall, I hope that my experience overseas has provided me with a solid grounding in technical

and administrative matters, leadership, and life experience.

Unmanned Aerial Vehicle Group Four

Major Roderick Lang led the fourth UAV Group to Tarin Kowt, Afghanistan in November 2008. Unlike our 'endearing mates' whom were sent for eight months, UAV Group 4 deployed for a six month rotation; which is something that we were continually reminded of by MRTF-1. Short deployment or not, the members of UAV Group 4 were charged with the significant task of supporting the parallel operations of MRTF-1 and SOTG VIII battle groups.

With the increased operational tempo inherent with a fresh concept of operations from the arrival of MRTF-1, UAV Group 4 faced an ever-increasing demand for ISTAR support. This was further exacerbated by a relatively mild winter that otherwise prevails and limits any continuous UAV support due to the poor weather. This situation required UAV Group members to provide concentrated ISR support to complex operations soon after arriving in the AO which left limited time for extensive familiarisation with the terrain. UAV Group 4 was forced to fundamentally change the way it provided support to Australian and coalition forces in order to achieve economy of effort and sustain prolonged operations.

The first step in ensuring ISR economy of effort was to coordinate all ISR assets to create a layered ISR effect within the Area of Operations (AO). It was identified that there was a gap in ISTAR coordination at the Task Force - Uruzgan (TF-U) headquarters level which needed to be addressed in order to better utilise the ISR assets available within Uruzgan province. ISR assets were often found to be doubling up on routine tasks and were not being utilised with the strengths of each system in mind. To address this, the first ISTAR cell was created within headquarters TF-U by UAV Group 4 and TF-U intelligence staff to synchronise ISR assets and develop the desired 'sensor to sensor to shooter' link. The UAV Group 4 command team developed the initial concept from extant 20th Surveillance and Target Acquisition Regiment doctrine, while the TF-U JIC provided the necessary manning and infrastructure to support the newly developed cell. The ISTAR cell was jointly commanded by the UAV Group 4 battery captain and the TF-U ISTAR company second-in-command and it incorporated liaison officers from UAV Group 4, TF-U Sperwer UAV, ISTAR company ground reconnaissance and TF-U EW. The cell was directed

by the TF-U ISTAR group which was commanded by the battery commander UAV Group 4.

The establishment of the ISTAR cell provided the necessary sensor-to-sensor link and the coordination of organic and allocated airborne, ground and EW ISR assets. It also provided the foundation to link into previously inaccessible strategic ISTAR EW assets, such as Predator and Reaper UAV systems, U2, Global Hawk, Rivet Joint SIGINTEW, TAC RECCE and other platforms to better support TF-U units. These assets were in most cases also capable of providing a kinetic effect which required ISTAR cell staff to develop and execute hand-off procedures with the JOSCC in the event that a dedicated ISTAR mission eventuated into a targeting scenario.

... forced to fundamentally change the way it provided support to Australian and coalition forces in order to achieve economy of effort and sustain prolonged operations.

The majority of the tasking and utilisation of these assets was focussed on gathering intelligence and situational awareness support. Nonetheless, handover processes were developed and tested, whereby both cells worked well together in defining where/when transfer of control of the asset occurred during the targeting process. With regards to this process, the 'platform' was universally defined upfront as an ISTAR asset, with IMINT capability being thoroughly exploited during all missions, until the first step of the targeting process was completed. After which, the ISTAR cell would transfer the control of the platform to the JOSCC which would complete the engagement. The main highlight throughout all of this work was fusing both strategic and tactical ISTAR EW which proved an invaluable experience for the members of UAV Group 4.

Concurrent with the establishment of the ISTAR cell, UAV Group 4 introduced the Forward Ground Control Station (FGCS) into service which enabled localised control of the UAV in both the mounted and dismounted roles. This capability enabled the UAV group to provide organic, decentralised UAV support to forward ground elements thereby improving response and fidelity of situational awareness to the warfighter on the ground. It also enabled the development of a more mobile ISTAR support element which was deployed in support of several operations throughout the AO. With the

implementation of this new system and accompanying adjustments to crew shifts to meet the technical and tactical requirements of this deployment technique, UAV Group 4 was able to provide a significant improvement in ISTAR support to Australian and coalition forces.

Unsurprisingly, SOTG took to the FGCS concept with great enthusiasm and played a key role in developing a dismounted version of the FGCS system. This variation of FGCS employment, provided another mode with which ISTAR effect from the Scaneagle UAV could be delivered to deployed troops.



Bombardier R.J.P. Ellingham and FGCS

The UAV group also employed the FGCS capability to provide a dedicated UAV detachment to OMLT elements in the northern part of the AO. On such missions, the UAV was usually flown at a lower altitude to increase image fidelity while enabling greater flexibility during unfavourable flying conditions. The personnel attached to OMLT were able to provide advice to the local commander on employment of ScanEagle UAV and develop mission specific UAV sorties.

The changing tactical and environmental situation in Afghanistan, coupled with the new concept of operations of MRTF-1, forced the UAV group to develop and enhance not only the ScanEagle UAV capability, but a more comprehensive approach to the provision of ISTAR support to Australian forces in Afghanistan. In addition to flying close to 3500 hours of ScanEagle UAV support, UAV Group 4 also controlled over 300 hours of Predator and Reaper UAV missions and coordinated a significant number of other assets in support of Australian and coalition operations.

Despite significant gains in airborne ISTAR EW fusion, the development of ground ISTAR EW

concept through the fusion of reports from patrols and guard towers remained outstanding. This was a persistent weakness in seeking to achieve a broader and more coherent approach to delivering ISR across all dimensions of the battlespace. Understanding the importance of sensor fusion and avoiding an unhealthy 'platform focus' is an important lesson for the Australian Defence Force. ISTAR EW can produce results that are disproportional to the forces engaged if properly fused, synchronised and exploited. The benefits of ISTAR EW are well understood, yet the mechanics of executing this complex battle operating system are probably not.

Upon reflection of the UAV group's tour of duty, ISTAR EW should be appreciated as a complex and specialised area requiring dedicated and specialist-trained personnel. Yet the current training regime for STA officers and soldiers does not properly prepare them in understanding and applying different sensors or capabilities such as GMTI, SAR, thermal, IR, EO and the nuances attached to each coalition ISTAR platform. It is critical for an ISTAR expert to know the strengths and weaknesses of assets and what the optimum tactical application should be, while also identifying sensor gaps between HUMINT, SIGINTEW and airborne ISR and then having the ability to effectively access and employ coalition / strategic ISTAR systems. Finally, more work is required in improving the manner/method in which imagery analysis and data management is conducted.



Bombardier D.H. Cleghorn and GCS Antenna

On the whole, this operational tour was a very rewarding and invaluable experience for UAV Group 4. The unit is fast becoming recognised as Army's subject matter expert for ISTAR, with

notable improvements in assisting with coordination of a broader array of ISTAR assets and fusion of sensors in addition to commanding and controlling the organic elements resident at 20th Surveillance and Target Acquisition Regiment. UAV Group 4 was fortunate enough to be presented with a group commendation from the Dutch in recognition for its outstanding contribution to enhancing ISTAR EW within Uruzgan Province. A number of individual commendations were presented by CJTF 633 who congratulated the group for an incredible effort in fundamentally improving ISTAR support within Uruzgan and shaping Army's future concept and direction for this complex and demanding capability.

Radar in Iraq

Lance Bombardier J.W. Last

Being deployed on operations is an exciting prospect for any young digger. It is a chance to put all of your training and acquired trade knowledge into practice in 'the real world'. When the call came to deploy we knew it was time to 'do our job' and we looked forward to the opportunity with a heightened sense of anticipation.

... the beginning of the winter and temperatures could get as low as minus 10 degrees. It was a shock to the system ...

A high standard had been set by members of 20th Surveillance Target and Acquisition Regiment on the previous rotations to Overwatch Battle Group (West), and that standard was not going to drop with the last detachment to deploy to Tallil Airbase in Southern Iraq. We knew we had long hours and hard work ahead for the next six months in the role of the Intelligence, Surveillance, Target Acquisition and Reconnaissance cell (ISTAR). The ISTAR was comprised of a headquarter element; a weapon locating troop and UAV troops. All these elements performed different roles but all had the same end state objective: collect as much information as possible for ISTAR cell to consolidate, analyse and disseminate.

After the excitement of the lead up preparations and pre-deployment training we finally arrived at Tallil Airbase in Southern Iraq in late November and

early December 2007. This is the beginning of the winter and temperatures could get as low as minus 10 degrees. It was a shock to the system coming straight from an Aussie summer! It only takes a small amount of rain to leave pools of water all over the landscape and this in turn becomes a quagmire, making working conditions extremely difficult.



The radar operators had a relatively quiet first month in theatre. We picked up a fair bit of fire on the radar in our area of operations (AO). This was valuable intelligence for the ISTAR cell as they could then launch a UAV over a particular grid and get tangible intelligence on the behaviour of the local populace and thereby continually reassess the level of threat in the AO. With the arrival of the warmer weather and rising temperatures the frequency of rocket attacks also rose. Our coalition partners, particularly the US Army, were more than interested in just how we conducted crater analysis. The US Army Special Weapons Exploitation Team (SWET) then became our Force Protection Team when we were carrying out our analysis.



This chance to interact with the US soldiers was a great experience and afforded an excellent opportunity to learn how they operated and

compare the differences in training doctrine. We invited the US soldiers to our radar complex where we were able to teach them the black art of crater analysis. This training was timely as we were the last Australian radar deployment to the MEAO and the SWET were subsequently able to continue conducting crater analysis and exploiting the gathered intelligence after our departure. A highlight of our deployment was the chance, half way through our time in country, to put a soccer team together and play against the Iraqi Army. Well, it was bigger than Ben Hur! We soon learnt just how passionate the Iraqis are about their soccer! The game was energetic and we held out to a 1-1 draw. The locals all enjoyed the game and admired the spirit in which the game was played. This was a great occasion where we could win some hearts and minds of the locals who had come to watch and enjoy a friendly game of sport in what is, in reality, a war zone. This gave us a great chance to mingle with the locals and gain a better understanding of their culture and left us with memories for a lifetime.

Being deployed in theatre also gave us the chance to see just how the ISTAR cell functioned in real time. The process of collating radar LOCREPs of small arms fire and rocket attacks, the UAV video footage and photos of routes, choke points and people of interest enhanced our understanding of the intelligence cycle. All members were exposed to this and we gained a greater insight into the value of accurate and timely intelligence in the shortest possible time frame so that friendly patrols had situational awareness and could thereby circumvent any possible threat to coalition forces.

As our rotation was winding down toward May many of the soldiers started talking excitedly about going home; however, the insurgents seemed to have familiarity with our timetable too and the rocket attacks became more frequent. This increased activity served as a wake up call not to fall asleep at the wheel and the radar operators were kept on high alert waiting for the next round of incoming ordnance. When the deployment finally finished there were a lot of tired looking but smiling faces as we realised we had done our jobs well, learnt an immeasurable amount of trade knowledge, had an experience few others would ever have and, most importantly, we all made it home to our loved ones.

20 STA Regt on target for future

By Tpr Michael Franchi

20 STA Regt received a boost in its operational capability after receiving two upgraded Weapon Locating Radars (WLR) under Project Land 58.

The AN/TPQ-36 WLRs are the first of seven to be delivered to the unit, which provides an interim operational capability. They incorporate the latest software upgrades for the unit's target acquisition systems.

Army will receive a remaining three WLR units by the end of the year providing a full WLR operational capability.

The handover ceremony at Gallipoli Barracks on June 25 was attended by Commander 1 Div Maj-Gen Michael Slater and members of the unit, who were on hand to demonstrate the functions of the new system.

WLR operator LBdr Jeromy Last said the upgrades provided a wider range of useability including a user-friendly Windows-based interface. "It can store up to 500 targets and set priority zones to monitor," he said.

"We then can either provide counter- battery fire or send a UAV over the area and get a better idea of what is in the area."

The upgraded WLR provides a means of early warning for ground forces by being able to locate enemy artillery, mortars and rockets.

Up to 10 firing locations can be determined simultaneously by using the radar data gathered from the firing paths of enemy shells and rockets.

A WLR is run by a nine-person section including a three-man recon detachment led by a lieutenant and the six-person radar detachment led by a sergeant.

The WLR system was introduced into service in 1987, but under Land 58 Phase 3 its service life will be extended to 2015 from the original life of type of 2007.



On target: Comd 1 Div Maj-Gen Michael Slater is briefed on the WLR systems capabilities by Bdr Tyron Dansey and LBdr Jeromy Last, 131 STA Bty.

Around the Regiments

Talisman Sabre

Lieutenant Brent Daire

Exercise Talisman Sabre 09 kicked off with a bang worthy of the fire plans of the wars of yesteryear. Elements from across the ADF and USMC converged on Townshend Island for a combined joint fires live firing exercise (LFX), coordinated and commanded by the Premier Regiment itself.

Units involved in the exercise included the 1st Field Regiment and its sub units (Headquarters Battery and the 105th Medium Battery), 6th Battalion Royal Australia Regiment (6 RAR) mortar platoon, Echo Battery 2nd Battalion/11th Marines and Mortar Platoon 3rd Battalion / 5th Marines. An Anglico unit from the 1st Marine Division was deployed to assist in combined fires coordination and joint fire team's (JFT) from the 7th and 23 Field Regiments were also deployed for the duration of the exercise from the newly formed High Readiness Reserve Companies.

... with a bang worthy of the fire plans of the wars of yesteryear ...

With such a diverse group of gunners and offensive support specialists in location, a vast array of equipment was also on display. Present was the ever faithful L119 105 mm from the 105th, 81mm Mortars from both 6 RAR and the 3rd/5th Marines and the ultra modern M777 from Echo Battery. This proved an ideal opportunity for the 1st Field gunners to get a close up look at the M777 in action and get some pointers from the marines for when the gun is introduced to the Regiment in 2010.

With so much firepower on the ground it would take a supreme effort for the flyboys to match it but they rose to occasion with the RAAF deploying

specialist air traffic control and joint terminal air controller (JTAC) personnel and the Marines coming to the party with the deadly AV8B Harrier II Plus, Cobra Gunships with 20 mm cannon and free flight rockets and minigun armed U1HI Hueys.

To get all the platforms onto the Island for the commencement of the LFX a massive logistical operation had to be planned and executed. 171st Squadron AAVN, normally attached to SOCOMD, put in a tremendous effort, moving the 105th Medium Battery and the Regiment's brigade joint fires and effects co-ordination cell (JFECC) with all their equipment and other supporting personnel and assets to the island, flying sorties all day to get the job done. 171st Squadron continued to support the LFX on the island flying logistic support and then exfilling all involved back to the mainland at the completion.



Battery Captain 105th Medium Battery, Captain C. Sandner providing cover for a simulated Casualty activity on Townshend Island

The RAN also provided logistic support with land craft heavy doing several runs to the island to land heavy equipment and supplies. The logistic supply effort was all coordinated and controlled by elements of Headquarters Battery 1st Field Regiment, showing that despite their small

numbers they are up to the task of organisation's triple their size.

Once all assets were in place the LFX commenced with a bang. The JFT's commenced by calling in single battery and platoon missions to shake out before moving into more complex missions involving both the 105th and Echo Battery's, coordinated by the Regiment's brigade JFECC (C/S OC).



Bombardier G. Swain, C/S 32 observing 'Fall of Shot' of 105th Medium Battery and E Battery USMC

As the missions became more and more complex the JTAC's came to the fore calling in attack helicopters and fast air from the USMC. Before long coordinated effects from across a combined joint environment were being called into to devastate the enemy forces in situ.

The LFX culminated with a battery commander's fireplan involving all the available assets. This was a great opportunity for the JFECC's to shake out and prove they have what it takes to deconflict the ground and airspace, to provide lethal effects in a precise time and space on the battlefield, causing maximum damage with a minimum delay.

With the LFX complete, 1st Field Regiment airlifted back to the mainland. With the battle already well underway, everyone quickly moved to their supported manoeuvre units to commence operations and the dry fire component of the exercise. Providing JFECC's and JFT's to the 7th Brigade Headquarters, 2nd/14th Battle Group (2/14 BG), 6 RAR BG and the RASO BG, 1st Field Regiment was spread thin but up to the task being reinforced by the 101st Medium Battery from 8th/12th Medium Regiment.

The tempo was high from the get go with the 105th infiltrating with the 2/14 BG deep behind enemy lines in a classic manoeuvrist attempt to punch through the enemies gaps, dislocate his strengths

and cut straight for his centre of gravity. With the enemy seemingly on the back foot, the brigade assembly area was quickly secured with the 105th deploying to now support the 6 RAR BG clearances of Raspberry Creek.

As the 6 RAR BG clearance commenced it quickly became apparent that the enemy commander was also a keen manoeuvrist with the Raspberry Creek sector almost completely void of enemy, the soldiers being greeted by civilians. Having moved his strengths well away from the area and hidden in the mountains as the 2/14 BG bypassed them. With his strength consolidated and unhindered by Australian forces the enemy commander struck out at the lightly protected elements in the assembly area.

Quickly devastating the echelon elements rolling towards brigade headquarters, the enemy came to abrupt halt as it ran into the 105th gunline. Having received news earlier that the 101st had been wiped out in a mechanised assault, the battery captain 105th Captain Chris Sandner planned quickly, deploying a direct fire gun and anti-armour teams with a deep listening post for early warning.



Charlie Detachment 105th Medium Battery

The enemy advance was quickly detected by the early warning elements who initiated contact and lead the enemy forces straight into a direct fire killing ground of the L119's. With 84 mm's and L119's firing enfilade into the enemy mechanised

platoon, the battle could have only one outcome, the complete destruction of the enemy.

Having met their match the remaining enemy elements quickly withdrew to their assembly area. However this move had already been assessed as a likely course of action by the 105th who proceeded to fire onto the area and calling in fast air, resulting in a further mechanised platoons destruction.

As the enemy continued to manoeuvre around the area of operations (AO) in attempts to disrupt Australian forces rear elements, JFT C/S 32 led by Lieutenant Bryce Duffy, came into their own. Having infiltrated 15 km's on foot to an observation post (OP) overlooking likely enemy routes, C/S 32 maintained observation for the duration of the exercise, remaining undetected despite an enemy call sign clearing the area of their OP.

Having spent the better part of two years training for the counter insurgency environment, the Regiment was more than up to the task ...

With good observation and accurate situation reports and reporting, C/S 32 was on more than one occasion the lifeline of the brigade providing early warning to imminent attacks. Receiving praise from the both the brigade commander and the commanding officer.

As the exercise progressed the enemy was slowly rolled up. Elements of the Regiment were involved in several more contacts as the exercise progressed but the overwhelming power of the combined joint forces proved too much for the enemy who were comprehensively defeated and withered down to a few rogue locals conducting a minor insurgency. Having spent the better part of two years training for the counter insurgency environment, the Regiment was more than up to the task of countering this new threat.

Overall Exercise Talisman Sabre 09 proved to be an excellent opportunity for the 1st Field Regiment and all those who supported it with the conduct of an air lift, a combined joint LFX involving mortars, guns, helicopters and fast air supporting a cavalry advance, a motorised assault and stability operations. Everyone was challenged and everyone exceeded that challenge. As a Regiment we showed what we can do, the firepower we bring to the battlespace and whatever the task we are up to it. For Exercise Talisman Sabre 09, it can be said we more than lived up to our illustrious battle honour .

Diamond Dollar

Lieutenant Jimmy Wood

From the 1st to the 26th June 2009, 1st Field Regiment took part in Exercise Diamond Dollar, 7th Brigade's major combined-arms exercise, in order to prepare for the Brigade's key military exercise combined with the US military, Exercise Talisman Sabre. Held at the Shoalwater Bay Training Area, Diamond Dollar covered urban combat, live-fire practices, engineer tasks and aero medical evacuation drills as well as combined-arms manoeuvre with close-in artillery fire support. The exercise included personnel from 7th Brigade units as well as support elements from 1st and 3rd Combat Service Support Battalions, 17th Combat Service Support Brigade, 7th Signals Regiment and 1st Topographical Survey Squadron, as well as 101st Medium Battery from Darwin-based 8th/12th Medium Regiment.



Bravo Detachment, 105th Medium Battery, take cover during a fire mission at the live fire defence of the gun position at SWBTA

1st Field Regiment's main objective for the exercise was for the Regiment to achieve Stage 5 assessed gunnery. This milestone was obtained through the conduct of danger close and modified safety live fire practices, forward observer's quick and battery commander's fireplans, and a live fire defence of the gun position. The live fire defence of the gun position encompassed both indirect and direct fire missions as well as small arms and anti-armour fire against repeated enemy attacks on the position. 105th Medium Battery gunline defended its position for over nine hours in a 24-hour period, testing the gunners' physical endurance, mental resilience and focus. The gunline, barely platoon-plus strength on the ground, expended 80 rounds of 105 mm high explosive and another 40

rounds of smoke, on top of thousands of rounds of small arms including 5.56 mm, 7.62 mm and 40 mm, as well as 66 mm and 84 mm anti-armour ordnance. As stated by the Regiment's operations officer Major Paul Manoel, the activity was designed to replicate combat conditions in as true a form as possible 'This kind of activity is rarely conducted, but it forces troop commanders to make rapid and complex decisions in order to both keep the guns firing and to defend the position'. 105th Medium Battery was then back doing what it does best, providing direct and indirect fire support to Headquarters Battery's live fire defence of the gun position. Given the chance to take a break from their forward operating base (FOB) operations, Headquarters Battery were keen to prove themselves to the gun battery, achieving the task well, under arduous and demanding combat conditions.



Gunner W.R. Gordon, Bravo Detachment 105th Medium Battery, keeps a low profile at the live fire defence of the gun position at SWBTA

At the completion of the activity, the commanding officer Lieutenant Colonel Stuart Kenny expressed his satisfaction in seeing a successfully defended gun position, with filthy gunners climbing out of their pits covered in dust, ash and weapon oil, thirsty and worn out but none the less still grinning.

Diamond Dollar provided an opportunity to show the other combat arms of the brigade the real power and potential of modern artillery. As 101st Medium Battery provided support to 2nd/14th Light Horse Regiment's Stage 6 Battle Run, Danger Close missions coordinated by 105th Medium Battery Joint Fires Teams were called in virtually on top of Alpha Company, 8th/9th Battalion Royal Australian Regiment (8/9 RAR) main defensive position. The precision, accuracy and sheer weight of fire provided by the batteries left our infantry and cavalry counterparts in little doubt as to what Josef Stalin meant when he stated that 'Artillery is the god of war'.



Alpha Detachment, 105th Medium Battery, prepares to engage target

Diamond Dollar culminated for 105th Medium Battery with the Commanding Officer's Challenge, in which each of the gun detachments was given an independent tactical direct fire task by Lieutenant Colonel Kenny himself. The scenario placed the emphasis on the detachment commanders, taking them outside the battery environment and requiring them to use independent thought and decision-making processes in the control of their gun. The Challenge was won by Alpha detachment, led by Bombardier Stephen Nicholes, whose comprehensive reconnaissance combined with the mission command allocated to detachment second in command Gunner Shayne McCoombes and tight drills from the detachment meant that the enemy had no idea what was coming until the round was in the air.

Diamond Dollar provided an opportunity to show the other combat arms of the brigade the real power and potential of modern artillery.

To wrap up the exercise, next in store for the Gunners was a brief and fleeting respite, taken in the form of a refit to fight at a Regimental Leaguer followed by eight days of recreation leave back in Brisbane, before stepping off on Talisman Sabre on July 6th.

In summation, Exercise Diamond Dollar was successful in achieving operational proficiency for both 1st Field Regiment and 7th Brigade as a whole. The Regiment achieved all objectives set by the Lieutenant Colonel Kenny, with flying colours, and showed the higher command of 7th Brigade Headquarters that it is quite a force to be reckoned with.

Rising to the Challenge

This year has been a challenging year for the 7th Field Regiment. The high operational tempo within Army combined with the uncertainty of the future of reserve artillery has placed many demands on the unit. In addition to this the requirement to provide manpower for high readiness reserve (HRR) and reserve response force (RRF) has posed a challenge to a unit that is already depleted from deploying experienced members on operations.

In response to these challenges the members of the regiment have shown great resolve and dedication to service to Army and our nation. Following the devastating bushfires in February, four RRF members deployed on Operation Victorian Fires Assist, leaving behind their families and civilian employers with less than three days notice. Currently the unit has a number of members deployed on Operation Anode to the Solomon Islands where they are performing liaison and communication duties.

2010 will be a significant year for the Regiment as one battery will commence the transition from L119 to mortars.

Increasingly members are realising the benefits of furthering their commitment to Army through employment in the HRR and RRF. 7th Field Regiment has been successful in exceeding its manning goals for both and is offering a number of members to fill vacant HRR positions nationally. Foremost among the HRR element are the two joint fires team's (JFT) provided to support 7th Brigade.

In July a HRR JFT deployed on Exercise Talisman Sabre to complete their annual continuous period of training. For the first week of the exercise the JFT was attached to 1st Field Regiment as part of the combined forces live fire exercise which included coordinating close air support, mortars, light and medium guns from both Australia and the US. For the remainder of the exercise the JFT was attached to the 11th Brigade HRR combat team, forming part of the Battle Group ISR screen.

All members of the JFT were able to experience operations in a large combined arms setting which

is beyond the normal exposure of reserve members. The exercise was highly beneficial for those involved and the opportunity to be involved in similar exercises is one of the motivators for those contemplating HRR service.

A recent highlight has been the support that 7th Field Regiment provided to a JLC run by Special Forces Training Centre in Singleton. The exercise gave the opportunity for the trainees to practice call for fire procedures with live ammunition rather than completing the training using simulators. The gunline and the command post also received great training value by firing the equivalent of the unit's yearly allocation of ammunition in two days.

7th Field Regiment has locations in Northern Sydney, the Central Coast and Newcastle, and in recent times has been fortunate to receive a number of transfers from the Australian Regular Army (ARA). The unit welcomes these members; the technical and operational knowledge that these members have shared with the other members has been of great value. It is pleasing that although these members lives have lead them away from the ARA that they are still making the effort to ensure that gunnery is still a part of their lives.

2010 will be a significant year for the Regiment as one battery will commence the transition from L119 to mortars. The remaining battery will continue to operate in the field artillery role until 2011. Despite initial apprehension 7th Field Regiment is now primed to receive the new equipment. The new weapon system will ease some of the current issues faced by reserve RAA units. It will increase the number of weapons that the units are able to deploy while decreasing maintenance overhead.

The officers and soldiers of 7th Field Regiment are currently being utilised in operations and advanced training to a level not equalled in many years. Although not always being utilised in artillery roles, they are making use of their trade training in communications, liaison and dealing with complex situations to deliver excellent results. Despite current stresses and equipment uncertainty, 7th Field Regiment will continue to provide effective indirect fire and offensive support to 8th Brigade, as well as providing groups and individuals for other activities.

Long Look

*Sergeant Daniel Brauman
School of Artillery*

I was recently lucky enough to be selected to participate in Exercise Long Look 2009 (Ex LL 09). This exercise is an exchange between British and Australian military forces, and consists of four months spent with a host unit. My host unit was 148 (Meiktila) Commando Battery, based in Poole on the south coast of England, away from its parent unit, 29 Commando Regiment, Royal Artillery. The Battery does not hold any guns, consisting of just six forward observer (FO) teams trained specifically in naval gunfire support (NGS) as well as all the other FO skills one would expect. During the brief period that I was with the Battery I spent time in Germany, France, Norway, Gibraltar, Austria, Denmark, Malaysia, and Singapore, all of which provided excellent training and a wide range of military and cultural experiences.

A particular highlight of the trip was a multi-national live fire exercise conducted in Singapore/Malaysia involving forces from of Singapore, Britain, Australia and New Zealand. The first day consisted of briefings, meet-and-greets and discussions between the various elements taking part to decide and confirm training objectives and outcomes. We were then able to go aboard the majority of the ships and conduct dry-fire missions and rehearsals with the ships' gun crews. This highlighted a number of issues such as differences in communication procedures, languages and orders and reports formats. Once all these had been ironed out, the ships' crews managed to cut up to two minutes off their initial engagement response times, which was very impressive.

Day Two saw various forms of deployment into the area of operations including, including air mobile and amphibious insertions. We made our way to our island accommodation, which was located at the end of the most rickety, run-down pier ever built! This became known as home for the next three days. Once we had established ourselves there, we were introduced to the local Singaporean Forces (SF) unit that we were to operating with for the remaining three days; an introduction which had us fishing for our evening meal out of one of their zodiac assault boats and later enjoying mackerel and other tropical fish grilled on the coals!

Bright and early on Day Three and a zodiac-ride around to the other side of the island delivered us to the drop-off point for the OP, which was located at the top of a boulder field. From here we had perfect observation over the NGS range. Soon after establishing our OP, the first ship - a Singaporean frigate - came on station, and we conducted a dry mission followed by three live engagements. It was very impressive to see this ship reduce its response times from engaging a target in five minutes, to within three minutes with very little training. The next ship to come on station was from New Zealand, and it had previously been agreed that due to the ship's gun crew's experience, it would be given less time and put under more pressure. We rolled straight into live fire missions followed by an FO's quick fire plan, all of which went well.

*I spent time in Germany, France,
Norway, Gibraltar, Austria,
Denmark, Malaysia, and
Singapore ...*

Back at our accommodation that evening, we were gathered together by our SF hosts, and taken into the jungle to shoot dinner - a wild cow! We then undertook an epic trek out of the jungle with our dinner, and left it with our hosts to prepare whilst we cleaned up in preparation for a well-deserved and welcome feast of big fat steaks. I suppose we should have known better, and we actually ended up eating knuckles and more fish and rice. No steak!

Following the boat ride back to the OP early on the morning of Day Four, we established communications with our first ship of the day, from Malaysia. Things began badly, as communications between the FO party and the ship was terrible due to bad weather, and not helped by the language barrier. However these issues were overcome and we conducted a dry mission followed by two live fire missions with the ship. It was very impressive to see the high rate of fire that a ship can engage at. The next ship to come on station was British, and after the previous missions with the Malaysian ship, it was good to be able to go straight into live fire and push the limits with rapid timings and high rates of fire.

On Day Five we made our way to the OP by zodiac once again and were greeted by Australian JTACs, who were already talking to a number of aircraft in the area. We came up with a game-plan for combined operations between the ships and the aircraft. The British ship was the first ship on

station for that day, and we conducted a number of Mark missions, which the aircraft took advantage of to conduct dry engagements onto as air-to-ground targets. The tempo picked up throughout the day, culminating with the British and Malaysian ships firing simultaneous missions concurrently with aircraft, and finally saw two of the aircraft conduct low bombing runs and a 'panels check' over the OP.

*Ex LL 09 was a great experience,
and definitely one that is
worthwhile and not to be missed if
the opportunity arises.*

We were extracted by boat from the island late in the afternoon on Day Six, and delivered to HMS Somerset where we conducted an interesting boarding operation. A combination of the poor sea state and the bulky equipment we had with us made the transfer very exciting. Once on board however, we were treated to a hot meal and a shower, before being extracted an hour later by boat, to HMS Ocean. Once there, we had the rest of the night to replenish and wait for our extraction by Chinook to the mainland the next morning.

This exercise was definitely one of the highlights of Ex LL 09, for me personally. It reinforced the need for, and value of multi-national exercises, and gave me the opportunity to practise a skill which the Australian Army does not often focus on that is NGS.

Once back in the UK, I went straight onto a zodiac coxswain's course which consisted of two weeks of driving zodiacs, beach landings, caching, learning how to use tidal charts, and basic rules of the road at sea, along with a lot of unplanned swimming! As well as this, I was able to take part in a huge variety of other training which included live-fire break contacts with the new FO parties. I also participated in the Special Boat Squadron (SBS) Open Day, and due to my being para - qualified, I was able to get my British wings, through a parachute descent at Netheravon.

Ex LL 09 was a great experience, and definitely one that is worthwhile and not to be missed if the opportunity arises. The experiences, friends, and skills that I gained have definitely been of great benefit to me, personally and professionally, and whilst I suppose I was lucky to be selected to conduct the exercise with a SF unit at a busy time, I would recommend it without any hesitation at all.

Last M2A2 Shoot

*Warrant Officer Class Two Stephen Morrow
7th Field Battery*

We watched with anticipation the local weather forecast after the knowledge that all ferry services had been cancelled to Rottnest Island, which hasn't happened for 12 years. The weather: 5 m seas, 2 m swell, winds up to 160 km per hour and heavy rains. The date is the 26th June 2009 and the gunners of 7th Field Battery are preparing to move up to our most revered live firing range two hours drive north of Perth: Lancelin Training Area, the site for what will possibly be our last live fire of the guns before converting to 81 mm mortars.



Battery Commander Major S. Mathers & Battery Sergeant Major WO2 S. Parker

Of a strength of around 67, the unit manages to muster 60 personnel; three fully manned guns, a command post, Joint Offensive Support Team and our most important support from catering, medical and technical support troop elements from 13th Combat Services Support Battalion and range sentries from across the brigade. The vehicles have all been prepared and allocated, 26 in all. Visitors include Commander 13th Brigade Brigadier Cain, Regimental Sergeant Major 13th Brigade Warrant Officer Class One Kelly, Commanding Officer / Chief Instructor School of Artillery Lieutenant Colonel Wood, Regimental Sergeant Major School of Artillery, Warrant Officer Class One Franklin and for the purpose of the shoot, nearly 100 visitors of past members friends and families of the unit personnel.

The exercise kicks off with a direct shoot up near the 'coke can' in which all detachments practice their skills and a detachment from the command post fire off both high explosive and white phosphorus. Deployment orders and it's off to the dreaded, tick infested, Bull Frog Well, where the unit settles in for the afternoon and late into the night conducting the full range of missions. Deployment orders again around 2200 hours and the unit is off to the final position of the exercise. All the while this is going on the wind is howling, the rain coming over us in waves and occasionally the sun tries to poke through the black clouds. The members of the Joint Offensive Support Team, out in the elements and on the hill are having a hell of a job getting the rounds on the targets due to the wind and poor visibility of the impact area.

*... a single round was left over
and at 10:59 hours Western
Standard Time, Gunner Siira ...
was given the order from the Gun
Position Officer ... to fire, so
ending a period for the Battery.*

Morning breaks and there is a flurry of activity, guests are met in Perth and loaded onto buses, ammunition trucks unloaded to allow for civilian transport on the range and a gunline practicing fire plans to ensure all goes to plan. Guests range in age from young children to the elderly and are shocked as vehicles leave the beaten path for the cap rock tracks and sand dunes that make up our range. Once in position the mandatory safety brief is given to all and then the guns were unleashed for the last time.

After the mission was complete a single round was left over and at 10:59 hours Western Standard Time, Gunner Siira, the youngest member of the Battery at only 18 was given the order from the Gun Position Officer, Lieutenant Fowler via the No.1 of Alpha gun, Sergeant McMahon, to fire, so ending a period for the Battery. The last round was fired from the Battery that received the M2A2 in 1976 and from a gun that had been in service with the Australian Army since 1959. The Battery will now retain its guns for ceremonial purposes with some, namely Echo gun moving to the Australian War Museum in Canberra where it can be lauded for its original role as Delta gun from the Battle of Coral in Vietnam. Battery Commander Major Steve Mathers looks forward to the 'start of a new era for 7th Field Battery and being able to fulfil another important role for the Army Reserve'.

Gunners converted

by Maj Ian Toohill

PUCKAPUNYAL range echoed to the sound of mortar fire as 2 Div artillery soldiers wrapped up a 16-day basic mortar course from May 9-24.

The course was the initial part of the conversion of 2 Div RAA units to 81mm mortars and followed a successful trial period of about 18 months by 2/10 Fd Regt.

Training officer 7 Fd Bty Capt Joe Wheatley said the conversion to mortars was a good professional move for the reservists.

"Mortars are very flexible and build the small teams needed to support junior leaders and indirect fire training in 2 Div," Capt Wheatley said.

Student of merit Gnr Chris Steele, 16 Fd Bty, said the course was excellent and staff had helped achieve a high level of proficiency.

"It has been tough, real training with a steep learning curve," Gnr Steele said. "I think it's the best way for gunners to maintain their skill set in 2 Div."

CO 2/10 Fd Regt Lt Col Rob Crawford said the conversion course was a great opportunity for 2 Div gunners to maintain their indirect fire support skills.

"It was particularly important for the training of six-man joint-fire teams as a requirement of the HRR," Lt-Col Crawford said. "

After being involved in the mortar trial, I am pleased to see this course was such a success."

The training team that conducted the course is working closely with HQ CATC to develop training packages that are suited to the availability of ARes soldiers.

Serious consideration is being given to a new trade structure for the ARes RAA personnel required to support the conversion. The regiment began converting a battery to mortars in late 2007.

Conversion of the Army Reserve gunners to mortars is expected to take about two years and will coincide with the withdrawal of the current generation of 105mm field guns from service but will ensure the maintenance of indirect fire-support skill sets.

The course was highly successful with soldiers from 2/10 and 23 Fd Regts and 7, 16, and 48 Fd Btys qualifying. The course involved training in the handling of the 81mm mortar system, conducting fire missions and duties in the command post.

'Army' - The Soldiers Newspaper July 9, 2009

Professional Papers

Land Forces and the Third Dimension

Increasing complexity and the need for integrated force protection and battlespace management at the tactical level

*Lieutenant Colonel John McLean
Commanding Officer 16th Air Defence Regiment*

Abstract

This article reflects on the expected increasing complexity within the Joint Land Force's operational airspace, due in significant part to the expanding and changing nature of air threats and the expanding operations of the Joint Land Force within this airspace. These developments will emphasise the need for Army to continue progressing its ability to perform effective air defence, airspace battle management and the maintenance of situational awareness in an integrated fashion, as it affects the airspace. A way ahead is offered towards achieving integrated force protection within this dimension, which supports the achievement of joint and combined arms synergies.

Introduction

A range of authoritative documents are forecasting increasing complexity in the Joint Land Force's operational airspace¹ in the coming years - outlining the expanding and changing nature of air threats and the operational airspace directly above Army's head. Army's Adaptive Campaigning guidance to date states that the future joint fires threat will be characterised by the proliferation of uninhabited aerial vehicles (UAV), cruise/ballistic missiles, long range rockets, artillery and mortars amongst others². Army's own operations within this airspace - including the employment of UAV's, rotary wing operations, offensive support capabilities and Ground Based Air and Missile Defence (GBAMD) - is likely to increase in breadth and depth over time³. The current reality in this capability area for Australian Army formations in training and Joint Task Forces on operations, the desire for hardened, networked and integrated

1. This paper refers to that operational airspace that is allocated to the Joint Land Force for the conduct of own operations and airspace control. It may extend up to the coordinating altitude which varies based on the operational situation but traditionally would not exceed above 10,000 - 12,000 feet.
2. Adaptive Campaigning, Army's Future Land Operating Concept, Version 22.3 dated 20 March 2009.
3. The introduction of new and more capable systems in the near and medium terms will likely lead to this. The following extract from the Forces Command Plan 2009-2010 also indicates an increasing emphasis: 'Where possible, every exercise at Level 5 or above should involve the integrated use of air, aviation and UAVs. Battlegroup and formation commanders and their staffs must understand how to use and integrate these capabilities to achieve effects.'

capabilities and improved air-land integration all indicate there is a clear need to continue progressing the ability to perform effective GBAMD, Airspace Battle Management (ABM) and Situational Awareness (SA) functions within the Joint Land Force's airspace. The guidance contained in the Defence White Paper 2009 reinforces the need for the Australian Defence Force (ADF) to be able to protect itself and to be a networked force - prescribing the method of progressively delivering networked domains⁴. An evolutionary and incremental approach towards enhancing capability in the areas of GBAMD, ABM and SA is likely best suited - particularly in a time of competing priorities and increasing fiscal constraints. Additionally, a well defined development path with concrete steps that build upon existing force protection capabilities - such as Ground Based Air Defence (GBAD) - is a logical method to provide a compromise between capability goals and constraints that can achieve joint and combined arms synergies and steps towards integration and network centrality.

Implications of the future operating environment

Future advancements in available technologies and ongoing military capability development programs, within the Asia-Pacific region but also globally, will likely lead to increased use (both conventionally and unconventionally) of the airspace at lower altitudes - including the proliferation and advancement of UAV's⁵, land attack cruise/ballistic missiles and attack helicopters. In part, the air threat has evolved to one that can be asymmetric in nature - a threat that can emphasise the identification of a single or small number of high value and high casualty causing targets (such as the air attacks against targets in the US on September 11 2001). In recent years, operational pressures, the effectiveness of attacks and technology availability has led non-state actors in Iraq, Lebanon and Afghanistan to concentrate on procuring accurate, longer range rockets, artillery and mortars (RAM) and even UAVs⁶. Over time, the increases in availability and lowering costs will probably see proliferation of precision weapons to non-state actors who have come to appreciate the force multiplying effect of precision - including the use of guided rockets, artillery, mortars and missiles. If insurgent forces can launch small-to-medium calibre rockets significant distances now, what will they be capable of in 2020-30? Careful consideration of these questions will be critical to mitigating emerging threats in a timely fashion, to avoid surprise during operations.

... in current reality the ABM and SA functions as they relate to the allocated Joint Land Force's airspace are not optimised ...

So what does this changing nature of the air threat mean to the ADF's Joint Land Force? One aspect is the potential for increased disaggregation of some of these proliferating air threats that will require less force projection enablers and support, and have lower detection and intercept thresholds - especially at the tactical level⁷. An increasing range of actors will be able to employ them against deployed land forces and critical assets. This may change the equation in terms of the assumptions relating to strategic air supremacy provided in part by traditional air platforms and what it affords land forces - potentially representing a decrease in the guarantee of force protection in some situations from air threats. The scale, primary role and likely priorities of the ADF's strategic air power platforms in the future will possibly place constraints on the capacity of that capability to defeat some of these emerging threats - such as tactical UAV's and land attack cruise/ballistic missiles with low visual and radar cross-sections operating at lower altitudes.

Trends such as increased stand-off weapon and sensor ranges are increasing the operational importance of the early and accurate detection and then defeat of munitions in flight, as well as delivery platforms⁸. The Australian Army's expansion of capabilities operating within the airspace now and in the future will place additional demands on the current approaches to ABM (including deconfliction) and provide increasing impetus towards more agility and integration - especially in terms of control, coordination and

4. Defence White Paper 2009.

5. The planned fielding of helicopter UAVs in Afghanistan by coalition forces is another indicator of the development of UAV technology for use in an increasing number of roles.

6. According to open sources Israel claims to have shot down up to three Lebanese Hizbollah UAVs (technically capable of carrying payloads) during the 2006 conflict.

7. Noting the concept of disaggregation of the battlespace outlined in Adaptive Campaigning 2009.

8. Adaptive Campaigning, Army's Future Land Operating Concept, Version 22.3 dated 20 March 2009.

communications as it affects the airspace used and controlled by Land Forces. However, in current reality the ABM and SA functions as they relate to the allocated Joint Land Force's airspace are not optimised at formation level and progressive up scaling in this area should be addressed to work towards a capability that can better facilitate increasingly complex friendly operations in the third dimension and contribute to improved levels of force protection in an evolving operating environment. Additionally, the pace of change in this area amongst coalition partners, and the associated interoperability considerations, provides further impetus for development in this area.

Enhanced capability to protect land forces – Incremental development towards an integrated response

The Chief of Army's Development Intent, design rule number 11, makes reference to the Joint Land Force developing air defence systems - including counter rocket, artillery and mortars (CRAM) - to protect critical nodes and routes. Matched to this intent is Defence's Project Land 19 Phase Seven which outlines a concept for the delivery of a GBAMD capability (to include a BMS, sensor and response components) circa 2018.⁹ As outlined in Adaptive Campaigning (draft), true air defence capabilities must consist of a layered system of response capabilities interconnected through the provision of ABM and SA.

Army's current specialist GBAD capability provides a solid development platform for the future integrated GBAMD capability. The foundation skills and knowledge of Army's air defence community and inter-relationships with the joint airspace control agencies and the surveillance and target acquisition (STA) capability means that progressive steps towards the goal of a more integrated force protection capability in this area in the near and medium terms are certainly achievable. The current GBAD capability already has long established joint interoperability links and has been forced to network with and adapt procedures to a multitude of joint and single service environments - lending itself to operating in a network centric environment and following a joint development path.

The current GBAD capability already has long established joint interoperability links ... lending itself to operating in a network centric environment and following a joint development path.

The current strategic guidance¹⁰ has emphasised the need for networked command and control systems, sensor suites and the provision of enhanced SA (significantly through increased ISR capabilities) including very high levels in specific areas of ADF operations - to support the overall aim of information superiority. Additionally, in terms of force protection from a GBAMD perspective there has been emphasis on the need for a '...layered system of response capabilities interconnected through the provision of ABM and SA'¹¹ - which in itself implies a holistic and systems approach is required to developing and structuring Army's dedicated counter strike capabilities. This guidance and the evolving operating environment will significantly influence the approach taken to developing effective capability responses and will naturally cause a change in the current view of GBAD - from a capability often viewed as adjunctive - to an integrated and networked GBAMD capability able to meet a range of fires and strike threats and forming a critical component of the *shield* function for the Joint Land Force. Taking concrete steps towards achieving these broad capability aims within the Joint Land Force's airspace will require enhanced ability to perform the *know* combat function and the integral ability to take better control of that airspace from a battle space management perspective. If the Joint Land Force at formation level is to effectively manage own airspace in the digital age and enhance force protection in an increasingly complex air threat environment, a significant shift from the status quo will be required. The current reality in terms of a Brigade's ability to maintain situational awareness and exercise positive control over allocated airspace highlights a heavy reliance on procedural control and voice communications. Additionally, feedback from operational areas indicates the lack of active positive control and deconfliction of the low level airspace.

A logical first step in meeting an increasingly complex operating environment is to enhance the command, control and communications or 'brains' of your capability. This could be supported through the

9. Capability Development Group, Project Land 19 Phase Seven found at <http://intranet.defence.gov.au/cde/sites/LAND19/comweb.asp?page=30433&Title=GBAMD>.

10. Adaptive Campaigning 2009 and Defence White Paper 2009

11. Adaptive Campaigning, Army's Future Land Operating Concept, Version 22.3 dated 20 March 2009.

provision of an integral, flexible multi-purpose sensor platform that can be used in a range of operational scenarios in complex, probably urbanized terrain¹² at formation level and elsewhere, and as part of the joint integrated air and missile defence system (IAMDS) and intelligence, surveillance and reconnaissance (ISR) architecture. Such a capability would support a blending of systems approach and be a key enabler for actively deconflicting own air operations, sense and warn against air threats such as RAM and cruise/ballistic missiles and allocation of targets to GBAMD effectors - and so provide significant functionality for a BMS-GBAMD. The relative low cost and availability of mature systems make this development option even more attractive.

This type of capability - that could be deployable at formation or even battlegroup level - would require a dedicated pool of personnel with the appropriate skills to support it. In the current resource constrained environment, solutions that leverage off current capabilities will be favoured. In this case the true integration of current airspace user and management agencies currently 'brigaded' at formation level would represent the logical baseline for developing a 24 hour ABM capability. Doctrinally, the Joint Fires and Effects Coordination Centre (JFECC) entity at formation level comprises all the appropriate specialist staff and cells to coordinate and deconflict a range of fires and effects including GBAMD and air assets. However, true integration of the airspace control and airspace user elements - in particular the Tactical Air Controller Party (TACP) and the GBAD element - that have the ability to integrate into a battlespace management system the input of their own sensor/s with external air picture feeds would represent a significant up scaling of the Joint Land Force's ability at the tactical level to coordinate own operations and force protection - affording a higher complexity threshold - within the operational airspace. The desired endstate being the capability for positive real time control that supports responsiveness in a complex battlespace and high threat environment, and that limits the sometimes mutual exclusivity of effects delivery and ISTAR and GBAMD (including CRAM). Certainly this would require a review of force structure within those elements and a commitment to joint training to develop the capability - noting existing competencies would provide a solid development platform. Additionally, a multi-purpose sensor provides the development platform for the future BMS-GBAMD and hence better supported air defence responses and their interconnection and enhanced situational awareness - including further devolution of the common operating picture (COP) due to the networking capability. Attention is also drawn to the experiences of the US Army in tasking its air defence capability with air defence and air space management responsibilities for deployed land forces to successfully fill that capability gap for their operations and similar examples amongst the other allies.

A holistic approach to development and delivery of GBAD capability will need to be maintained.

A holistic approach to development and delivery of GBAD capability will need to be maintained. As outlined, Joint Land Force air defence capabilities, including capabilities to defeat munitions, must represent a layered system of response capabilities in order to be best able to meet an increasingly seamless threat spectrum. Currently, and in the foreseeable future, there is no one missile that is optimised to defeat the full spectrum of air threats - including inhabited and uninhabited platforms and munitions - at desired engagement ranges. This means that the upgrading and acquisition of air defence effectors should achieve a complimentary array of response options that achieve some overlap in engagement capabilities in order to achieve depth and redundancy in interception of air threats - including missiles and unguided munitions - and contribute to maximising the effectiveness of the shield function. As air defence technology continues to evolve, the ability of missiles, air defence guns and even lasers to engage the full spectrum of threats, ranging from small ballistic munitions through to large aircraft at longer ranges will mature¹³. An incremental approach to acquisition in this area is logical given that current gaps that exist in response capability can be filled through phased acquisition and integration to meet current and future predominant threats. Additionally, the maintenance of multiple

12. Ibid 2009 pp22 'Forces...must be provided with flexible multi-purpose...sensor platforms that can be used in a range of operational scenarios in complex, probably urbanized terrain.'

13. The reportedly successful firing of the Israeli Iron Dome counter missile defence system in Jul 09 is indicative of emerging capabilities - in this case a CRAMJ effectors that employs a small guided missile.

and scalable response options supports the concept of Mission Oriented Force Protection¹⁴ whereby air defence solutions can be tailored to meet the threat for particular missions. Figure 1 below offers a broad concept for a GBAD integrated force protection model from air threats for the Joint Land Force.

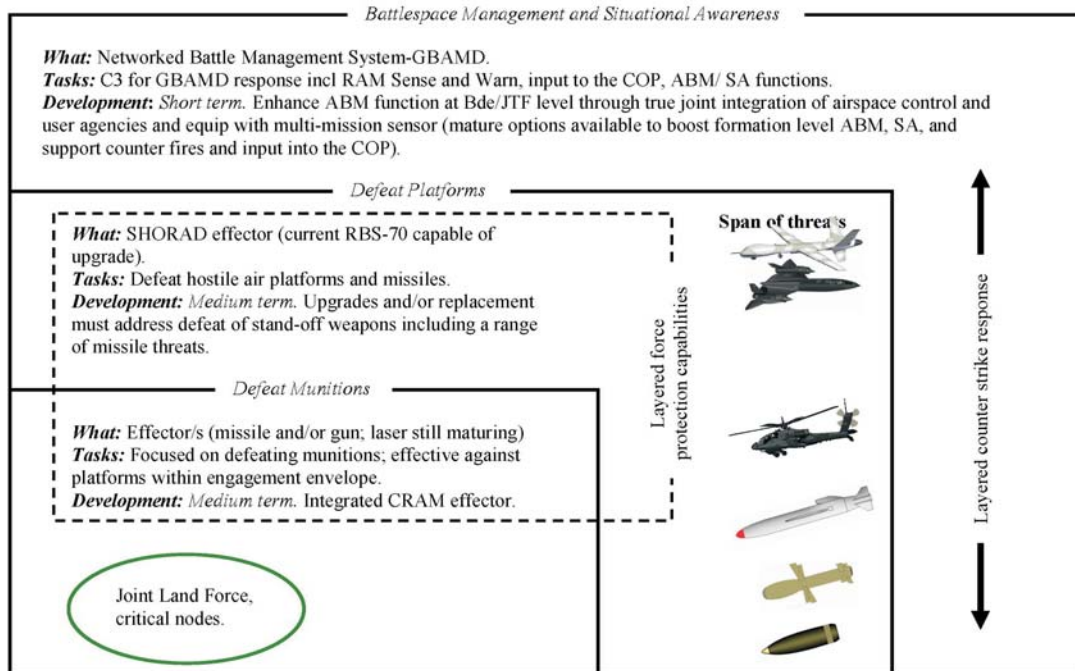


Figure 1. Ground based air defence integrated force protection model for the Joint Land Force

Conclusion

The future operational airspace that the Joint Land Force will operate in will be increasingly complex due to both increased own use of the airspace and the expanding and changing nature of air threats that will enter it and operate within it. As the range of matured air threats continues to expand and proliferation becomes more pervasive to a multitude of actors, action will need to be taken for the Joint Land Force to be able to meet those threats and achieve an acceptable degree of force protection whilst still allowing acceptable levels of freedom of action in any given operational scenario. The increasing scale and complexity of Joint Land Force operations utilizing the operational airspace will require significant changes in the capacity of the force to take control of that airspace and achieve a level of ABM and SA that will facilitate high tempo concurrent actions and effectively contribute to the ISR function.

To meet these challenges a holistic and incremental approach to developing Army's GBAD capability should logically be maintained. This should include a layered response capability to meet the broadening and increasingly seamless air threat spectrum - which includes missiles and a range of munitions - some of which are likely to present real challenges to the ADF when deployed in the future. The prioritised development of battlespace management and sensor capabilities - including leveraging current skill sets and conducting joint training and development to achieve true joint integration at the tactical level to perform ABM within the Joint Land Force - has the potential to realise significant advancements in capability in the short to medium term.

The Author

Lieutenant Colonel John McLean has had extensive service with the 16th Air Defence Regiment including duties as battery captain, battery commander and currently as the commanding officer. His other postings include to Training Command as the Senior Instructor of the Combat Officer's Advanced Course and to the Defence Intelligence Organisation in a variety of intelligence roles. He has served on operations both in East Timor (2000) as an operations officer on the Australian national headquarters and in Iraq (2006) as the Chief of the Insurgents Group Branch, within the force level intelligence division. Lieutenant Colonel McLean is a graduate of the Singapore Command and Staff College, and holds several masters degrees with specialisations in leadership and project management.

14. Adaptive Campaigning, Army's Future Land Operating Concept, Version 22.3 dated 20 March 2009.

THE BENEVOLENT KING

FIELD ARTILLERY ON THE MODERN BATTLEFIELD

By Lieutenant Colonel Sean Ryan

The Field Artillery is no longer relevant on the battlefield. It is inaccurate, resource intensive and causes excessive collateral damage. The field artillery is a capability of a bygone era of warfare. It is just no longer needed. The controversial white paper written by Colonel Sean MacFarland, Colonel Michael Shields and Colonel Jeffrey Snow, called the 'The King and I,' certainly left readers with the impression that the above was a common understanding of the Field Artillery capabilities in the United States Army and that the United States Field Artillery was in disarray. The paper probably summed up how the rest of the world's field artillery communities felt about their role in the information age battlefield and prompted much 'internal navel gazing' by Gunners around the Western World. This was certainly true for the Royal Australian Artillery.

One of the vexed issues arising from the fight in Helmand and across Afghanistan is the challenge of collateral damage.

But is this really true? Has the King of Battle, as the airpower advocates successfully proclaim, become a technology of a bygone era of warfare?

From a perception perspective one would probably say 'yes' but the reality seems quite different. But the true test of the perception versus the reality is to examine the recent operational applications of the field artillery. It would seem that the battlefields of Iraq, Afghanistan and Pakistan continue to demonstrate that the field artillery's key tenets of flexibility, responsiveness and guarantee remain essential in information age warfare. It is an environment where the enemy is lethal, mobile and hard to detect. Afghanistan represents the West's most recent warfighting

experience with over seven years of lessons in Counter Insurgency (COIN) fighting.

Case Study – Afghanistan

Afghanistan is not a unique example of COIN fighting. It is a battlefield where all the complexities of physical, human and informational terrain exist. The physical terrain dominates the mobility and economy of the country with the altitude, mountains, rivers, agricultural zones and urban domains. It has the complexities linked to human terrain with its cultural, language, tribal and ethnic boundaries. Finally, even with its limited modern communications networks, the informational domain works in seconds over modern systems like the internet and traditional methods like word of mouth. It is an operational domain that demonstrates the complexities of warfare, even before the intricacies of coalitions, national caveats, inter-service operations and combined arms operations. It is a domain that many believe is unsuited to the field artillery.



4th Field Regiment Gunners In Action

However reflecting on the operations of the International Security Assistance Force (ISAF) during the Afghan winter of 2008/2009 one might come to a slightly different conclusion. The 2008/2009 Afghan winter was a particularly mild winter by Central Asian standards. The winter continued the drought the Afghans have been experiencing for the last 17 years. These factors meant there was less snow and the temperatures were milder than coalition forces might have expected. It was still very cold. The weather was also kind with more fine days. These conditions provided both ISAF forces and the insurgents the environment to continue operations almost unabated. It therefore meant that both forces were regularly engaged in close quarter direct fire, indirect fire and improvised explosive device (IED) engagements. These engagements were both

extremely lethal and quite drawn out. Often ISAF forces required additional fire support to support extraction of casualties and achieve a clean break from the fire fight. This was extremely evident along the Helmand River where the fighting was constant.

By way of illustration, during a sixteen day period in January 2009 the ISAF Forces along the Helmand River were involved in 40 engagements where indirect fire or close air support (CAS) were needed to deliver a lethal blow to insurgents or to support a clean break from the contact. 32 of these engagements were supported by the field artillery and eight were supported with CAS. During this same period tube artillery fired 150 rounds on 12 of the days and CAS dropped 12 bombs over four of the days. Engagement response times for the engagements varied during the period with tube artillery averaging about three minutes from call for fire to rounds hitting the target and CAS averaging about 12 minutes from request for support to CAS aircraft checking in with the Joint Terminal Air Controller (JTAC). Contributing to these figures were the weather conditions. Over the sixteen day period, eight days of CAS operations were lost due to cloudy conditions and localised rain. While these figures do not include the number of mortar rounds, multiple launch rockets or Close Combat Attack (CCA) Aviation munitions fired during the same period. The data does provide an indicative trend for the way the fire support system was employed in the Helmand River region of Afghanistan. This situation was typical of the events and engagements across Southern Afghanistan during the same period.

Deductions

Afghanistan seems to be the West's bench mark for the way operations, specifically COIN operations, will evolve over the coming years. One thing that is clear from the above case study is that the field artillery remained more available to troops in contact than CAS. The field artillery was unaffected by weather and could respond, if in range, to any troops in contact situation. This unfortunately could not be said of the CAS. This meant that the field artillery, out of necessity, was more available to the troops in contact. In fact field artillery responded to four out of every five situations and demonstrated its versatility and availability to ground troops.

Another significant advantage the field artillery had over the CAS was its response time. The average field artillery response time was about three

minutes from call for fire to rounds hitting the target. The CAS on the other hand because of time required to transit across Afghanistan from a holding area and Joint Terminal Air Controller (JTAC) communications issues due to terrain could only manage about 12 minutes from request for support to CAS aircraft checking in with the JTAC. As a result of these delays it would be 20 minutes by the time the request was processed from the JTAC, through the chain of command, to weapon release. Progressively over time this response time improved as more aircraft became available and environmental conditions improved but these timings were still about three times that which the field artillery could achieve.



4th Field Regiment Gunners at FOB Armadillo, Helmand

One thing that provided the field artillery the response advantage was the deployment of field artillery in two and three gun troops in Forward Operating Bases (FOB). The deployment of troops was brought about by two related reasons. One was weapon range. The 15 + Km of the 105 mm guns made it difficult for concentrations of guns to cover the area of operations. The other reason was the dispersed nature of the ground troop patrols and FOB. This departure away from traditional field artillery battery structures and fire unit philosophies provided an adaptive and flexible coverage of the Helmand River area. This troop or platoon deployment Tactic, Technique and Procedure (TTP) was common across Afghanistan. This would appear to be a common practice for field artillery in a COIN fight given the Australian experience in Malaya and Borneo. It is an observation that the field artillery community, particularly the Royal Australia Artillery, should take on board with the troop being the fighting brick and not so much the battery.

One of the vexed issues arising from the fight in Helmand and across Afghanistan is the challenge of collateral damage. This is a whole subject in itself and it does not readily play itself out in the case study above. Collateral damage was the most decisive event that would unhinge ISAF information operations from both an internal perspective and an international legitimacy perspective. It did not matter whether field artillery or CAS caused it. It hurt the campaign either way. From a tactical perspective there were two significant factors in collateral damage. The factors are weapon effect and accuracy. In regard to weapon effect the situation in Afghanistan highlighted that a 500 lb or 2000 lb bomb was more destructive and likely to have a more enduring effect on ISAF information operations than a smaller system. Commanders needed to take more care in using CAS munitions because there were no options below 500 lb bombs. The smaller 30 lb artillery shells had less target and informational effect. When the effects registered they were more localised and tactical in nature. Accuracy was a different matter. The CAS were solely employing guided munitions. So as long as the target location was accurate the munitions would hit the target. Field artillery was not quite as precise but remained accurate hitting the small target areas easily first time. Accuracy was an area where the guided munitions of CAS had an advantage.

Conclusion

It was clear from the operations in Afghanistan that field artillery remains a key component of the combined arms team even in the COIN fight. There is a tension between field artillery and CAS but no competition should exist. They are complementary capabilities that need to be collectively integrated into the plan. The plan should account for their strengths and limitations. Field artillery and CAS,



Australian Commander, 4th Field Regiment
Gunners and their Royal Artillery brothers

when combined with mortars, multiple launch rocket systems and Close Combat Attack (CCA) Aviation, form an effective and essential fire support system. The key to these systems application and the tension between them in their use will always be how to determine balance of systems in the fire support system.

... artillery, by remaining 'Brilliant at the Basics,' must be able to effectively manage ill informed strategic perception. The perception is just not true.

Field artillery is very relevant on the modern battlefield. It provides advantages that CAS cannot provide. It is clear that it provides flexibility, responsiveness and guarantee. In saying this it probably needs some structural change that makes the troop a more pivotal component of modular field artillery system. What is also important is that the field artillery, by remaining 'Brilliant at the Basics,' must be able to effectively manage ill informed strategic perception. The perception is just not true.

In the end fights are ugly and the field artillery remains a core element in the close combat COIN fight. The operations in Afghanistan have proved that the field artillery should not be as introspective as the authors of the 'King and I.' Gunners must remember that the field artillery has always been about being the benevolent King of Battle. Long live the King.

References

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'Is the ADF Failing to Adequately Control the Airspace its Forces Operate Under on Operations?'

The Ground Based Air and Missile Defence - Land 19 Phase 7 Solution by the students of ROGC 01/08.ⁱ

'Three Australian soldiers were slightly wounded during an overnight rocket attack at Kandahar Airfield in Southern Afghanistan'¹

Introduction

The three diggers escaped more serious injury by chance, if the metrological conditions, sighting made by the insurgents or the manufacturing quality of the rocket had been different the rocket attack could have proved fatal. An attack of this type proved in Basrah in 2007 when British forces suffered three killed, three seriously injured and nine slightly injured when a 240mm rocket struck their accommodation at Basrah airportⁱⁱ. Unlike the British servicemen there is currently no mitigation to the threat of Indirect Fire (IDF) munitions once the rocket has been fired, in place at the Forward Operating Bases (FOB) in Helmand, Kandahar or Oruzgan Province.

The ADF's commitment to Operation Slipper is currently 1000 personnel all of whom are vulnerable to this threat as there are a number of limitations with the ADF's current GBAD system which include the following capability shortfalls² :

- limited Integrated Air and Missile Defence System;
- limited organic protected mobility;
- no capability to defeat Rockets/Artillery/Mortars (RAM); and
- short range effectors and sensors.

The scope of this essay is to outline the solution to countering the threat ADF personnel are facing today and other emerging air threats as outlined in the Army requirement to enhance or replace RBS 70ⁱⁱⁱ. This essay will first address these threats and how they are likely to evolve out to 2020. It will then go on to outlining the methods of mitigating them. This will include defining the requirements for the sensor, the threat effector, the systems mobility requirements, the command and control systems as well as the organization of Army air defence. In each section we will define how the acquisition of a robust ground based air and missile defence (GBAMD) will not only directly mitigate the direct threat to ADF personnel, but it will also contribute to wider defence capabilities.

Finally we will conclude with a recommended acquisition strategy to meet the Land 19 Phase 7 capability. Throughout our analysis into a practical solution to the capability a realistic procurement cost for the system, including through-life costs, has been uppermost.

1. The Australian Government Department of Defence 17/07/2007

2. For further reading at RESTRICTED level see Staff Officer Air Defence, *Initial Capability Definition Statement for Ground Based Air and Missile Defence*, Land Development Branch, Capability Development Group, Australian Defence Force, 2008, p5

The Threat

In order to ensure that the correct GBAMD is procured, we must first analyse the threat. Primarily this is taken to be the threat to ADF deployed personnel as it is not predicted that Australia will be involved in a nation state conventional war out to 2020. The future air threat will be characterised by the proliferation of Unmanned Aerial Vehicles (UAV), cruise/ballistic missiles and Rockets, Artillery and Mortars (RAM). This is as a result of the cost of acquiring and maintaining the capability of modern military manned aerial platforms coupled with the ease at which western intelligence agencies can detect them. There is also a risk to the operator that is largely becoming unnecessary, due to the developments in unmanned platforms. The cost benefit analysis has led the insurgents in Iraq, Lebanon and Afghanistan to concentrate on procuring accurate, longer range RAM and UAVs; this is a trend likely to increase^{iv}. As a result of increased stand-off weapon (SOW) and sensor ranges the requirement for GBAMD assets to defeat munitions in flight, as well as the delivery platforms themselves, is increasing. Importantly, many of the air-based threats are over-lapping in their attack profiles and performances.

The future air threat will be characterised by the proliferation of Unmanned Aerial Vehicles, cruise/ballistic missiles and Rockets, Artillery and Mortars.

Mortars used by insurgents can be set up covertly between 0.9 - 5km from the target. The munitions are fired within seconds allowing the insurgents to disperse into the surrounding population. Multiple Rockets Launchers (MRL) are also popular with insurgents and have ranges from 8-30km; countering this threat is dependant on the level of firepower the insurgency can mass. With ad hoc or limited volume of fires (ie: 1-5 rounds per threat engagement), then GBAMD could be provided by conventional GBAMD missile systems, which can target and defeat individual munitions. However, if large volumes of threat fires are expected (ie: such as opposing force shell and rocket artillery barrages that can number in the hundreds of rounds per day), then using a very expensive conventional GBAMD missile system would be cost prohibitive, whilst stressing the supply chain of available kinetic effectors. In such a case, a low cost effector would be needed to either replace or complement the GBAMD missile system, depending on solution engagement ranges. In addition, ballistic munitions have very different trajectories as well as very small radar cross sections (RCS) making the kinetic effector solution very demanding. The threat posed by rockets has largely been discredited due to the inaccuracy of insurgent fire; however, as is their trend in applying off-shelf technologies to legacy systems, there is a risk that insurgent groups will adapt to manufacturing ad hoc PGMs.

The UAV threat in 2020 is likely to come from up to a Tier II system. To produce UAVs beyond these capabilities, requires the same cost and technology base as manned military aircraft ...

UAVs and cruise missiles, possibly including the next generation of hypersonic air-delivered stand-off weapons (SOW), are less complex targets in terms of ballistics and RCS, but are generally a more accurate weapon and carry a larger payload. The delivery range (launch) of a SOW is around 25km. The technology to produce these weapons is commercially available off the shelf (COTS)^v and numerous examples have been exported from states of concern³. The UAV threat is of particular concern as its role in target acquisition has the potential to cue other battlefield effects, beyond the air threat. The UAV threat in 2020 is likely to come from up to a Tier II system⁴. To produce UAVs beyond these capabilities, requires the same cost and technology base as manned military aircraft; however, China has displayed strong interest in HALE UAVs, as well as supersonic UCAVs. As is the case with most new technologies, the cost

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3. A US term relating to nations suspected of sponsoring terrorist organizations or activities, supporting terrorist activities, or providing safe harbour to terrorists (Iran, Iraq, North Korea, Pakistan & Syria).
 4. USAF tiers refer to roles for which various models and their manufacturers competed:
 - Tier N/A: Small/Micro UAV.
 - Tier I: Low altitude, long endurance.
 - Tier II: Medium altitude, long endurance (MALE).
 - Tier II+: High altitude (60,000 ft+), long endurance (3000 nm radius) conventional UAV (or HALE UAV).
 - Tier III-: High altitude, long endurance low-observable UAV.

price eventually lowers and it is, therefore, likely that these capabilities will become favoured amongst threat groups.

The threat from Tactical Ballistic Missiles (TBMs) was dramatically illustrated during Operation Desert Storm in 1991; 12 years later Operation Iraqi Freedom in 2003 had an effective joint plan, including GBAMD, put in place to counter it. Whilst mainland Australia is currently immune from this threat, its forces deployed in Iraq and Afghanistan are not. Both SCUD C (300 km) and D (600 km) missiles are easily within reach from Iran and Pakistan and launches overland from these countries could not be intercepted by the RAN Hobart class Air Warfare Destroyer (AWD).

China is taking a lead in developing new indigenous attack helicopters based on western designs.

Finally, we must consider the conventional manned aerial threat from fixed and rotary wing aircraft. As already discussed, this threat is likely to decrease but will always be present. The greatest regional threat is likely to come from China, India, Pakistan and North Korea, listed in order of capability. As an example, in early 2007, the PLAAF began to fuse sufficient numbers of fourth generation multirole fighters plus AWACS aircraft and Surface to Air Missile systems to pose a credible challenge to Taiwan's air arm as well as any US or Japanese combat aircraft that might conceivably come to Taiwan's aid in the event of conflict. China's Su-30MKK, J-11 and J-10 fighters combine beyond visual range (BVR) and helmet-sighted AAMs to present capabilities equivalent to, or, in some cases, superior to those of US and Japanese warplanes. Furthermore, the PLAAF is now producing competing families of laser and satellite-guided precision munitions (PGMs) to add to its considerable inventory of Russian PGMs with Line of Weapon Release (LWR) up to 25 km. Looking to the future, China may have three indigenous fifth generation fighter programmes underway that emphasise stealth attributes, super-cruise capable turbofan engines, with modern phased array radar technology and internal weapons carriage. The PLAAF is also intending to introduce the H-6K bomber, which features land attack cruise missiles and possibly PGM delivery capability. On the battlefield, the greatest threat in this category is likely to come from rotary attack aircraft with LWR up to 5 km, as these can easily target mobile assets during deployment. Beyond western nations, China is taking a lead in developing new indigenous attack helicopters based on western designs.

The typical Radar Cross Sections (RCS) of these various threats is reproduced and notated below⁵. Based on assessed threat and awareness need, service need identifies the priority^{vi} for acquisition as:

- RAM/TBM,
- Rotary wing (RW),
- UAV,
- Fixed wing aircraft (FW),

Given the proliferation of UAV systems, more emphasis should be placed on mitigating this threat. The following threat priority list will lead to the solution that best matches the Army's current and future needs:

- *RAM* - RAM is a pertinent threat that requires immediate mitigation;
- *UAV/Cruise Missiles* - UAVs are an emerging threat, and given their accuracy and potential to cue other effects, it requires a higher priority than has been previously afforded;
- *TBM* - TBM a potential threat to our deployed forces; and
- *RW and FW* – will both increase in capability, but their potential for use is likely to diminish.

5. Rotary-wing aircraft 10m², Fixed-wing aircraft 1m², Tier II UAV 0.1m², Mini UAV 0.1m², Cruise Missile 0.01m², Rocket 0.01m², Artillery 0.001m² and Mortar 0.001m².

Surveillance Solutions

Now that we have understood the threat, the second stage to forming a defence against GBAMD is to select the sensor. The sensor is the heart of the GBAMD system and is usually the most expensive asset. It requires significant investment to ensure that it is capable of dealing with existing threats and countering future electronic protective measures (EPM). Detecting modern aerial platforms requires an extremely capable sensor; this is in no small part due to stealth technologies and modern Electronic Counter Measure (ECM) suites. RAM is the hardest challenge for the sensor radar, as the effective range of the interceptor is relatively short yet the interception must be as far away as possible from the defended asset⁶. Whilst ballistic trajectories of targets can be plotted by radars currently fielded by the ADF, they are unable to generate the necessary intercept algorithms. As outlined above, the requirements of a CRAM sensor compared to an airspace control/air defence sensor to achieve early warning, alerting and cueing will require differing modes of detection and interrogation from the sensor platform; therefore, any surveillance suite acquired by Army would require flexibility in its potential mode of employment.

In addition to sensing incoming threats, the sensor must be fused with other artillery Surveillance and Target Acquisition sensors⁷, to detect and track incoming rounds. Once a threat is detected, audio and visual alarms need to warn exposed soldiers to adopt force protection measures. It should also predict an accurate Point of Impact (POI), so as to prioritise post attack recovery and an accurate Point of Origin (POO) for Offensive Support (OS) to treat the threat.

The capabilities of the sensor must be considered in a Joint context to ensure that a complementary system fits into the existing Integrated Air Defence System.

Another prerequisite, to make such a system of any value, is its mobility; this in turn poses the problem of logistical support, which will be discussed later in the essay. The capabilities of the sensor must be considered in a Joint context to ensure that a complementary system fits into the existing Integrated Air Defence System (IADS). Considerations include the capabilities which in future will involve Boeing's 737 'Wedgetail' Airborne Early Warning and Control (AEW&C) capability, land based Royal Australian Air Force (RAAF) sensors linked together via phase 1 of project Air 5333 (of which 114 MCRU equipped with TPS-77 is a component) and RAN AWD equipped with the AEGIS radar.

Non Cooperative Target Recognition (NCTR) as part of the sensor software would allow additional discrimination between targets based on their mean RCS and rotor flash. A passive Electronic Support Measure (ESM) capability would allow further criteria on conventional manned platforms which in turn would lead to early target classification. The surveillance contenders were evaluated according to the requirements set out in Project Land 19 Phase 7 Capability Study, dated 9 July 2008 and the table summarising the data reveals the following:

Radar	Range (km)	Targets	IAT/Min	Ops	RCS Detect	Mobility	FOC	Cost/M USD
GAMB BAMSE	100-150 3 modes	100+	10	2	0.001m2	20ft ISO C-130	1999	10
Shikra Crotale	150 2 modes	200+	U/K	U/K	0.01m2	20ft ISO C-130	2006	U/K
TRML-3D	200 5 modes	U/K	10	2	0.01m2	40ft ISO	2001	12 -75
RAC -3D	100	U/K	15	2	U/K	C-130	1996	U/K
ATAR SPYDER	60	60+	U/K	U/K	0.01m2	C-130	2004	14

6. 'Imagine a dot of this size <.> travelling across this letter <O> representing the firing window, at 200 metres per second for an 81 mm mortar or 320 metres per second for a 155 mm artillery shell, to have a vague scale of the fire control system's job'- Armada International.

7. Thales/Raytheon's TPQ-36 'Firefinder' known in the ADF as the Weapon Locating Radar.

Radar	Range (km)	Targets	IAT/Min	Ops	RCS Detect	Mobility	FOC	Cost/M USD
Sentinel AMRAAM	75	U/K	10	2	0.01m2	UH-60	1999	3.6
MMRS USMC	120+?	100+?	30	4	0.01m2?	HMMV	2016	U/K

The only sensor in the above table that is deployed on operations in the C-RAM role is the Giraffe Agile Multi Beam (GAMB) and the Elta EL/M 2106 ATAR 3-D. The latter is likely to be replaced by the new IAI/Elta MF-STAR, but the only details available at this stage were that it would have a range of 100km. The clear leader in this category was the TRML-3D in terms of its capabilities as a sensor. However, it should be noted that, unlike the GAMB, it has not been mated to an armoured vehicle, due to its size.

None of these radars have the capability to sense, warn and provide interception data for TBMs. The only surveillance solution fielded at the moment is the AN/MPQ-65 Radar Set for PATRIOT PAC 3 and it represents a substantial upgrade from the AN/MPQ-53 Radar Set which equipped PATRIOT PAC-2 and older units. AN/MPQ-65 detection ranges are classified, but it will be a substantial increase on 120 km for the AN/MPQ-53. MEADS is a competing program, which is likely to field a solution in 2017 and it will include a sensor radar capable of detecting threats over a 360° arc over a similar range to the AN/MPQ-65. A mitigation of this threat is outside the scope of this essay due to the cost of the system. However, the threat to ADF personnel and the development of MEADS should be closely monitored.

Threat Effectors

The threat effectors all have overlapping capabilities. Principally at the very short range air defence solutions (VSHORAD), systems will be able to target any munition that comes into its short (2km) engagement envelope. These systems will not only be used to defeat current insurgent threats, but must also be capable of mitigating the threat from enemy OS and air-launched SOW. The Short Range Air Defence (SHORAD) solutions offer a greater engagement and detection envelope, but are less capable against high tempo RAM attacks. The High to Medium Air Defense (HIMAD) range systems can target TBMs, some aircraft and larger munitions. Once again the threat effectors were considered against the Project Land 19 Phase 7 Capability Study:

- VSHORAD:

- * *Sky Shield*. In the VSHORAD category, this system was the clear winner, with the ability to defeat all threats at very short range⁸. In addition to its proven GBAMD capability, this system has the potential to influence the ground battle. The system is capable of being mounted on an ASLAV chassis (marketed as 'Skyranger');
- * *Centurion*. Centurion, in its current form, was discounted. Whilst fielded on operations, Centurion is only a solution to the C-RAM problem and is not a VSHORAD system. In its current form, it is also less mobile and lacks ballistic protection. Subsequent Centurion developments are likely to be highly modified to suit user needs, swapping the existing cannon for Tactical High Energy LASER (THEL); this future system may, eventually, provide a VSHORAD capability.
- * *Iron Dome*. Iron Dome was, on closer examination and extensive research, discounted as a VSHORAD option. Whilst it will be fielded on operations shortly, it is a solution that has been developed to meet the specific Israeli need for countering rockets. Iron Dome is not a VSHORAD system.

- SHORAD/LLAD:

- * *IRIS-T*. IRIS-T was considered as a complimentary missile capability to CAMM (mentioned below). However, because it is an Air-to-Air Missile (AAM) that has been adapted for use in GBAMD, there have been compromises made in its performance. It has an Imaging Infra Red (IIR) sensor, which can be locked to the target before or after launch (LOBL/LOAL) using a datalink for mid-course guidance. It has a range of 12 km and an upgrade is planned to enable ranges reaching out to 40 km.

8. RAM: 2-2.5 km, UAV, CM: 3 km, FW, RW: 4 km and ground tgts: >5 km

- * *Common Anti-air Modular Missile CAMM*. CAMM was selected as a complimentary missile system. It is in development as the effector for the GBAD replacement in the UK⁹ (Army and Navy) with a Full Operational Capability date scheduled around 2017. It is, like IRIS-T, a vertical launched missile based on ASRAAM, with a range 60 km; like ASRAAM, it uses a radar sensor for terminal guidance and, like IRIS-T, can use a datalink for mid-course guidance.
- * *Spyder*. The Spyder system utilises the short range IIR (Python) and longer range (radar guided missile) Derby. The deployment of this system in Georgia in 2008 indicates potential proliferation issues that would adversely influence the development of countermeasures; this is especially pertinent, given the ADFs capability acquisition cycle.
- * *BAMSE*. BAMSE is a similar system in concept to JERNAS, with an extended range of 15km. It was not valued as a viable SHORAD/LLAD system, as it can only have two missiles in flight and uses only one guidance principle.
- * *SLAMRAAM*. SLAMRAAM has been fielded since 1999 and is based on the AMRAAM AAM. It was not valued as a viable SHORAD/LLAD system, as the missile is not as capable in the GBAMD role compared to the AAM role it was designed for, with little terminal effect at its maximum range of 25 km.
- * *MICA*. MICA is a similar system in concept to SLAMRAAM. It was not valued as a SHORAD/LLAD system as it has no LOAL capability.
- HIMAD. A mitigation of the longer range threat, including TBMs, is outside the scope of this essay, due to the cost of the system and the political ramifications associated with such a system within our national community. However, the following systems were evaluated:
 - * PATRIOT PAC3;
 - * Arrow/David's Sling;
 - * ASTER;
 - * MEADS; and
 - * THEL.

Command and Control (C2)

The acquisition of a surveillance sensor of the capabilities described in the earlier section will be a revolution compared with the ability of the legacy PSTAR-ER system. The fidelity and quantity of track information will require a specialised C2 facility, in order to maximise the potential of the system. Principally it will need to be able to allocate targets, compile and release the Recognised Air Picture (RAP) over existing and future link architecture¹⁰ and over a number of bearer means¹¹. The linkages are critical to fusing the internal and external sensor data from a myriad of joint/coalition platforms.

... an emerging capability gap, caused by the proliferation of competing air space users at the forward edge of the battle ...

It will require open and flexible system architecture to allow for integration of multiple sensor and weapon systems, if Land 19 Phase 7 solution is a phased acquisition. The solution should also be based on the latest proven technologies with Military Off-The-Shelf (MOTS) or Commercial Off-The-Shelf (COTS) hardware and software, where applicable, to drive down the end cost associated with such a system.

The system will also need to be highly mobile and have the ability to display its data externally in supported HQs. This is crucial, as the proposed radar sensor has the capability to dramatically change the methods currently employed in managing airspace at the forward edge of the battle (particularly below the coordinating level). The ADF currently relies on procedural control, which apportions airspace piecemeal to users in order to keep all users safe. This is because the Airspace Control Element does not

9. Future Local Area Air Defence System (FLAADS)

10. Coalition Link 16 and Link 11 A & B, Low Level Air Picture Interface (LLAPI) protocol and Soliphys.

11. SATCOM, DSN, PSTN, Mobile Subscriber Equipment & UHF radio.

have a real time picture of where the air space users below the coordinating level are. As well as detecting, tracking, prioritising and neutralizing aerial threats, this system and its C2 architecture would help facilitate more agile, positive control for the Airspace Control Element. This is an emerging capability gap, caused by the proliferation of competing air space users¹² at the forward edge of the battle and often under the coordination level.

Finally, a C2 system will require a robust mission planning software to aid sighting of systems, display the airspace control measures, strip/disseminate airspace control orders and strip/disseminate airspace task orders. The mission planning software will need to be compatible with a simulation and training package that includes the ability to record and play back real time data to ensure that all scenarios can be evaluated. As a manned element of the GBAMD system, it will need to be afforded a level of ballistic and environmental protection commensurate with the conditions we may find ourselves operating in. All modern sensors have an organic C2 shelter and since the recommended sensor solution is the TRML-3D, the contract for this sensor must also address these C2 requirements.

Mobility

An important consideration to any new ADF GBAMD system will be the ability to directly support and have complimentary capabilities to the Hardened and Networked Army (HNA) Battlegroups^{vii}. HNA's key focus, on providing protected mobility for Army units, will need to extend to providing a primary GBAMD system capable of operating with a high level of mobility, and providing armoured protection to the operators of the system. The Adaptive Army initiative has only strengthened and accelerated these requirements for the system.

The combined arms Battlegroup is a hard target when stationary, can apply modern multi-spectral camouflage and rapidly disperse when threatened (provided sufficient early warning is disseminated). However, when manoeuvring cross-country or along roadways, the Battlegroup creates a large signature and is thus easily detected from the air. A key requirement will be in providing mobile air defence coverage that can move at a rate of 15 km/h over open terrain. This does not necessarily require a GBAMD system able to fire on the move, but could include a Collaborative Engagement Capability (CEC) where a group of systems and sensors share information to provide a 'leap-frogging' layer of protection.

A key requirement will be in providing mobile air defence coverage that can move at a rate of 15 km/h over open terrain.

Both the GAMB and the Skyranger system¹³ have been mounted on an ASLAV^{viii} type vehicle. Both systems provide the crew complete protection from small arms fire and NBC attack as well as having the requisite mobility to support the Battlegroup. This platform can also be transported by RAAF C-17 and is a complementary capability to the new RAN Canberra Class Landing Helicopter Dock. For these reasons, CAMM has also been integrated with a new command and control (C2) infrastructure in a self-contained 'pallet' structure that can be fitted to a range of military trucks as air-defence platforms of opportunity.

16th Air Defence Regiment in 2020

The primary change to the organisation of 16th Air Defence Regiment will be the likely reduced manpower overheads caused by the high degree of automation in modern GBAMD systems. The most important aspects of adapting 16th Air Defence Regiment to most effectively employ its newly acquired systems will be achieved by reviewing and revising its training structure, its organisational structure and its command relationships. The complexity and increasing convergence of the air battle through Network Centric Warfare (NCW) suggests that a steep evolution is required in the way the Army and the ADF views GBAMD.

In 2008, the RAAF merged the positions of navigator, airborne electronic officer, air defence officer and fighter controller into a single Air Combat Officer (ACO) specialisation. These officers, now form the bulk of the RAAF's future air battle leadership. The Army will need to ensure that the lessons learned and

12. Air space users include Artillery, UAVs, Rotary Aviation and fixed wing close air support.

13. The mobile version of the Skyshiled mounted on a Swiss MOWAG - Piranha IIIc 8x8 Chassis.

relevant training objectives from this specialisation are replicated in its new organisation. This will also allow Army personnel to facilitate a Joint airspace control function at the forward edge of the battle and below the coordination level, as well as providing force protection to HNA Battlegroups. In order to support Army airspace control and usage, 16th Air Defence Regiment must have the structure, equipment and training to provide effective airspace control solutions.

In order to support Army airspace control and usage, 16th Air Defence Regiment must have the structure, equipment and training to provide effective airspace control solutions.

Conclusion and the Solution

With the increasing proven lethality of indirect fire munitions and air launched weapons, the ADF is failing to adequately control the airspace its forces operate under on operations. The US Army has a policy of zero tolerance towards friendly casualties and the interception of weapons (not just their launchers) has become their new GBAMD requirement. The ADF should adopt the same approach with an incremental policy to provide a robust GBAMD capability against all current and emerging threats by 2018. In addition, by relying on outdated methods for airspace control, the ADF is not ensuring the most effective use of its airspace, and only accepts risk to its airspace users. The recommended strategy for remedying this capability gap is outlined below:

- **Sense and Warn.** There is an immediate requirement to have an active sense and warn capability in place for the ADF personnel in Oruzgan Province. The most capable sensor platform in the field is the EADS TRML-3D. Three would provide the necessary redundancy for collaborative engagement. A radar sensor would equip each Battery for cueing the threat effector, with the third for Regimental HQ to facilitate airspace management. The advantages for this system are that it uses the latest available technologies, has greater range to its competitors and allows a multi-mode capability. These were significant factors in comparison to its size and cost. Its immediate procurement could allow the sensor to be in place in 14 months^x, providing early warning of RAM attack, POO detection and an ability to de-conflict the busy airspace in the province;
- **Mobile VSHORAD.** Given the all weather requirements and its potential to influence the ground battle too, the Skyranger 35 is the clear winner in this field. The system is due to be trialled against the full range of RAM threats and fielded in late 2009. Dependant on the success of the trials, the procurement of two SCCs and four 35mm guns mounted on ASLAV would be sufficient to equip one Battery. The other battery could maintain the RBS 70 system, providing the ADFs SHORAD capability, until Life Of Type (LOT) in 2015; and
- **SHORAD/LLAD.** A decision should be made in 2015, based on the success of CAMM and/or IRIS-T programmes to procure a SHORAD system to equip a Battery.

It has been argued that the RAAF should take over the GBAMD role^x. However, the GBAMD capability exists to directly support land forces on the battlefield, a key part of the land battle, and almost exclusively supporting it in wartime. This argument meant that the RAA kept the role in the UK and it should do so in the ADF. Army GBAD personnel need to continue to be extensively trained in the principles of land battle in order to support the manoeuvre battle.

Given that Air Defence specialist training exists within the RAAF and that the Air Defence Commander is likely to be an airman in any future conflict, there is an argument for GBAMD to have a closer command/organisation relationship with the RAAF and the RAN. For instance, a decision to locate GBAD assets to a RAAF air defence unit would boost the air combat understanding of the Army's GBAD operators and place them within a larger air combat community. This would ensure that enhancements in technical capability are complementary and proposed by technical experts. It would also ensure that developments in aerial combat systems and surveillance techniques are disseminated across the air warfare community.

Finally, given the steep change in capability that GBAMD will bring to the ADF, a GBAMD Coordination Cell needs to be capable of offering planning and employment advice to deployed HQs. A very real threat exists to ADF personnel on operations now and will only increase in the future; the immediate adoption of the recommendations will provide enhanced protection to those personnel.

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- ii Findings of the Wiltshire coroner David Masters into the unlawful deaths of SAC Caulwell, Dunsmore and McFerran, dated 15 September 2008.
- iii LAND 19 Phase 7 Project Land 19, Phase 7 GBAD - RBS 70 Enhancements or Replacements, DMO, 17 August 2006.
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- vi DGPP-A/OUT/2008/R3238365, Army Response on Addressing the GBAMD Capability Requirement, dated 11 September 2008.
- vii Department of Defence, DEC007/05 'The Hardened and Networked Army' amplified at www.defence.gov.au/army/hna/
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ISTAR Battle Wagon

*Lieutenant Raymond Brin
132nd Unmanned Aerial Vehicle Battery*

Introduction

Burgeoning technology and the new face of warfare has changed the way in which Army does business. With the Army espousing the need to be adaptable to current and future conflicts, the challenges facing both the gunners and officers of 20th Surveillance and Target Acquisition Regiment are different to those of the past. Despite this there will always be the need for Gunners to provide the specialist services to whoever needs them, wherever they may be.

... which enables a UAV to be controlled from a Bushmaster, providing unparalleled mobility ...

This paper will examine the challenges that 20th Surveillance and Target Acquisition Regiment faces at it moulds itself into a mobile, adaptive force, capable of producing solutions to the ISTAR threshold. It will look at the intermittent and distant future and what it means to the classic offensive support (OS) side of artillery.

Recent operational groups employing the UAV have increasingly used ScanEagle vision as a means to employ OS. This is due to increased experience with the system by both the operators as well as supported units. As this understanding grows, and members returning from operations have passed on their wealth of knowledge to the Regiment thus allowing the opportunity to develop SOPs and doctrine.

The Future

One exciting future development is the use of a new piece of equipment called the Forward Ground Control Station (FGCS), which enables a UAV to be controlled from a Bushmaster, providing unparalleled mobility, as opposed to static forward operating bases (FOB). This would allow patrolling elements greater situational awareness (SA), and more tailored support. The FGCS has been trialled in country and is looking to be actively employed in

the MEAO with members currently trained to meet the requirements of having to employ a FGCS.

Whilst it provides greater SA and responsiveness, it can potentially contribute to the kinetic effect of the battle by tightening the 'kill chain.' The need to communicate what is seen by the ScanEagle rather than seeing it first hand can slow down the kill chain and therefore decrease the success in engaging fleeting targets. The presence of ScanEagle imagery provided on site can dramatically affect the ability to provide accurate and timely OS.

What perhaps may be overlooked in such a capability is the increased SA it can bring to the UAV operators. An increased contextual understanding of the mission, as well as the ability to directly liaise with ground commanders can ensure more tailored support is offered.

20th Surveillance and Target Acquisition Regiment also specialises in artillery intelligence, more specifically the ability to analyse impact zones and artillery fragments. As a consequence of moving with ground elements, a mobile UAV capability can also offer a level of artillery intelligence. Whilst the mortar threat is not as pronounced as it was in Iraq, recent events highlight the importance of being able to analyse mortar fragments and impact areas. Artillery intelligence can provide commanders with information on the direction and type of mortar employed, as well as possible launch sites. Such first hand information can prove invaluable.

... recent events highlight the importance of being able to analyse mortar fragments and impact areas.

20th Surveillance and Target Acquisition Regiment however offers a wide range of capabilities, many of which have had great success in an operational theatre. The Skylark for example has been used in Iraq to provide over the hill surveillance. 20th Surveillance and Target Acquisition Regiment also offers ground surveillance radar (GSR) as well as a thermal sighting system (TSS), both of which can be fused to complement other sensors.

Mobile ISTAR

The Future of 20th Surveillance and Target Acquisition Regiment lies in the ability to augment all its sensor systems and disseminate the intelligence garnered from it in a timely manner. Thus a step up from a mobile UAV capability would

be a mobile ISTAR capability. In essence combing many of the assets contained within 20th Surveillance and Target Acquisition Regiment arsenal into a 'Battle Wagon' of sorts. This concept would provide ground elements with a Tier 1 UAV (Skylark), Tier 2 UAV (through the provision of a FGCS), GSR and TSS as well as the ability to conduct artillery intelligence.

Coalition forces do not lack the weaponry to neutralise enemy forces. Breakthroughs in the ability to deliver accurate and deadly firepower have given us a dramatic edge. Yet as with previous asymmetric conflicts, it is the enemies ability to remain hidden that effectively dislocates our array of OS. The 'ISTAR Battle Wagon' provides the key link in classical OS to modern day asymmetric warfare.

Breakthroughs in the ability to deliver accurate and deadly firepower have given us a dramatic edge.

The idea of an ISTAR vehicle has already been touched on, with Major Nick Foxall and Captain Tom Drew of 8th/12th Medium Regiment, submitting the idea for an 'ISTAR' package in the M113. Therefore the concept is not entirely new. The introduction of such a mobile capability will present many unique challenges. One is the augmenting of so many specialist skills, whilst still maintaining an effective fighting element. The other significant problem is the need for airspace de-confliction, particularly when conducting training exercises in country. What will be the greatest challenge is balancing the equipment specifications and limitations with the competing demands of the rules of aviation risk management (AVRM) and crew risk management (CRM). These AVRM and CRM guidelines outline the need for UAV Operators to rest, and thus requires precise planning for UAV use, with enough contingency for short notice sorties.

Conclusion

The way in which warfare is conducted requires a capability to bridge the ISTAR threshold. The future concept of an ISTAR Battle Wagon will allow ground forces greater SA but more importantly provide Gunners more opportunity to engage enemy targets. The future of ISTAR is an exciting prospect, and will no doubt reflect the needs of the Australian Army as it engages in conflicts now and into the future.

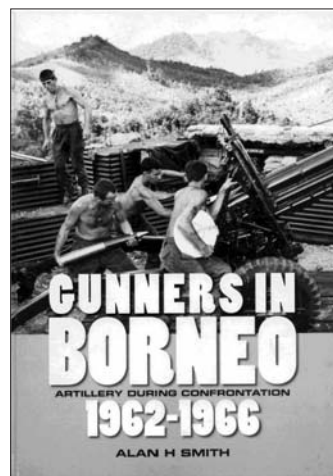
Book Reviews

Gunners In Borneo 1962-1966 Artillery During Confrontation

By Alan H. Smith

*Review by Major General S. N. Gower AO AO (Mil)
Director, Australian War Memorial
(Published in Wartime, Issue No.47, page 69)*

ISBN 978 0 9803 9330 9 (HBK); RAAHC, MANLY NSW; PUBLISHED 2008; COLOUR & B&W PHOTOGRAPHS; 184 PAGES



I don't think its an exaggeration to say few know much these days about the campaign waged by Britain, Australia, New Zealand and Malaysian Forces in Borneo against Indonesia. This is a pity, for it was a successful campaign conducted by a relatively small force

that was applied with great enterprise and innovation. Gunners in Borneo seeks to redress that lack of acknowledgement. The official accounts that do exist have concentrated on the service of the infantry elements with little more than a passing nod to what the artillery, and indeed other arms and services, contributed. The result is a well-researched and comprehensive book.

The frontage to be covered was immense, given the limited number of guns available.

The use of artillery in Borneo was not like that in other wars. The frontage to be covered was immense, given the limited number of guns available. The solution, in most cases, was to use single-gun positions interlocking with fire of a similarly deployed gun on either side. This is not what one would regard as a concentration of fire, but a couple of guns were better than nothing. At least this gave artillery an opportunity to develop and practice procedures for the deployment of

guns by helicopter before the Vietnam War. There was no way guns could have occupied the many positions along the border with Indonesia without being inserted by RAF helicopter, which became the normal way to deploy guns.

Being dispersed in 'penny packets' meant that there had to be a depth of skills in a gun battery. Warrant officers and sergeants, not only officers, had to be capable of undertaking command-post technical duties. Extra signallers were required, and sometimes radio-relay stations had to set up to maintain communications with forward observers. All the time, the usual accurate response was required, even in areas of inadequate maps. Versatility and flexibility were a must.

Being dispersed in 'penny packets' meant that there had to be a depth of skills in a gun battery.

Two Australian battalions served in Borneo on combat operations, along with an SAS squadron and one Gunner sub-unit, 102nd Field Battery. Undoubtedly the infantry appreciated the presence of a forward observer accompanying their patrols. The mutual respect and experience developed on such operations would have helped when larger-scale operations began in Vietnam. The fire of all six guns of a battery, and indeed the entire regiment, were routinely available with decisive results on several noteworthy occasions. But perhaps the message didn't get around to all: a well-meaning infantry officer suggested during the Borneo campaign that I should transfer out of artillery. He didn't see any future for it, single gun applications aside. The value of accurate and responsive artillery support has often been overlooked, and I am not convinced that we aren't seeing a similar situation at present.

Undoubtedly the infantry appreciated the presence of a forward observer accompanying their patrols.

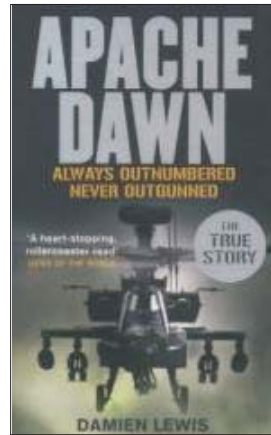
For those seeking insight into what it was like to be a gunner in the Borneo campaign, I highly recommend this book. On a much higher level, it is worthwhile to be reminded that successful military campaigns are indeed possible.

Apache Dawn

by Damien Lewis

Review by Lieutenant Colonel Sean Ryan

ISBN 978-1-84744-255-0 (SBK): LITTLE, BROWN BOOK GROUP; LONDON; PUBLISHED 2008; 304 PAGES



It is 40 degrees in the shade, battles are raging all along the Helmand River and standing by armed and ready are four AH-64 Apaches of the British Army Aviation Corps. In minutes the pilots and gunners of the British Army Aviation Corps are airborne and outward bound to provide fire support to British soldiers in contact but out

of artillery gun range. Steve and Baz, along with their gunners, tear across the desert in their two Apaches at and below 500 feet escorting Casualty Evacuation (CASEVAC) Chinooks to the aid of troops in contact. This is the story of four pilots from 662 Squadron, 3rd Regiment Army Aviation Corps.

In 'Apache Dawn,' Damien Lewis takes the reader through the trials and tribulations of four Apache pilots flying close escort and fire support missions all along the Helmand River, Afghanistan, just like their forefathers of the Royal Flying Corps. It looks at the personal and military challenges experienced by these crews in the operationally challenging environment of Southern Afghanistan.

One of the most telling aspects of the book are the mission orientated and focused ethos of the Army pilots.

The book explores the wide range of missions the Apache crews undertake during a four month tour of duty during a Southern Afghan summer. The crew missions include Close Combat Aviation (Rotary Wing Close Air Support), escort to CASEVAC, resupply escort missions, deliberate ground and air strikes on high priority Taliban targets and the normal hash and trash of keeping aircraft flying in desert conditions (re-learning the lessons of the Royal Air Force's World War II Desert

air force in their new steeds). Lewis provides a firsthand insight into the tactics, techniques and procedures used by gunship pilots in Southern Afghanistan. The book describes the countless occasions the gunships were used to support ground troops with firepower and overwatch. The Apache is a powerful observation platform along with its precise firepower. Lewis describes the technical, tactical and emotional aspects of the missions and operations. The author also shows the versatility of the Apache in providing immediate and close fire support to troops in contact.

One of the most telling aspects of the book are the mission orientated and focused ethos of the Army pilots. They saw themselves and their helicopters from a perspective of soldiers operating for the soldiers on the ground. The author demonstrates time and time again that the attack helicopters were not as cumbersome as Air Force operated Close Air Support (CAS). The book shows how the pilots promote trust with their ground commanders, even though they never meet, through previous experience as soldiers and flying for the troops in contact and not just above them on another sortie. A lesson the Australian Air Force might take notice of.

The book describes the extreme anxiety of combat that is only overcome through effective and focused training.

The book discusses the personal exhaustion experienced during a mission and while a crew was on alert. Lewis highlights the importance of teamwork on the ground before the mission (including the forgotten heroes of any air war, the ground staff who re-fuel, re-arm and maintain helicopters without a word of thanks and the occasional blast from a frustrated, mission focused pilot) and during the mission when coordinating with a Joint Terminal Air Controller in contact. The book describes the extreme anxiety of combat that is only overcome through effective and focused training. One might even say that Lewis only proves the old adage that you need to train as you fight.

The Apache is a beast but in the hands of an expert it is a surgical instrument. Over and over Damien Lewis describes, through the eyes and experiences of the airmen, how to fly and employ an attack helicopter. The book raises some great lessons for the Australian Gunners. They are lessons that will become increasingly important with the arrival of

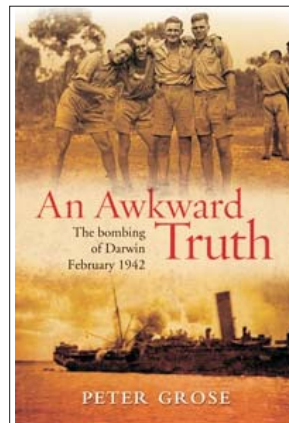
Tiger Armed Reconnaissance Helicopter and the ongoing nature of coalition operations. One lesson that is certain, the attack helicopter is a potent fire support weapon.

An Awkward Truth: The bombing of Darwin February 1942

By Peter Grose

*Review by Major D.T. (Terry) Brennan
Editor RAA Liaison Letter*

ISBN 9781741756432 (PBK); PUBLISHED 2009; ALLEN & UNWIN AUSTRALIA; B&W PHOTOGRAPHS AND MAPS; 258 PAGES



This book places a spot light on the day war came to Australian soil and the aftermath of which little is really known by the Australian population, that is, the bombing of Darwin in 1942. Although the first attack lasted 42 minutes and the second only 20 minutes the ramifications

immediately and afterwards for years to come were significant including being the subject of a Royal Commission. To put this story in context it worth noting that more aircraft attacked Darwin in the first wave then the attack on Pearl Harbour.

Those with an air defence background or interest will find this book particularly relevant. The author devotes significant space to describing the exploits of the anti-aircraft gunners and their conduct before, during and after the attacks. The tactics, techniques and procedures used by the gunners are described in detail as well as the short comings of their training including they had not fired any live rounds before the attack.

The author describes an isolated frontier town which was not prepared for what was about to happen and a defence force which was still very much focused on operations elsewhere in the world and not on defending Australia especially its northern approaches. The book explains the petty politics of a small town and the rivalries between various parties including the military which contributed to the failure to prepare for the attack

thoroughly and the confusion that occurred afterwards.

It was this frontier mentality that probably contributed to the poor leadership displayed by key civilian and military people after the bombing and the chaotic reaction of the population especially the mass exodus known as the 'Adelaide River Stakes'. A critical factor was the failure by the leadership to make rational decisions and to set priorities including the maintenance of law and orders and this is no more evident than with the looting which became prevalent and the fact that some of the ring leaders were military police. The author poses the question as to what is looting and what is appropriate behaviour with regard to taking items from vacated houses and premises.

... devotes significant space to describing the exploits of the anti-aircraft gunners ...

The author addresses the much debated size of the death toll and the decision by the government at the time not to disclose in any detail what happened to Darwin in the name of the 'national interest'.

The author takes the reader through the events from a Japanese perspective that lead up to the bombing. It is explained in a simple easy to understand manner which sets the scene and describes the rationale for what happened to Darwin. If the authors claim is correct I did not appreciate how close Australia came to being invaded by the Japanese. In the book it is stated that strategists in the Japanese Navy wanted to prevent the government of the United States of America using Australia as a launch point for a counter attack against Japan, however the Army disagreed as they saw the threat being Russia and Army won the day.

The day of the air raids and the events from both sides are explained in detail. The fall out and impact on the town of Darwin is detailed in a frank and open manner that only comes with the benefit of time and reflection on the events. It highlights the whole range of human strengths and weakness in times of extreme pressure and great stress that occurred during and after the raids.

The author highlights the town plan of Darwin especially its key civilian and military infrastructure which was very concentrated and located close to the coastline presented easy targets for the Japanese aircraft. The author implies it would have been less vulnerable if they were more dispersed. It

is interesting to note that not much has changed in the ensuing decades as the facilities are probably more concentrated than ever.

From a personal perspective this book has filled a gap in my knowledge of Australian military history and I am sure it will do the same for many readers. Unbeknown to me prior to reading this book was that the Japanese bombing of Darwin resulted in a number of 'firsts' in our military history. These included:

- Lieutenant Jack Peres a United States Army Air Corps Kittyhawk pilot shot down and killed over Gun Point was the first pilot to die in Australian skies as a result of enemy action.
- A Lewis gunner in 2nd Anti-Aircraft Battery, 'Darky' Hudson, brought down the first enemy aircraft ever destroyed on Australian soil, a Zero fighter (it crashed near HMAS Coonawarra).
- Lieutenant Robert Oestreicher a United States Army Air Corps Kittyhawk pilot shot down two Series 97 (Val) dive bombers. These were the first confirmed aerial victories in the skies over Australia.
- Wing Commander Archie Tindal was killed whilst firing a Lewis gun at the attacking aircraft from a machine gun post at the airfield. He was the first Australian airman to die in combat on Australian soil.

The book also highlights that all was not doom and gloom despite the failure of senior leadership in Darwin and events such as the mass unauthorised departure of air force personnel from the air base to the south with 278 men still missing four days after the raid. In the words of the author 'There had been no shortage of heroism during the attack. Apart from the Army, Navy and Air Force anti-aircraft gunners who stood their ground in the face of overwhelming odds, the rescue workers set a standard of selfless courage of which any nation might be proud.'

The book has been written for a general audience and therefore anybody who has an interest in Australian history will find it an informative and educational read. It is a well researched easy to read book which places the spotlight on a little known part of our military as well as social Australian history. How many died? The consensus is somewhere around 300 - No one will really ever know for sure!

GUNNERS IN BORNEO

Artillery During Confrontation 1962-1966

(by Alan H Smith)
ISBN 9780980393309

Forewords by Major Generals C M I Pearson and J Whitelaw

This book brings together for the first time an account of the most economical war ever fought in modern times from a mainly artillery perspective. Known as the Borneo or Confrontation War, it was fought by the Security Forces, a mix of British, Australian, New Zealand and Malaysian armies, navies and air forces for five years. Lest this war be seen as one of little importance, British strategy successfully stopped it escalating into the sort of conflict then engulfing Vietnam. The war was also a triumph for counter-insurgency and expeditionary warfare waged by the Security Forces against Indonesian terrorists and Regular Forces, to which artillery made a major contribution.

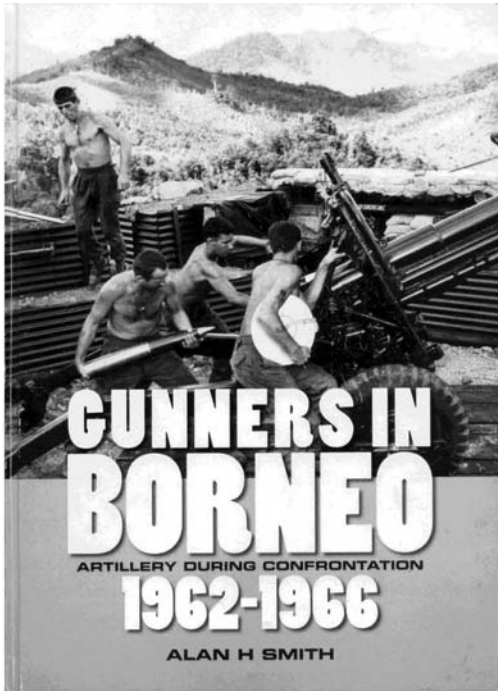
The build up to war is covered briefly and its command under the aegis of Far Eastern Command (FEC) and Far East Land Forces (FARELF) is followed by an outline of Indonesia's military strength, intelligence gathering and the importance of survey/mapping to land operations. Initially the gunners were used as infantry until their utility was spectacularly demonstrated by its use against the Indonesians by an Australian Forward Observer in 1964. Thereafter, gunners from both field/light and locating branches gained and kept the initiative, being enterprising and innovative in the process. In supporting British, Gurkha, Australian, New Zealand and Malaysian forces they adapted doctrine and practice to keep their foe at a military disadvantage. The key role played by 'hearts and minds' initiatives is also given.

No effective land operations would have been possible had it not been for the demonstrable utility of the helicopter - it was the 'maid of all work' from tactical command in crisis situations to the evacuation of compassionate cases or casualties. The role of the air forces of Britain, Australia and Malaysia, particularly air re-supply to bases, together with casualty evacuation, also extended to surveillance of coast of Sarawak and Malaysia by the navies of Britain, Australia and New Zealand. Interdicting Indonesian aerial incursions and coastal raids is covered, as is the key role played by the light aircraft of the Army Aviation Corps for many and varied tasks. These aspects are covered in some detail when related to a significant event involving their personnel. The essential services of infrastructure and water supply, airstrip and road making tasks, supply of war-like stores by the Engineers was backed up by the Royal Corps of Signals, Logistics, Medical and other services. Australian officers and senior NCOs occupied many positions in all arms and services of the Security Forces, and prepared them well for their next deployment to Vietnam.

The history concludes with a discussion of artillery lessons, which was to greatly influence how the Australian military approached their next war in Vietnam, an examination of the campaign from an expeditionary warfare aspect, and from a perspective of a Revolutionary Military Affairs paradigm, which are now being played out in Afghanistan and Iraq.

Hardback; xxiv, Pp 208, contents, maps, illustrated, glossary, foreword, appendices, Security Forces Order of Battle, bibliography, nominal roll and index.

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Looking Forward, Looking Back

Customs and Traditions of the Australian Army

by Christopher Jobson

'Every army marches to the tune of its customs and traditions. The customs and traditions of the Australian Army reflect the often glorious legacies that define the Army of today. They are visible acknowledgements of the history that has shaped the character, the values and the pride of Australia's modern Army and those who serve in its ranks.'

Lieutenant General Peter Leahy,
former Chief of Army

Looking Forward Looking Back - Customs and Traditions of the Australian Army provides a wealth of knowledge on the Australian Army's proud history. These customs and traditions, are dynamic, they evolve and adapt, as does the Army itself. They continue to retain their relevance to the modern Army as they inspire in the digger a strong sense of belonging. The teamwork, pride, discipline and respect of the past inspire the present.

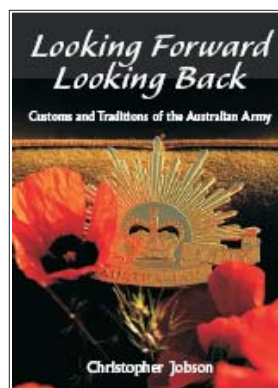
The Australian Army boasts a broad variety of traditions, some of which belong to the Service as a whole, others to a particular corps, regiment or rank. These customs and traditions vary greatly, some are serious and solemn, others humorous and some encompass the rules of social etiquette, manners and style.

Many of the Australian Army's traditions are derived from the battle tactics and fighting dress of old. Some of the drill movements seen on today's parade ground were originally manoeuvres performed by soldiers in battle. Various items of uniform had practical uses for their wearers in combat and some customs retain their original practical use as they did hundreds of years ago.

While the ever-changing modern military environment demands that soldiers continue to look forward, looking back to the customs and traditions of the Army serves as a

constant and reassuring reminder of past victories and the journey so far.

Looking Forward, Looking Back is written by Christopher Jobson, a Vietnam Veteran who discharged after 30 years of professional soldiering. In his final years of service he was posted as the Army's Regimental Sergeant-Major Ceremonial & Protocol. His interesting compilation of the various customs and traditions is complimented by photographs and illustrations. *Looking Forward, Looking Back*, will ensure in part, the military heritage that created the foundation of the fighting force of today is not lost over time.



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Royal Regiment of Australian Artillery Customs and Traditions

by Christopher Jobson

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Premier Regiment Celebrates 60th Birthday

On Monday the 25th May 2009, the 1st Field Regiment, Royal Regiment of Australian Artillery celebrated the anniversary of its 60th birthday. Current serving members of the Regiment commemorated the event with ex-serving members and honoured guests including the Head of Regiment, Brigadier Wayne Goodman AM and Colonel Commandant Northern Region, Royal Australian Artillery, Brigadier Michael Paramor AM. The birthday celebrations included a regimental mixed dining-in night on Friday, and a commemorative church service and luncheon on Monday.

The Regiment has undergone many structural changes in its 60 years. Originally a composite regiment, it became an integrated regiment in the 1980's, a ready-reserve regiment later in the 90's, and back to an integrated regiment which remains its current structure ...

The 1st Field Regiment was raised in Sydney in 1949, as a composite regiment with field, air defence and locating batteries. The regiment was raised as part of the establishment of the Australian Regular Army, and can therefore be directly linked to the origins of the modern Australian Army. Since its inception in Sydney the Regiment has seen itself based in Manly, Wacol, and its current location at Enoggera. It has seen operational service twice as a

gun regiment, during the Vietnam War first in 1966, and then in 1969. In the last 60 years it has also sent sub-units and force elements on operations to Malaya, Borneo, Vietnam, East Timor, Iraq and most recently Afghanistan, where 15 members of 1st Field Regiment are currently serving with the British 40th Regiment 'the Lowland Gunners' Royal Artillery, in the country's Helmand Province.

The Regiment has undergone many structural changes in its 60 years. Originally a composite regiment, it became an integrated regiment in the



Premier Regiment 60th Birthday Celebrations

1980's, a ready-reserve regiment later in the 90's, and back to an integrated regiment which remains its current structure at present. Since 1949 a number of batteries have served under the banner of the 1st Field Regiment, namely A Field Battery, 101st Field Battery, 103rd Field Battery, 104th Field Battery, and its current make-up of 105th Medium Battery, Headquarters Battery and 13th and 41st Field Batteries. The Regiment has utilised various weapon systems throughout its history, from the 25-Pounder in 1949, to the current L119 105mm Light Gun and M198 155mm Towed Howitzer.

The 1st Field Regiment's proud history seems certain to transcend to a prosperous future, with heavy operational commitments in the coming year to Afghanistan and Timor Leste. The next 24 months will also see the implementation of the new M777 Lightweight Towed Howitzer and the re-joining of A Field Battery with the Regiment, both scheduled for late 2010 / early 2011.

The Regiment kicked off its birthday celebrations with the regimental mixed dining-in on the evening of Friday the 22nd May. Held in the warm, comfortable setting that was the Gallipoli Barracks Sergeants' Mess, the dinner gave members of the Regiment's officer and senior non-commissioned officer ranks the chance to interact in a more relaxed, social environment, and allowed them to meet and mingle with their compatriots' partners. Honoured guests at the function included the Colonel Commandant Northern Region, Royal Australian Artillery, Brigadier Michael Paramor AM, his wife Mrs Rosie Paramor, the Regimental Master Gunner, Warrant Officer Class One Phil Matthysen, Commanding Officer of the 1st Field Regiment Lieutenant Colonel Stuart Kenny, and the wives of the two officers currently serving on Operation Herrick in Afghanistan, Mrs Victoria Watson and Mrs Suzanne El Khaligi.

Monday brought with it the actual birthday of the Regiment, which was celebrated with a commemorative church service at the Chapel, and a subsequent luncheon at the Enoggera Gunners' Club. Present at the church service were official guests Head of Regiment Brigadier Wayne Goodman, AM, Brigadier Michael Paramor, AM, and a number of veterans and former serving members of the Regiment. It was a moving service led by Regimental Chaplain Neil McKinlay, with an address from the Commanding Officer Lieutenant Colonel Kenny, the reading of the Honour Roll by Regimental Sergeant Major, Warrant Officer Class One David Lehr, and a number of readings, hymns and prayers read by the Regimental Sergeant Major,

Gunner Luke Laycock, Private Kaye Weston, and Chaplain McKinlay himself.

The luncheon provided nourishment and light refreshment to all, and saw currently serving members and veterans alike enjoying each other's company and the atmosphere of the day. The afternoon culminated with the cutting of the Regiment's birthday cake with the traditional Artillery ceremonial sword, by the most senior and most junior members of the Regiment respectively, Brigadier Goodman and Gunner Brendan Nikolajew.

The 1st Field Regiment would like to thank all honoured guests, veterans, former-serving members and members' partners who celebrated our birthday with us. Your presence and company helped immeasurably in making this anniversary such a memorable event.

Peter Badcoe VC & 103rd Battery

Brigadier J.R. Salmon CBE (Retd)

Assisted by former 103rd Field Battery Officers

Much has been written about Captain Peter Badcoe's infantry service and well-earned award of the Victoria Cross. Some of those writing have made me wonder how well their authors knew Peter; few mention his first class service in the Royal Australian Artillery in the 1950s and early 1960s, especially in 103rd Field Battery (and later command of 107th Field Battery), prior to his transfer to the Royal Australian Infantry in mid-1965. This article is an endeavour to help fill that gap.

*I recall him as a rather diffident
but competent and conscientious
junior subaltern. He was short
and stocky, wore non-trendy
spectacles ...*

I first met Peter Badcock in 1956 at the School of Artillery, North head where I was a senior instructor (Major) and he was doing a junior officers gunnery course. I recall him as a rather diffident but competent and conscientious junior

subaltern. He was short and stocky, wore non-trendy spectacles and, at that time, was the butt of some rather tasteless jokes. Hence the legal change of name to Badcoe.

In January 1961 I assumed command of a rather run-down 103rd Field Battery in 4th Field Regiment under Lieutenant Colonel Jack Studdert, an excellent commanding officer, at Wacol, Queensland. We had six months to get it ready for service in Malaysia. Captain Peter Badcoe was a troop commander (FOO) in a battery of two troops each of four 25 pounders.

Clearly some changes were necessary. One was the battery captain (the battery second-in-command) who looked after the gun area, battery administration and local defence. Although happy with the conscientious Peter Badcoe I had some reservations about his eyesight in controlling fire and proposed him for the position. Jack Studdert pointed out he was junior to his fellow troop commander, a very personable Captain who I doubted would enjoy the detail of the job; as he had no objections Peter became battery captain.

We were determined to beat the British batteries in gunnery, speed of deployment, living in the jungle, sports (except of boxing) and even 'bullshit'.

As I expected Peter undertook the task with gusto performing accurately and methodically all the detailed chores that go with the job as well as the broader ones of deployment and defence of the gun area. Determined not to repeat the disastrous mistakes of the French we developed our own ideas of how to achieve the best defence in a Counter (Mao and Giap's) Revolutionary War conflict. In this we were enthusiastically helped by some excellent officers, including an outstanding gun position officer, and both senior non commissioned officers and junior soldiers with bright ideas. Peter excelled in the siting of field gun and weapon pts, arranging clearing patrols etc.

By late September 1961, 103 was well established as a sub-unit of 26 Field Regiment, Royal Artillery commanded by Lieutenant Colonel Drew Bethell, a Royal Horse Artillery (RHA) gunner, in Camp Terendak, about 12 miles north of Malacca, Malaysia. We were determined to beat the British batteries in gunnery, speed of deployment, living in the jungle, sports (except of boxing) and even 'bullshit'. 103 converted to a six-gun battery which

made local defence easier. We were the first battery to receive the 105 mm L5 Italian pack howitzer which facilitated air mobility. The battery gave gun drill and stripping demonstrations to the other batteries and the infantry units in 28 Infantry Brigade Group commanded by the then Brigadier Frank Hassett. As the Far East strategic reserve the Brigade was subject to numerous regimental and brigade testing and readiness exercises including Charity Angel, Trinity Angel and Trumpeter. Drew Bethell was impressed by 103's gun area defence philosophy and we conducted a deployment demonstration for all officers of the Regiment.

In developing the battery gun position routine, a great deal of emphasis was placed in ensuring local defence for not only the guns but also sometimes beyond what could be considered our area of responsibility. Peter Badcoe was responsible to ensure that all approaches were covered, thus his sound knowledge of infantry minor tactics was invaluable. Liaison with adjacent units was crucial and often proved to be beneficial to these units in tying in the defence of a much greater area with wider coverage than could have been expected. Properly sited, automatic weapons could do the job. Over time it became second nature for the gunners under Peter's tutelage to anticipate where they should dig weapon pits to ensure adequate protection of not only the perimeter but in depth positions as well.

... had several minor 'run-ins' with the UK regimental quartermaster who was reluctant to accept that Australian administrative regulations could differ from those of the Royal Artillery.

In mid 1962 I was about to go on a week's leave with my family to Si-Rusa, a west coast rest centre when the brigade commander at 0300 hours ordered a readiness call-out. As soon as 'Ready' each sub-unit was to assemble on the parade ground for inspection by brigade staff and a check of everything from vehicle inventories, to inoculations, identity discs, pay books and tyre pressures etc. By about 0800 hours, under Peter's command 103rd Field Battery reported 'Ready', the first sub-unit in the brigade to do so much to the surprise of brigade headquarters. I watched the inspection in civvies from the sidelines with more than a little trepidation. But the battery passed faultlessly so my concerns were unjustified. After

Brigadier Hassett congratulated Peter he strolled over and had some warm words to say to me.

Peter Badcoe continued to perform his battery captain duties efficiently but had several minor 'run-ins' with the UK regimental quartermaster who was reluctant to accept that Australian administrative regulations could differ from those of the Royal Artillery.

However while I was away at Si-Rusa Peter had a more serious altercation with the UK quartermaster. This dispute was taken for resolution to the Regimental second-in-command, Major John Lewendon, a fair and flexible officer in my opinion, who nevertheless found in his countryman's favour despite the correctness of Peter's case from the Australian viewpoint. On my return I made representations on Peter's behalf but to no avail.

Yet despite his competence Peter did not fit the image of a British gunner officer. He was too short and to them his glasses and stature made him seem somewhat incongruous. His annual confidential report by the RHA commanding officer rated him as 'below average' and was damning.

Soon thereafter the UK Commander Royal Artillery (CRA) of 17 Ghurkha Division, Brigadier John King-Martin, held his annual test exercise. This consisted of endurance and fire planning activities for battery and troop commanders' parties, gun deployment, realistic range practices and field firing exercises. Being alert to the key points of the CRA's orders I, inter alia, passed on to Peter the paramount need for the battery to be fully dug-in and camouflaged by first light.

Early next morning I received a radio order from the Brigade Major Royal Artillery (BMRA) that the CRA required me to leave my post at 'battalion headquarters' and report to my gun area immediately. Very concerned I arrived at the battery to be met by Brigadier King-Martin with his hand out. 'Congratulations', he said 'your battery would do credit to a demonstration battery at Larkhill' (UK School of Artillery); personally I hoped it would rate better! Walking me around 103 Battery area with Peter, he pointed out the salient features of the good work that the battery captain, his officers and

non commissioned officers had achieved. There was not a gun or weapon pit to be seen. We were frequently challenged and all positions were immaculate. By contrast the two British batteries had hardly scraped the dirt and each gun and weapon pit was patently obvious. To the delight of the tired soldiers of 103 and the chagrin of the UK batteries the latter were marched around the Australian gun area and told, 'That is how it should be done'.

Yet despite his competence Peter did not fit the image of a British gunner officer. He was too short and to them his glasses and stature made him seem somewhat incongruous. His annual confidential report by the RHA commanding officer rated him as 'below average' and was damning. Peter declined to initial it and brought it to me. I considered it quite unjust and argued Peter's case with Lieutenant Colonel Bethell. He said he was comparing him with his RA captains and declined to alter a word citing Peter's differences with the UK quartermaster as an example of his alleged lack of tact and 'inability to get on with people'. In Peter's eyes the report would hinder his future in the Royal Australian Artillery.

This and his success in infantry type tactics in the gun area as well as his enthusiasm for small arms were significant factors, but not the only ones, in Peter Badcoe's decision to transfer from the Gunners to the Royal Australian Infantry Corps.

Long Tan: The FO's Story

*Major M. D. (Morrie) Stanley MBE (Retd)
161st Field Battery RNZA*

Provided by Lieutenant Colonel John Macpherson (Retd)

Until March 1966 1st Battalion Royal Australian Regiment, 105th Field Battery Royal Australian Artillery and my unit 161st Field Battery Royal New Zealand Artillery were attached to the US 173rd Airborne Brigade at Bien Hoa. In May / June 1966 the 5th and 6th Battalion Royal Australian Regiment arrived in the theatre to establish the 1st Australian Task Force Area at Nui Dat in Phouc Tuy Province.

As 161st Field Battery was to be in direct support of 6th Battalion Royal Australian Regiment (6 RAR) I was assigned as forward observer (FO) to Delta Company (D Coy) from the time 6RAR assembled on the beach at Vung Tau. The sojourn on the beach ended when we occupied the base at Nui Dat. From then on my two radio operators and I, the three Kiwi gunners, shared the heat and mud with D Coy. We had D Coy laundry numbers and were involved in all of their activities. By August 1966 our party was virtually part of the establishment.

The circumstances preceding the Battle of Long Tan, the course of it, and the outcome, are now fairly well known. Indeed, many of us know more about the battle now than we did at the time. This, then, is my recollection of experiences as D Coy's FO at Long Tan.

The initial contact began with the chatter of small arms fire.

I can recall on the morning of the 18th August, getting ready to go on a patrol with D Coy. We assembled near the perimeter of the Task Force and walked out into the tactical area. The mission was to relieve a much smaller patrol from B Coy which had been out for some time searching for a Viet Cong (VC) mortar base plate position from which an attack had been launched on the Task Force base. The movement to the rendezvous with the B Coy patrol was uneventful and simply done, as was the hand over of information between the two patrols.

When we arrived at the rendezvous I spoke with the FO who was with the B Coy patrol, Captain Pat Murphy, another New Zealander. He briefed me on the situation as he understood it, he explained where we were, about the track system and the understanding of the next line of movement that might be followed and then we had a very comfortable lunch.

After that Major Harry Smith, the Company Commander, decided on the method of advance with his platoons. It was my role to stay with the Company Commander all the time, no matter where he went I was to stay with him, so that I could provide any advice or support that he wanted. I needed to know how he was manoeuvring his platoons. I also needed to know our location, what direction the platoons were and how far away they were from me.

The initial contact began with the chatter of small arms fire. It was quite exciting and was regarded as something to be expected, although not something

which D Coy had often come across. At that time Company Headquarters was not directly involved in the contact at the front from where the sound of rifle and machine gun fire was coming. I was keen and enthusiastic to apply gun fire into the area where I knew that it would be useful. However, at that time we received VC mortar fire from the south generally and into the area where Company Headquarters was waiting. Harry Smith decided that we would move away from that place very quickly. He did not need to emphasise any orders on that occasion; we simply moved. It was obvious to us that the enemy was not observing that fire because it became ineffective. After that, Harry Smith appreciated that 11 Platoon, which was in contact, was getting into trouble. I could hear the voices on the company command net and knew that Harry Smith was trying to have 10 Platoon assist 11 Platoon. That was not totally successful.

There came a time when neither Harry Smith nor I could perform our role while we were moving and, if we could not perform our functions, then the platoons would be in greater trouble. So it was decided to stop and establish some firm ground with one of the platoons. It was in that place where the wounded and members of the other platoons were gathered to establish a company defended area. My most intense recollections are of that final position.

... my response was instinctive and not based on firm information about the size or location of the enemy force.

Soon after initial contact, Harry Smith and I agreed on the grid reference of our location and he requested fire support. Battery Fire Missions were fired at some distance from the known position of 11 Platoon. Later, I upgraded the fire to Regimental Fire Missions when the situation had deteriorated and there were obviously large numbers of VC confronting us. At the time my response was instinctive and not based on firm information about the size or location of the enemy force.

The rain started late in the day as usual, but soon developed into a tremendous storm. This deluge and the fact that our final position was on a slight reverse slope were two factors in our favour. Rain and the intense gunfire caused this area to be shrouded in smoke, steam and fog.

This helped me because my judgement of distance was assisted by the observation (or lack of it) of flash against this screen and the enemy were silhouetted, as were our own troops.

I realised how important it was that my communications remained effective and that the guns were able to maintain the constant and accurate fire that they were called upon to produce.

I needed the comfort of knowing that my Battery Commander (Harry Honnor), an experienced gunner, was on the end of a radio, and could provide constant support for me.

I needed the comfort of knowing that my Battery Commander (Harry Honnor), an experienced gunner, was on the end of a radio, and could provide constant support for me. On one occasion I actually reported on that net that the situation was too confused to use the guns and it was Harry who suggested I engage another grid reference and adjust the fire from that position. That stabilised me at the time.

Fortunately my radio communications on the artillery net remained effective. Although we could not hear all messages, all our transmissions were heard at Nui Dat. My operator, Willie Walker, was able to keep the set operational under the most trying conditions until the battery collapsed at the end of the battle. He seemed to be concerned only with the radio and I with my map.

I actually screamed a number of times over the radio net the word 'stop'.

I wondered whether the fire which was called down was an over-violent reaction to the situation because there was no way of knowing the total size of the enemy force at the time. I had seen several groups 20 to 50 strong moving about between the rubber trees. I have since found out and now believe that the fire was justified. 108 men of D Coy had engaged about 1500 VC.

I have been asked how I was able to direct the fire. It was essential that I knew my location, and that I knew the direction of the platoons and roughly how far away they were. I tried to have my map oriented with the north point on the map facing north, then looked towards the noise of contact and small arm

fire. That was the only way I had at that time of determining the grid reference at which to open fire. It was difficult to tell the distance the leading troops were from me, so the safety factor was that fire was opened some considerable distance, even up to 1,000 metres, away from where we were. Adjustments were made to move the gun fire closer. On one occasion I was told on the company net that it was too close. I actually screamed a number of times over the radio net the word 'stop'. This was because I could not hear many of the acknowledgements from the gun area when transmitting fire orders. Normally the artillery observers will give fire orders and will receive the acknowledgement. When I screamed 'stop', the guns had to stop and they did. Another occasion when the guns had to 'stop' and they were stopped for me, was when a helicopter was despatched to resupply small arms ammunition into the company area.

Everyone in the company was running short of small arms ammunition.

Sergeant Bob Buick took command of 11 Platoon after his platoon commander was killed. When he requested artillery fire on his own position I spoke with him directly on the company radio net. He had apparently assessed that with about 10 men left out of 28, they could not survive more than another 10-15 minutes. Even though he insisted, I declined. He advised me later that the fall on shot continued to be 50-100 metres from him and amongst the VC.

Everyone in the company was running short of small arms ammunition. I had some for the Armalite and Willie had some, but we did not have a particular use for it. We were too busy. Jack Kirby, a very fine Company Sergeant-Major, came to me and said, 'Excuse me, Sir, have you any spare ammunition?' I could not understand why he should act in such a polite way. I told him to help himself from my pack and he did that. He said, 'I am leaving you one magazine'. He also left Willie Walker with one.

In the later stages of the battle when we were all in this base of ours with the wounded, members of the platoons had joined us, and there were far more people around in the Company Headquarters area. But it was at that time there were two incidents, one which impressed, and one which worried me. Most of the men were young, of the

age 20 or so. One man I heard saying 'steady, aim, fire'. I think that was an example of what makes a soldier tick. After thorough training and even under stress he knew what was required and that is how he did it. It was just at that time, in fact just after Jack Kirby had collected ammunition, that I was very concerned because the VC had started attacking from a different direction. I ordered the removal on one battery from the Regimental Fire Mission and applied it in that area. Jack Kirby saw it as well and we were very worried that we were going to be done. It did not deter Jack, he just went around collecting ammunition and distributing it.

Most of the men were young, of the age 20 or so. One man I heard saying 'steady, aim, fire'. I think that was an example of what makes a soldier tick. After thorough training and even under stress he knew what was required and that is how he did it.

The arrival of the relief force seemed to signal the end of the battle and, later Harry Honnor suggested that harassing fire in depth continue throughout the night.

When the battlefield was cleared the next morning an eerie silence pervaded a scene of utmost devastation. The men may have been mentally and physically exhausted after their ordeal but they continued their duties at Long Tan until it was time to return to the Task Force base at Nui Dat.

A Digger from D Coy later recalled:

'I got to the stage where we all thought that there was no way we could get out of there. The only help we seemed to get was from the artillery. Every time the enemy troops got close to us it seemed that a salvo of artillery would land amongst them, just in time. We didn't have all that much ammunition anyway, and we were using our fire properly and not wasting it. When they did build up and move in quickly it was always the artillery that kept them out of our way.'

I am proud to have been with D Coy 6RAR on that day.

Aboriginal Soldier & Elder

Gunner Lavanda (Ben) Blakeney OAM

Colonel Bruce Stark (Retd)

Lavanda Blakeney, or Ben the name he used and was most widely known by, was born at Dulwich Hill, Sydney on 9th March 1937, the seventh child of Aborigines John and Ethel and one of twelve children. His service in the Australian Regular Army commenced in April 1958 and was preceded by two years both as a national serviceman and a member of the Citizen Military Forces. After initial recruit training at Kapooka and Corps training at the School of Artillery, he was posted as a Gunner/Driver to 101st Field Battery then preparing to replace A Field Battery in Malaya. He quickly made his mark and endeared himself to many with his somewhat direct and forthright manner but, it should be added, not always to the liking of those of more senior rank. Good fortune smiled however and he left with the Battery for Malaya in September 1959.

His popularity amongst his fellow Gunners can best be illustrated by an incident involving his attendance at a picture theatre in Butterworth, Malaya. He was denied entry to the dress circle of the theatre because he was not 'white'. The manager wanted him to sit downstairs with the locals. Members of the Battery accompanying him were having none of this saying, 'He's one of us', and threatening blue murder to the theatre staff. Thankfully peace was restored by the intervention of the Battery Orderly Sergeant and Ben sat with his mates in the dress circle.

He was denied entry to the dress circle of the theatre because he was not 'white'.

Ben was a member of the line laying party for the Battery. He was a good driver, physically strong, hard working and a valued member of the team. Towards the end of the first year he, together with other members of the Battery, were temporarily employed as infantry both in patrolling and ambushing. This occurred at a time when the Emergency in Malaya was coming to an end and the requirement for artillery in its traditional fire

support role was greatly reduced. It was on one such patrol that Ben provided a demonstration of his Aboriginal heritage. He was a member of a patrol led by Lieutenant Graeme Burgess that had harboured for the night near a jungle track south east of Kuala Kangsar. Intelligence had been received that up to four Communist terrorists (CTS) had been seen in the area. On the following morning footprints made by hockey boots, a form of footwear favoured by the CT, were noted on the track. The tracker team from 1st Battalion Royal Australian Regiment were called in to follow up the sightings which they proceeded to do with alacrity. Sometime later the tracker team returned having followed the footprints back to where the patrol had harboured for the night. It soon became obvious that these had been made by a member of the patrol. Further investigation found that Ben, who was unable to sleep, had gone on a walkabout in the dark wearing his hockey boots which were only allowed when in harbour for the night. Ben completed his two years of service in Malaya and returned with the Battery to join 4th Field Regiment at Wacol in October 1961. He continued to serve with the Regiment until discharged at the completion of his engagement in April 1964.

... one such patrol that Ben provided a demonstration of his Aboriginal heritage.

His acting career began soon after in 1966, as an extra drinking at the bar in the film 'They're a Weird Mob'. His brother recalls him appearing in the television series 'Homicide and 'Skippy' and also as a tracker in the 1970 film 'Ned Kelly' with Mick Jagger. The highlight of this phase of his life was undoubtedly the portrayal of the spirit of the famous Aborigine Bennelong on top of the Sydney Opera House at its opening in 1973. He was asked to perform this role by Sir Asher Joel who was chairman of the committee to organise the official opening of the Opera House by Her Majesty Queen Elizabeth II. On his web site Ben later wrote about the day the nation looked up to me when I said 'I am Bennelong' and afterwards meeting the Queen and being 'invited for cups of tea and cucumber sandwiches or whatever'.

In 1977 he joined the Commonwealth Police, the first Aborigine to do so. Later in 1979, the year the Australian Federal Police was formed he was selected for the United Nations peacekeeping force in Cyprus. He performed this role for twelve months and is remembered as a dedicated and

effective officer, being awarded the UN Medal and the Overseas Service Police Medal. His police career ended in 1984 when he joined the Australian Protective Service in which he served until retirement in 1992.

In 1977 he joined the Commonwealth Police, the first Aborigine to do so.

Ben was very proud of his indigenous Australian heritage and he loved and respected his culture and ancestors. Through arrangements with the ACT Schools Authority he visited many schools to give talks to children on Aboriginal culture and to teach them to throw boomerangs which he made himself. His pupils were not restricted to children and on one occasion included a Governor General.

He was an active member of the Canberra and Queanbeyan community and was generous in support of many organizations including the TPI Association and the RSL. His work in support of the community was recognised in 1994 with the award of a Medal of the Order of Australia. Ben Blakeney never forgot his Gunner beginnings and was a regular participant in RAA Association functions in the ACT including Anzac Day marches. His rough diamond appeal demanded attention and his sense of humour was always there when telling a good story. He died at his Queanbeyan home on 28th December 2003. He was farewelled by a packed and overflowing chapel at the Norwood Park Crematorium in Canberra on 2nd January 2004. Those in attendance included local politicians, the Commissioner of the Australian Federal Police, serving and retired Army and Police colleagues as well as representatives from the many organizations that were part of Ben's life and providing eloquent testimony to the high regard in which he was held. He never married and is survived by five of his twelve siblings.

Ben was very proud of his indigenous Australian heritage and he loved and respected his culture and ancestors.

Sources: Arthur Burke, Editor 'Tiger Rag'; Canberra Times 1, 3 and 6 January 2004; Daily Telegraph 1 January 2004; Telecons with: Eddie Blakeney; Senior Sergeant Barry Boyce (Retd) AFP; Colonel Graeme Burgess (Retd); Major Len Cooper (Retd) and Warrant Officer Two David Troedel (Retd).

Japanese Diary Return

*Mr Kevin Browning OAM
Chairman RAAHC*

On 5th August 2009 Major General Tim Ford AO (Retd), Representative Colonel Commandant Royal Australian Artillery and Patron of the Royal Australian Artillery Historical Company (RAAHC) represented the Australian Army Artillery Museum at a function conducted at the Manly Council Chambers for the handover of the diary of Naval Lance Corporal Tsuzuku Maruyama for return to his family. The diary was amongst a number of artefacts presented to the artillery collection by Lieutenant Chisholm Cutts in 1993.

At the beginning of January 1943 the last Japanese resistance was eliminated in the immediate Buna area of New Guinea. On 4th January 1st Australian Mountain Battery AIF (A Battery) was ordered to access their sector and assemble all heavy calibre weapons at the gun position. During this operation Lieutenant Chisholm Cutts found the diary and other artefacts in a destroyed bunker.

... the diary was passed to North Fort with the need to have it fully translated and the desire to have it returned to the family.

Many years later Lieutenant Cutts handed them to Mrs M.P. O'Hare, widow of Brigadier M.P. O'Hare who was battery commander during the battery's operational service. These were subsequently passed through Major General John Whitelaw to North Fort. He retained the diary so that it could be translated, a task given to Colonel Reg Gardner who had been Defence Attaché in Tokyo. Colonel Gardner provided information on the content of the diary and recommended consideration be given to returning it to the author's family in Japan. Lieutenant Cutts agreed to this proposal. In 2006 the diary was passed to North Fort with the need to have it fully translated and the desire to have it returned to the family.

Destiny then took a hand. Manly Council has a number of Sister City relationships. One is with Odawara City in Japan. Each year a number of students and officials from Tokimeki International

School and representatives of Odawara City visit Manly and include a tour of our Museum. During the visit in 2006 a number of Japanese artefacts held in our archives were displayed for the visit. Included was the Diary and the visitors identified the author and offered to provide a full translation. They were also informed of the donors wish for it to be returned to the author's family. A short time later they contacted us to say they had located the family.

Miss Sumiyo Mimori, member of the Manly Sister Cities Committee, assisted by Michie Akahane - senior lecturer in Japanese at the Japan Foundation Sydney, commenced the translation and provided a typed transcript of the diary for the Museum. The offer to return the diary to the family was then formalized and arrangements commenced through the Manly Sister City Committee. Arrangements were made to conduct the handover during the visit this year. Unfortunately the visit by the students was cancelled due to concerns over the Swine flu but it was agreed the handover should still take place.



Councillor Alan Le Surf Chairman, Manly Sister Cities Committee, Councillor Jean Hay, AM Mayor of Manly, Mr Noriaki Ozaki, Chairperson, Tokimeki International School Committee, Odawara City, Japan and Major General Tim Ford, AO (Retd) Representative Colonel Commandant with the diary and a portrait of Naval Lance Corporal Tsuzuku Maruyama at the handover ceremony held in Manly Council Chambers on 5th August 2009 (photograph John O'Brien)

The diary revealed Naval Lance Corporal Tsuzuku Maruyama (a rank he received following his death) had been called up following the start of the war and had been trained as a signaller in the Yasuda Squadron, Second Division, Yokosuka Marine Corps. He was 39 at the time and had six children. It contained information on officials in his home town and also notes on his training. It appears he

was embarked as part of the invasion force for Midway but was eventually landed at Rabaul. His unit landed at Buna on 17th September 1942. Air activity over Buna is reported on many occasions and there are numerous personal reports such as 'dreamt of home'. It is also of interest to note he received a letter from his wife on 6th October 1942, it had been written on 17th May. From 1st to 8th November he was suffering from malaria. There are also numerous reports of artillery firing on his area. The last entry is dated 20th December 1942.

There are also numerous reports of artillery firing on his area. The last entry is dated 20th December 1942.

The handover ceremony organised by the Manly Sister Cities Committee in consultation with the Royal Australian Artillery Historical Company took place at the Council Chambers. In front of the Japanese Consul General Mr Nobuhito Hobo; Councillor Alan Le Surf - Chairman, and members of Manly Sister Cities Committee; Representatives from Odawara City; Mr Noriaki Ozaki, Chairperson, Tokimeki International School Committee, Odawara City; and other dignitaries and representatives from local and Japanese media; Major General Tim Ford handed the diary to the Mayor of Manly, Jean Hay AM. The Mayor then handed it to Mr Noriaki Ozaki representing the family of Naval Lance Corporal Tsuzuku Maruyama.

Mr Ozaki expressed his gratitude to all involved and was especially grateful for the generosity in returning the diary. A letter sent by Naval Lance Corporal Tsuzuku Maruyama's grandson, Yoshihito Maruyama has been passed to the Museum:

'I believe that the fact that my grandfather, Tsuzuku Maruyama's article is coming home is the result of Mr Ozaki and Odawara City's efforts to have cultural exchanges with Manly for many years. I express my gratitude for and pay my respects to that.

I also appreciate on behalf of all my family and relatives for your kindness that you are bringing the diary to Azumino, Nagano. Tsuzuku's eldest son, my father, Yoshizo Maruyama who passed away 6 years ago, would have expressed his appreciation and been touched by this event as beyond description if he was still alive. And he would also have talked a lot while remembering about the time he had to accept the fact as the eldest son to support his 7 family members when he was only 15 years old.'

Attending the function as representatives of the Museum were John Saltwell, Laurie Hindmarsh, Jeff Evans and Kevin Browning. John was the registrar for our collection and instrumental in making the Japanese visitors aware of the diary and having it interpreted. Laurie is a long time member and guide at the Museum and served during World War II.

The handover is a significant event for the Museum as it highlighted our involvement in the community. It was heartening to hear the appreciations expressed by all those attending, not only for the generosity in returning the diary but for the work conducted at the Museum. A copy of the diary and its translation are held at the Museum along with a photo of Naval Lance Corporal Tsuzuku Maruyama.

The handover is a significant event for the Museum as it highlighted our involvement in the community.

Postscript

Since submitting the article on the return of the Diary an email was received from Japan and included the following which completes the story:

Mr Ozaki, Mr Iiyama and Mr Iida (both from Odawara Council) and I (Sumiyo Mimori) were welcomed by the Maruyama family and Azumino Council staff at the Toyoshina Community Centre where Mr Ozaki returned the diary to Mr Maruyama's grandson, Mr Yoshihito Maruyama, and also we had a press conference. There were about six newspaper companies and three television companies at the conference. The speeches at the conference and other places were from those below:

Mr Yoshihito Maruyama (grandson): It is indescribable, and we are grateful that the diary was kept with good care and many people were kindly involved in the effort to return it home.

Mrs Matsumi Akahiro (the third daughter): (While she was holding the diary tightly in her arms), I wanted to hold my father when the diary came home.

Mrs Chieko Itahana (the second daughter): I said to my father, "Wasn't it great, dad!" to his gravestone. This fortune made me believe that my family's everyday behaviour has been all right. I feel that the war was finally ended.

Personnel

Appointments

The Head of Regiment is pleased to advise the Chief of Army's recent release of senior 'Gunner' officer appointments for 2010 (wef 18th January 2010):

- Brigadier P.D. McLachlan - COMD 7 BDE
- Colonel G.C. Bilton, CSC - promoted Brigadier, DG Dev & Plans -A, AHQ
- Colonel P.C. Gates, CSM - promoted Brigadier, DG Educ & Trg Dev, DSG
- Colonel S. (Don) Roach, AM - promoted Brigadier, COMD LWDC
- Warrant Officer Class One M.J. Sullivan - 2nd/10th Field Regiment
- Warrant Officer Class One D.T. McGarry - 7th Field Regiment
- Warrant Officer Class One B. Franklin - Career Manager Artillery, Soldier Career Management Agency

Unit Command Appointments

The Head of Regiment wishes to advise the Chief of Army's recent release of Royal Australian Artillery command appointments for 2010 (wef 18th January 2010):

- Lieutenant Colonel M.R. Kennedy - 1st Field Regiment
- Lieutenant Colonel C.P.H. Weller - 4th Field Regiment
- Lieutenant Colonel N.J. Loynes - 20th Surveillance & Target Acquisition Regiment
- Lieutenant Colonel A.W. Garrad - 1st Ground Liaison Group
- Warrant Officer Class One P.A. Matthysen - Regimental Master Gunner
- Warrant Officer Class One D.R. Lehr - 1st Field Regiment
- Warrant Officer Class One J. Fabri - 20th Surveillance & Target Acquisition Regiment
- Warrant Officer Class One M.I. Johnson - 1st Recruit Training Battalion

Regimental Sergeant Major Appointments

The Head of Regiment wishes to advise the Chief of Army's recent release of Royal Australian Artillery Regimental Sergeant Major appointments for 2010 (wef 18th January 2010):

- Warrant Officer Class One R.J. Thompson, OAM - 7th Brigade
- Warrant Officer Class One S.R. Driscoll - School of Artillery
- Warrant Officer Class One A.M. Hortle - 16th Air Defence Regiment

The Chief of Army has announced that the following Regimental Sergeant Major's will remain for their third year in their current appointments:

Additionally, the Chief of Army has selected the following Regimental Sergeant Major's to attend the single service component of 2010 Australian Command and Staff Course:

- Warrant Officer Class One G.M. Potter (currently Regimental Sergeant Major 16th Air Defence Regiment)

The Head of Regiment congratulates, on behalf of all ranks of the Royal Regiment of Australian Artillery, the officers and warrant officers on their appointments for 2010.

DOCM-A

Major James Kerr, Career Advisor Artillery

By now most of you would be aware of your employment in 2010 and my hope is that your new position will benefit both you and the RAA. Of course in some cases it can be hard to match the

service need with personal desires, and I plan to sort these issues before the end of the year. I will work with you, the chain of command and units to achieve this.

In accordance with the DOCM-A's message to 'take command of your own career', you need to be armed with the information to do this. A major part of my role after posting orders are struck is to prepare your annual career guidance (ACG). This is an individually tailored statement covering off on:

- ACOTC completion requirements.
- Posting **options** for the next five years.
- Some discussion about career milestones, pathways and general competitiveness.
- Information about any upcoming Personnel Advisory Committees (PAC).
- Information about any PAR issues.

Please Note: ACGs are available on your PMKeyS Self Service (normally updated in December, sometimes in January). Lieutenants do not receive ACGs.

Remember, your completion of the ACOTC is your responsibility. I provide guidance on the ACG, you seek release through your chain of command and then you nominate for the relevant course through your unit channels on PMKeyS. (For those posted at Non-Army Group locations without PMKeyS access, please contact me via email to be nominated for courses.) Some courses are over-subscribed so do not expect immediate enrolment.

This time of year is also reporting time. I cannot over-emphasize the importance of the PAR to the processes carried out here at DOCM-A (especially the PAC). Whether you are writing or receiving a report, it is vital that the maximum care is taken with report construction, and its subsequent arrival in Canberra. Make an effort to ensure reports are signed correctly in every area, and then sent to DOCM-A in 'e-copy' and in its original hard-copy form. The email address is docmpar@defence.gov.au. The July DOCM Dispatch has some great information on the construct of PARs, though of course the correct reference for this is DI(G) PERS 10-8.

Remember to use the DOCM-A website and to read the dispatches sent out on a monthly basis. Whilst I am more than happy to catch up with my portfolio on the phone or in person, it must be said that many of the questions I field could be answered by the Dispatch or the website. Please advise me on the email address below if you are not receiving the Dispatch.

I look forward to catching up with many of you in the remaining months of the year, during the RAA Conference in October, or next year at the Career Interviews. POC Major James Kerr, (02) 6265 5790, james.kerr@defence.gov.au.

SCMA

*Captain Rob Ryan &
Warrant Officer Class One Bob Thompson OAM*

Introduction

2009 has proven to be a hectic year and one that has seen the RAA commence some significant changes that will reshape the way we operate in the coming years. The end of the year is fast approaching and I wish to take a few moments in order to extend a warm thanks to those that have supported SCMA's efforts and re-affirm some key matters in relation to personnel management. However, as a prelude, let us examine the year in brief from a career management perspective.

Initially, the Personnel Advisory Committee (PAC) cleared over 32 RAA soldiers for promotion across all ranks and streams. Subsequently over 150 posting orders were issued to personnel across the RAA. Career management interviews were completed in all major localities, with all members demonstrating a positive attitude and a good understanding of their trade knowledge. There are currently significant numbers of RAA soldiers deployed in all theatres of operations, and likewise posted to high profile appointments both within Australia and overseas. Thus in review, the year although extremely busy has been challenging yet rewarding.

Notable Appointments

I would like to congratulate all soldiers who were successful in clearing the PAC for promotion for 2010. The standard was very competitive at every rank and trade. In particular, Warrant Officer Class One Bob Thompson is congratulated on his appointment as Regimental Sergeant Major 7th Brigade.

Career Management Cycle

Although not yet confirmed please use the following time line as a guide for next years activities:

- Personnel Advisory Committee:
 - RSM PAC – February-March 2010 (Regimental WO1 across Army)
 - WO1 PAC – March 2010 (for target rank Regimental WO1)
 - WO2 PAC – NB April 2010 (for target rank of WO2)
 - SGT PAC – NB April 2010 (for target rank of SGT)
- PAC Notification - Four weeks after relevant PAC sitting
- Postings - NLT 15 Jul 10
- Unit Visits/interviews - Jul/Aug/Sep/Oct 10

Please Note. Unit visits to SCMA should be planned not before 10th April so that greater guidance can be given after the PAC results are known.

Key Issues

2010 promises to be equally as challenging for the RAA. The following issues deserve special mention:

- *Three Year Tenures.* SCMA has now been directed to issue three tenures for all postings. Originally it was directed that only commanding officer and regimental sergeant major appointments would be subject to this length of posting, however this has now extended down to the other ranks.
 - *Career Courses.* To grow Army, develop our people and enhance our work force, soldiers must attend career courses. Units need to engage SCMA early IOT finalise and shape the course attendance of each of their members. This will also allow the soldier to have a clear understanding of the impact of operations and personal circumstances on their career progression. PAR's are the key instrument used in selecting a soldier to attend a career course, if the member is deemed suitable for promotion and there are no other adverse comments that should delay the members attendance, the soldier will be panelled.
 - *'Empowering the Soldier'.* SCMA has tasked you, the soldier, to take ownership of your career. The responsibility for effective career management lies as much with you, the individual, as the career manager, and you must take all opportunities and support mechanisms to assist in achieving your goals. Soldiers can do this by submitting an Electronic Preferences and Restrictions (EPAR) on PMKeys Self Service.
- Instructions for its use are maintained on the SCMA web site.
- *20 STA Regiment.* Over the past 12 months STA has received numerous trade transfers both from within and outside of the RAA. Of note we have transferred members with rank, specifically at the sergeant level. This has now ceased as we have reached our target numbers at the sergeant level. All applications will be considered for transfer at the gunner rank.
 - *TC-A.* Chief of Army (CA) is clear in his intent to ensure that TC-A units (including ARTC and SOArty) are manned to the best possible level. Although the Corps is deficient in BDR/SGT rank, it does not lessen our responsibilities in providing necessary support. As per RAA ECSOs, all personnel from bombardier to warrant officer class two should expect several TC-A/non corps postings throughout their career. Be realistic in your expectations. Such postings raise your profile when striving for promotion.
 - *Unrestricted Service.* Once again, we must reinforce the requirement for unrestricted service. Last year's message remains extant: Our 1 Div ARA units are in Australia's north, and TC-A/non-corps appointments are generally south. As a bombardier onwards, you will be required to uplift in order to meet the needs of the Service as outlined above. If you argue that this is not possible due to a range of factors (the normal ones include home ownership, wife's employment, family network, undesired locality), you are providing restricted service, and your personal needs no longer meet those of Army. At times, this creates unfavourable friction and will inevitably end with separation.

In summary I would first of all like to again thank Warrant Officer Class One Paul Washford for his efforts this year whilst standing in for Warrant Officer Class One Bob Thompson, his guidance along with his vast experience within the career management world have been greatly appreciated. Finally I would like to take this opportunity to thank Warrant Officer Class One Thompson for his contribution and tireless efforts here at SCMA for the past three years. I wish him all the best in his future endeavours and I am sure that 7th Brigade will be in safe hands under the watchful eye of the RAA leadership. Both Warrant Officer Class One Thompson and I wish you and your families a very happy festive season and a safe return for 2010.

ARTILLERY

Big guns drive modern army

PLANNED NEW SELF-PROPELLED ARTILLERY WILL PROVIDE MORE ACCURATE, LONGER RANGE CAPABILITIES, WRITES GREGOR FERGUSON

The army has won an important battle in its campaign to modernise its fire support and command and control capabilities. The defence white paper announced that the army would replace its 105mm and 155mm towed field guns with a new force of towed and for the first time, self-propelled 155mm guns. This represents a victory over the hearts and minds of sceptics who doubt the cost-effectiveness of self-propelled guns, which are considerably more expensive than traditional towed field guns.

According to Raytheon Australia's business development director Michael Ward, several factors have come together to make self-propelled guns a cost-effective proposition.

Precision munitions such as Raytheon's GPS-guided Excalibur 155mm shell give extraordinary accuracy, even beyond 55km. Gunners normally expect 50 per cent of rounds to fall within 200m to 300m of a target, even at much shorter ranges; when used for the first time in Iraq in 2007, Excalibur rounds were reportedly landing within 5m of targets. Greater accuracy means you need fewer rounds and fewer guns.

The length of the barrels of the 155mm self-propelled guns being offered by Raytheon and its German rival, KMW, is 52 times their calibre. These are much heavier than their 39-calibre predecessors but bestow much greater range, so they can cover more of the surrounding area more economically than older guns.

There are other efficiency dividends, too, Ward says; a self-propelled gun typically has a four-person crew, compared with the 10 or 11 tending a towed artillery piece.

The crew is protected from enemy fire inside an armoured hull, and it doesn't matter nowadays whether the enemy is a Taliban fighter with a rocket-propelled grenade or a conventional foe deploying artillery and strike aircraft: there are some corners of the battlefield where gunners need protection.

Higher rates of fire mean fewer guns needed to deliver the same effect as older weapons.

Self-propelled guns also can keep up with nimble, armoured forces and be brought into action quickly, even when they're on the move. Within 30 seconds of getting a fire order they can pull over, load and fire.

The contenders to supply two batteries of self-propelled guns are Raytheon Australia, teamed with Samsung Techwin to offer the latter's AS-9 'Aussie Thunder', and KMW, teamed with BAE Systems Australia to offer the German army's PzH2000.

Australian troops have seen the PzH2000 in action in Afghanistan, where the Dutch army has two. These are sited in separate camps near Tarin Kowt with overlapping arcs of fire to provide a seamless umbrella of fire support.

The AS-9 is derived from the South Korean army's K-9, which also is in mass production for the Turkish army. Raytheon is providing the added value in the form of increased armour protection, the Excalibur round, which is already in the Australian armoury, and the Advanced Field Artillery Tactical Data System's artillery fire control the army has mandated.

The company also is upgrading the army's seven TPQ-36 artillery locating radars, which are another Raytheon product.

Modern artillery is a key building block in Australia's emerging hardened and networked army. Imagine a rocket or mortar attack; the right sensor and communications network enables an artillery locating radar to spot the incoming projectiles, calculate their source, transmit fire control data automatically to a self-propelled gun and initiate return fire before they are hit. This isn't a pipedream; the Dutch are doing it already in Afghanistan, KMW says.

Australia's new self-propelled guns will carry the communications and fire-control equipment to automate the process; towed guns can do the same things, but more slowly, with fire control and communications gear in separate vehicles and needing more manual processing. However, the towed gun favoured by the Australian Army has one key advantage. It is light enough to be slung below a Chinook helicopter.

The US Army's M777 towed howitzer, built by BAE Systems in the US, uses titanium components and a shorter 39-calibre barrel to bring its weight below 4.5 tonnes. The Excalibur round also bestows a range of about 40km, means a traditional four-gun battery can cover nearly double the area previously possible and an even greater area than the old 105mm Hamel Gun.

The Week-End Australian 'Special Report Defence'
23-24 May, 2009

Capability & Training

Future Artillery Seminar

*Lieutenant Colonel A.W. Garrad
Force Development Group - Land Warfare Development Centre*

Introduction

'Future Artillery 2009' was a three day seminar conducted in the United Kingdom over the period 23rd to 25th March 2009. The seminar profiled international developments in artillery systems, provided various national army perspectives on OS, future capability requirements and operational feedback. This conference is one of the most comprehensive international forums of this type and this year included a diverse range of key note speakers from both industry and from across the international gunner community including Brigadier General R. Ridge Assistant Commandant US Army Field Artillery School.

The purpose for attending the seminar was to better inform Force Development Group core business processes (capability gap analysis, future force structure and capability design) on current and developing international military technologies and capabilities associated with OS and STA.

Purpose

The intent of this submission is to highlight just some of the more interesting and relevant issues among the many items presented over the three day period of the seminar.

... artillery in support of current operations in Afghanistan continues to build upon previous successes and has reinforced the valued role of the artillery system within the combined arms team.

General Observations

The employment of allied artillery in support of current operations in Afghanistan continues to build upon previous successes and has reinforced the valued role of the artillery system within the combined arms team. The accuracy and consistency of modern artillery platforms as well as precision guided munitions have proven their ability to neutralise area and point targets in very close proximity to own troops with less collateral damage effects than air delivered munitions.

Analysis of operational experience has proven artillery doctrine and training to be generally sound within the coalition and has reconfirmed the necessity of undertaking all possible measures to reduce CofM through accurate survey, met, MV management, ammunition non-standards and charge temperature.

A common theme emerging from national presentations highlighted the issue of affordability relating to future artillery capabilities. The proliferation of complex systems is not sustainable particularly in terms of training and personnel. Prioritising future capabilities and in some cases making pragmatic decisions over which capabilities must be retained at the expense of others seems to be a common challenge confronting artillery modernisation internationally.

... a strategic rethink on the role, purpose and operating costs of the British Army have resulted in the cancellation of the 155mm Light howitzer ...

Royal Artillery

Current operational requirements and a strategic rethink on the role, purpose and operating costs of the British Army have resulted in the cancellation of the 155 mm Light howitzer and Lightweight Mobile Artillery Weapon System Rocket LIMAWS(R) projects. This has resulted in the commensurate LOT extension until 2030 for 105 mm Light Gun, AS90 and M270. The Future Indirect Fires Systems FIFS project will look to eventually replace these major artillery platforms. Interim developments will focus on improvements to ammunition, C2 and TA tools.

RA lessons drawn from current operations:

- Enduring requirement for area suppression¹,
- Requirement to deliver effects with low collateral damage,
- Requirement to engage precision moving targets,
- Enduring requirement for CRAM /C-IDF.

RA Future Requirements and Plans:

- Better matching weapon effects to likely target types without proliferating the number of systems;
- Achieving appropriate force balance between the mix of heavy, medium and light artillery systems has led to the realisation of the need for a medium weight solution with high strategic mobility;
- An identified gap within the current OS system is the requirement for long range precision fires which would have been satisfied by the now cancelled LIMAWS(R) project;
- Requirement for light weight dismounted target acquisition systems that can achieve target mensuration of 10 m CEP or better.
- Indirect Fire Precision Attack (IFPA) is a system of systems approach to providing a layered suite of precision systems that can provide flexibility and scalable effects in support of close combat. The inventory will include: 155 mm and 105 mm PGM and CCF², Fire Shadow Loitering munitions, SADARM and GMLRS.

RA Themes and Trends:

- Fire Support Teams (FSTs) are proving invaluable on current operations and will continue to develop as the nucleus for joint tactical effects coordination.
- Affordability of future capabilities is essential as the proliferation of systems is not sustainable. Prioritising future capabilities and optimising lines of development to find greater efficiencies is key to RA force modernisation.
- There is recognised high cost benefit in focussing investment in munitions development and OS system enablers such as TA.

¹ Suppression data is currently based upon WWII findings and is out of date. RA is undertaking a detailed study better quantify effects and possibly reduce logistic burden.

² CCF - Course Corrected Fuse fitted to conventional HE artillery projectiles will provide CEP <50 m for precise engagement of area targets without the requirement for adjusting rounds to be fired.

Weapon Locating. The RA is currently refining their requirements for future weapon locating capabilities by having undertaken a leasing arrangement for Cobra and Mamba weapon locating systems. These systems have been employed on operations in both Iraq and Afghanistan and have provided valuable operational feedback to both Saab and Euro-Art to assist in further developing system capabilities. The RA will in time acquire a single fleet of multi-mission radars that can provide both air space/air defence management and artillery weapon locating. A portable LCMRS³ is proving highly successful in providing sense and warn for deployed force elements and will form an essential part of a layered counter fires system.

*Accounting for all possible CofM in deriving solutions to the gunnery problem
was a lost art which has had to be re-learnt ...*

UAV. The RA currently employs two variants: Desert Hawk MUAV and Hermes 450 TUAV. The later is being utilised as the airframe for the Watchkeeper project which will see increased sensor capability and integration of a more accurate laser target fixation capability (similar to the lightning pod).

Meteorological. Met is considered to be a critical enabler on current operations. The RA currently rely upon a gridded met 3D forecast moving to 4D with more regular updates. The RA is currently re-evaluating the future of their met sections.

Canadian Artillery

Current Operations: An analysis of contemporary operations has proved that artillery training and doctrine is sound. Current artillery elements deployed are a six gun M777 bty operating as two dispersed troops as well as SUAV, HALO⁴ and LCMRS troops. Lessons learnt include:

- Wherever possible within the small scales deployed it is essential to build in a level of flexibility to allow FE to readily adapt to changing environments and mission requirements. This is achieved through the mix of skill sets and ensuring manning redundancy as well as the means to overcome equipment single point of failure.
- Operational planning must assume and acknowledge a high level of acceptable risk to enable operations to be effectively supported eg. Road movement and dispersed troop deployment.
- Target discrimination is difficult in complex terrain and must seek to achieve the required level of certainty before engagement with OS.
- Heavy reliance upon junior leaders to plug gaps and carry out mission intent.
- C2 and CSS is particularly challenging in non-contiguous and dispersed AOs. Long range communications are being achieved with iridium satellite phones and PRC117F. Arty CSS is being undertaken without the use of a doctrinal echelon and often relies upon adhoc arrangements to deliver limited resupply by air given dispersed AOs and the risks of overland resupply. Deployed guns must therefore be self sufficient for most requirements less Class 1 and 3.
- Accurate crest clearance analysis is required for 6400mil shooting. Additionally reverse slope effect on the choice of LA/HA trajectories must consider implications for airspace management.
- Simultaneous engagement of multiple targets with a single gun is not uncommon.
- Accounting for all possible CofM in deriving solutions to the gunnery problem was a lost art which has had to be re-learnt and is now once again becoming habitual practice for Canadian Gunners. The importance of achieving a common survey point using datum point procedures (ie registration, LRP and WP) as well as MV management and charge temperature cannot be understated.
- There are significant equipment limitations in dismounting FOO/FACs from their LAV3 OPV.

³ LCMRS - Lightweight Counter Mortar Radar System

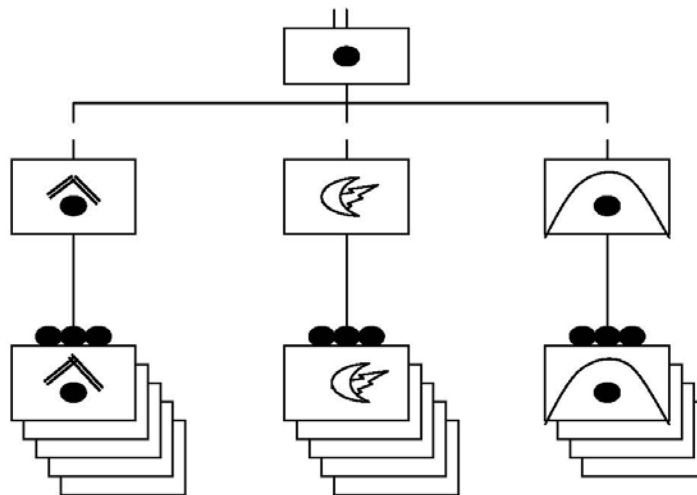
⁴ HALO - Hostile Artillery Locating System - Portable acoustic sensor

- Within the STA capability brick there is more equipment than personnel to operate eg. Three types of UAV, HALO and LCMRS.
- More realistic and comprehensive training within the COE is needed to better integrate the functions of FSCC, TACP, ACE and the STACC.
- All FE need to be proficient in all arms call for fire.
- The key role played by BCs and FOOs within the BG and CTs is acknowledged.

Future Developments: The current tempo of sustained operations combined with the limitations of available manpower and resourcing has forced the Canadian Artillery to accept the need for change and to rethink their development priorities. In doing so they have determined what the essential 'must do' tasks are and what capabilities they can no longer sustain. Underpinning some contentious force structure decisions is the philosophy that a capability which is not a force multiplier is not a sustainable capability. The following design lessons have been drawn from the necessities of supporting the current War in shaping the future artillery force structure:

- More capability equals more resources drawn from a limited pool of available manpower and training;
- Improved technology equals greater dispersion with fewer systems;
- Self supporting C2 structures are needed down to the lowest level;
- Individual capability bricks require increased operating autonomy and self sufficiency;
- 'Rule of More' - more precision, more responsive more effects;
- Three block war here to stay;
- Sustained force generation of specialist trades and skills is proving challenging for a small force particularly the provision of mounted FOO/FACs which require a minimum of 200 training days;
- Gunners need to be cross disciplined to provide greater manning flexibility;
- Use of Reserve Forces as individual augmentees has been successful within small teams filling up to 27% of operational mancap. Given the training days available, equipment complexity and resource limitations the Reserve force tasks and training is appropriate.

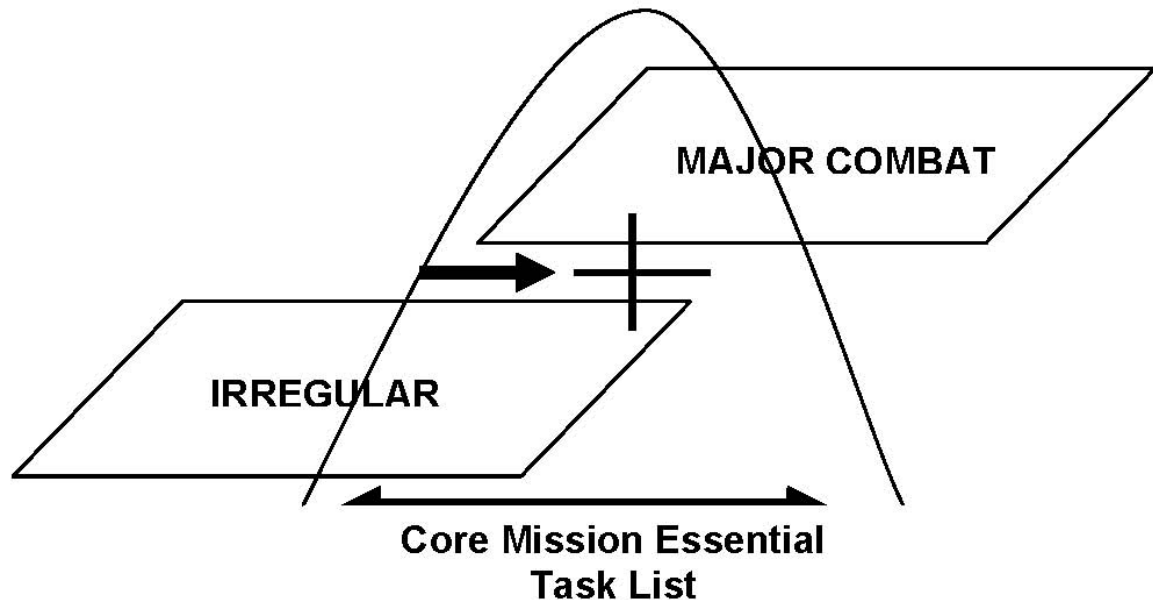
GBAD/STA. An area of rationalisation in force structure has been the merging of Air Defence and STA capabilities within the Canadian Artillery. This proposed organisation is structured to deliver Counter Fires (CBF) and GBAMD capability bricks which utilise a common multi-use radar (Giraffe AMB) but which cannot perform both tasks simultaneously using a single radar. The total number of capability bricks is therefore limited to the five radar systems within the Radar Bty. This means either five counter fire rocket troops (equipped with GMLRS) or 4 GBAD troops and one rocket troop or any combination of these. The unit is not intended to deploy as a unit and can not deploy all its capabilities simultaneously.



Proposed Canadian Counter Fires/GBAMD Unit

US Field Artillery

The US Fd Arty is currently reassessing the force balance of its capabilities in preparing for the future spectrum of operations. Resourcing the entire army for major combat operations is not feasible. The focus of the field artillery in preparing forces is however swinging away from supporting the current fight (irregular war) toward major combat operations.



The 'Fires Management Strategy' for the US Fd Arty is focussing on the following key objectives:

- developing leadership ,
- addressing capability deficiencies,
- achieving greater interoperability (joint/coalition), and
- sustaining the force to meet force generation requirements.

A new emphasis has been placed upon developing non-lethal fires capabilities such that the mission of the Field Artillery has been amended as follows: 'The Fd Arty is to integrate and deliver lethal and non-lethal fires to enable joint and manoeuvre arm commanders to dominate the operating environment across the spectrum of operations.' The US Field Artillery is thus making a significant investment in acquiring and embedding EW capabilities.

... focus of the field artillery in preparing forces is however swinging away from supporting the current fight (irregular war) toward major combat operations.

The US Fd Arty Campaign Plan. The Campaign Plan consists of four lines of effort summarised as follows:

Grow Leaders: This Line of effort is focussing on preparing the artillery's leadership to be 'masters of their speciality' and re-establishing the prominence of artillery commanders and staff at all levels as key integrators of joint fires and effects (lethal and non-lethal). Aspirationally this will see the establishment of a joint fires university on a similar model to that of the JCAS centre of excellence already established. Access to realistic training facilities which can be readily tailored to any planned operating environment will be key to improved capability. This will be achieved through greater reliance upon the use of integrated live, virtual simulation and constructive gaming.

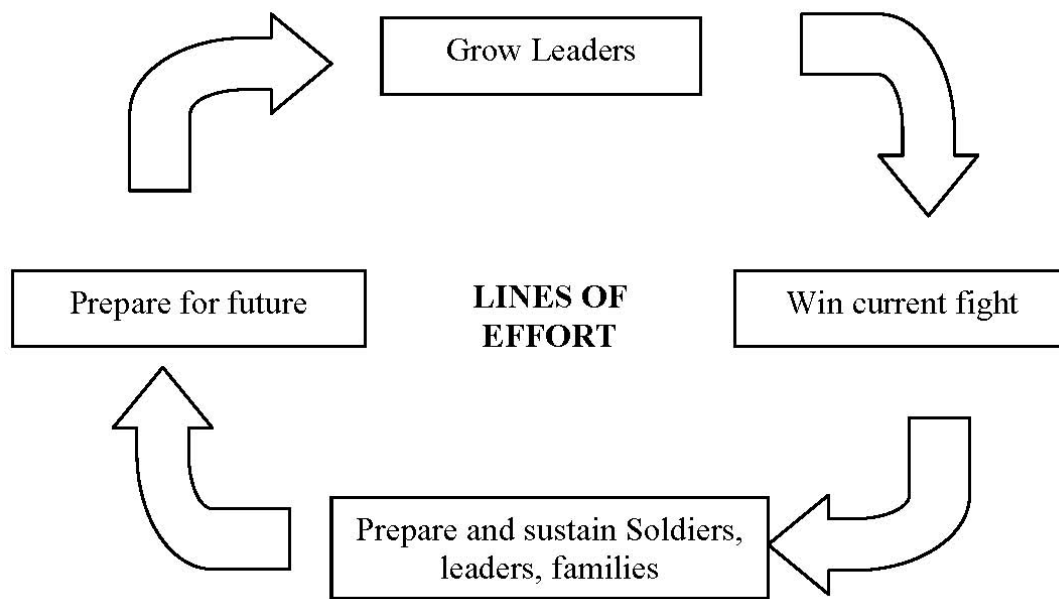
Win the Current Fight. The inception of a Fires Knowledge Network and Fires Warfighter Forums using internet and intranet are tools being developed to enhance professional knowledge and lessons capture from current operations.

Airspace management in the coordination of joint fires is an identified area of particular weakness on current operations and is being addressed by a review of the arty training continuum.

Prepare and Sustain Personnel and Families. Efforts clearly focussed on developing a range of personnel management issues.

Prepare for the Future. Areas of interest to the US Fd Arty in transforming for the future include:

- Leveraging of existing technology,
- Affordable precision munition systems,
- Improved airspace management capabilities,
- Force protection measures - counter indirect fire and CRAM,
- Greater utility through a common suite of multi purpose missile launchers,
- Integrated and distributed sensors,
- Effects management - proportionality,
- Mass precision fires.



US Field Artillery Campaign Plan

USMC Artillery

The last btys of the Marine Corps' eleven Cannon Battalions are being equipped with M777 A2 (digitised). M777 platform autonomy is allowing greater deployment options particularly in support of dispersed operations. Main equipment problems relate to power supply when deployed in FOBs away from gun tractor. Requirement to recharge the platform batteries is being resolved by use of a portable generator set. There are also some issues relating to the durability of electronic cables. Other miscellaneous issues include:

- Marines are maintaining a light expeditionary capability with dual equipped btys using 120mm Mor.
- Employment of Excalibur and PGK has significant advantage for light scale forces WRT logistic support.
- Currently the Marines have no dedicated OPV. All FSTs operate dismounted and consequently power supply is the limiting factor. Strike link system works well in static OP.

Danish Artillery Operations in Afghanistan

The Danish Forces, with a regular Army component of 10,000 personnel, have been providing a sustained troop deployment on a scale similar to the ADF in Oruzgan. The Danes form part of the UK Task Force in

Helmand Province and have been undertaking major combat operations alongside their British counterparts. Danish fire support elements deployed consist of the following:

- BG level Joint Fires Cell,
- FOO/FACs in support of a two company BG supported by a tank troop (five Leopard MBTs),
- UAS Troop,
- WLR detachment, and
- 60 mm Mor Platoon.

Fire support issues arising from their operational experience include:

- The identified need for a separate airspace management cell within BG HQ to free up FACs to concentrate on terminal effects.
- The conduct of danger close missions is common practice.
- The identified need for counter fires SOPs to defeat the threat posed by adversary indirect fires.

Developments in Artillery Rocket Systems

There are several distinct trends shaping the current research and development in artillery rocket systems. Specifically these include efforts to develop a multi-purpose launch system which will have common utility for launching a suite of rocket types. As proof of concept a Surface Launched Advanced Medium Range Air to Air Missile (SL-AMRAAM) was recently test fired from a HIMARS⁵ launcher. The US Army Integration Office is focussed on achieving Army wide commonality of missile launchers, C2 and sensors within the 2015-23 timeframe. This will have significant logistic and training advantages over maintaining and operating a suite of specialised systems. Similarly the Non Line of Sight Launch System (NLOS-LS)⁶, currently in the final stages of FCS field testing, is being evaluated for it's potential to incorporate several rocket types including PAM⁷, Hellfire AT, ISR UAVs and AD rockets within the one launcher. Other missile R&D efforts are focussed on multi sensor seeker heads which utilise GPS guidance to the target area and then switch to either Millimetric Wave to acquire the target or have the option to be laser guided onto target. This will provide greater flexibility in attacking various target types either moving or static.

Counter Indirect Fires (CIDF)

Defence Against Mortar Attack (DAMA) is a NATO sponsored working group to integrate different national solutions for the delivery of CIDF. This work will culminate in a LFX entitled Exercise BELCOAST 09 over the period 5 -14 Oct 09. The aim of the exercise will be to demonstrate the capacity to integrate various NATO country CIDF capabilities. The exercise area will involve a mock FOB containing C2, sensors, warning devices and CRAM response systems. This area will be mirrored offshore into which mortar fire will be directed to simulate an attack on the FOB. Various NATO radars will be used to determine POO, POI, cue CRAM responders and initiate warnings to the FOB. Information gained will be used to develop NATO TTPs and inform national approaches in the development of CRAM capabilities.

Conclusion

Future Artillery 2009 provided an ideal opportunity to gain valuable insights into the range of artillery lessons derived from contemporary operations, capability developments occurring within NATO and ABCA armies as well as defence industry. The issues captured in this report represent only a small portion of that discussed over the duration of the seminar but have been highlighted by the author for their relevance to force modernisation and for the general interest to the wider RAA community. Regular attendance at such seminars is part of the work undertaken by staff within the Force Development Group a posting to which and can provide a thoroughly interesting and rewarding staff appointment for gunner officers.

5 HIMARS - High Mobility Artillery Rocket System.

6 Commonly referred to as rockets-in-a-box

7 PAM - Precision Attack Munition

Mojave Viper

Warrant Officer Class Two M.F. Henneberry

Australian Instructor Support Team (AIST) is a deployment the Australian Army has supported since mid 2003. Teams primarily consist of full-time and part-time members from Royal Australian Infantry. Exercise Mojave Viper is an exercise that assesses USMC battalions and their ability to conduct combined arms warfare.

On 27th February 2009, AIST 21 departed from Sydney Airport for Los Angeles for the commencement of our rotation to the United States. The deployment itself was a four month embedding of Australian Army instructors into the Tactical Training Exercise Control Group (TTECG) based in Twenty Nine Palms, California. Marines posted to TTECG are known as 'Coyotes'. The Australians are known as 'Dingos'. My C/S through out the exercise was 'Dingo 4'.

The team consisted of:

- Captain J. Costello RAA, Contingent OC, 16th Air Defence Regiment;
- Warrant Officer Class One Dave Galloway RAR, Contingent 2IC, WONCO Wing, Sth QLD;
- Warrant Officer Class One Dave Lucas RAR, 7 BDE Training Team'
- Warrant Officer Class Two Mark Henneberry RAA, 23 Fd Regt;
- Warrant Officer Class Two Dusty Miller RAR, CTC Nth QLD; and
- Sergeant Pete Alexander RAR, Jungle Training Wing, CTC Nth QLD.

TTECG is the key coordinator and controller for CAX (Combined Arms Exercise). They plan and safely orchestrate the exercises, requiring the force to exercise and integrate all capabilities resident in the Marine Air Ground Task Force (MAGTF) in accordance with existing Marine Corps warfighting doctrine to ensure exercises simultaneously meet Marine Corps and unit-specific training objectives. The TTECG 'Coyotes and Dingos' provide preliminary classroom introduction, control the exercise scenario in the field and portray the enemy actions to the exercise force in the scenario development. They also provide the essential safety backdrop, allowing exercise force units to employ the full spectrum of combat capabilities within the

Marine Corps in the most permissive of live-fire environments without any artificial control measures. These artificial control measures are as we know it Artillery Safety, Direct Fire Safety (TK, 12.7 mm, MK 19, MAG 58 and other small arms) and Air Safety (Rotor and Fixed wing). These measures, although maintained throughout, do not impede the exercise force from achieving its objectives.

Mojave Viper is the only exercise that allows the USMC to conduct the full spectrum of MAGTF, combined arms activity prior to deploying to Afghanistan. All battalions are required to conduct the exercise prior to deploying despite the fact that there is no pass/fail. The 'Coyotes and Dingos' are there primarily to provide feedback as to how the battalion had performed in order to give the battalion commander of the exercise force a black and white picture of the battalion's performance. This allows the commander to go away and rectify issues prior to deployment which in most if not all cases, is one month after visiting Twenty Nine Palms.

I always felt that I should call after action assessments as I saw it, at the risk of possibly seeming overly harsh to USMC personnel.

Initially each member of the team was allocated to either team one, commanded by Major Himmel or team two, commanded by Major Kylie as trainers and assessors. Once the offensive support cell (22 Shop), commanded by Major Ian Glover, an extremely good operator, found out I was a Gunner, he approached the TTECG commander Colonel Rich Symcox about me joining his team to provide support. I was asked if I would be willing to do that and without hesitation, I agreed. Due to the lack of numbers in TTECG, a deal was made between Major Kylie and Major Glover which meant that not only was I now covering down on platoon and company commanders during live fire attacks, I was also now covering down on FIST and FSCCs of the exercise force.

The Battalions were coming into TTECG one at a time which allowed us some flexibility in time and allowed the team some time to re-set. While I was there a decision was made to ramp up the exercise and allow two battalions to exercise at the same time. At that point the name of the exercise changed from 'Mojave Viper' to 'Enhanced Mojave Viper' and enhanced it was. The teams were

re-named Team East and Team West. This also meant that the TTECG 'Coyotes and Dingos' were now split between the two. The same training and assessment support was required which now meant that as a part of the 22 Shop, my time assisting in assessing platoon and company commanders was limited to the Mission Rehearsal Exercise (MRX) at the end of the exercise. The need now was even more so because instead of four to five personnel assessing one battalion, there were now only two of us.

The exercise itself was organised so that prior to the LFX, a CPX was conducted which allowed us to assess the company commander orders and his manoeuvre plan. It gave us time to look at the way they formulated their plan and all organisations within the FSCC were fair game. This included playing out the attack, assessing the 'Schedule of Fires' (Fireplan), Attack Guidance Matrix, use of STA elements (UAVs, Scout Snipers, OPs), Air Officer (BALO equivalent) and involvement with implementation of Aerial Fire Support. It also meant checking that the Fire Support Co-ordinator (FSC) is able to adjust times, produce a workable fire support solution to the commander's intent, check the geometry of fires from indirect assets, and air and ground attack platforms during the attacking phases. I always felt that I should call after action assessments as I saw it, at the risk of possibly seeming overly harsh to USMC personnel.



My first assessment during the CPX was funny as I stood up, fronted the command team and unleashed. It was warranted as there were plenty of things that were not being adhered to, which caused the manoeuvre force to stop and start frequently. This made an exercise that should have only taken seven to eight hours to complete, stretch out to around ten. To top it off, I hadn't eaten all day. Those of you that know me will appreciate the pain.

One thing that became apparent was that no matter what you suggest, they are an organisation of 240,000 men and women on the ground. We are pushing 28,000 in total. They have been fighting this war for the best part of the last decade. We have not. So in order to work in with their way of understanding gunnery and producing workable plans, I tried to make them think outside the box. FSC are not generally Gunners. They are Infantry men who have conducted the FSC course. Unlike us, they are far more integrated as a Corps than we are as an Army. Every Marine supports the forward Rifleman no matter what. So what I really liked was the Air Support did what they were told. Which was interesting because flying out of Miramar in San Diego were a couple of Australian Air Force Pilots, who will remain nameless, that did a fantastic job during the urban fires exercise.

*They have been fighting this war
for the best part of the last
decade. We have not.*

This in turn made me think about how we conduct our training in Australia and the restrictions we place on ourselves through Artillery Safety. The USMC does enforce safety regulations but nowhere near the regulations we force upon ourselves. Marines rely upon a central safety officer who sits in an overwatch position and conducts a quick check on missions sent. Prior to any fires, the safety officer conducts a live check mission with the gun line. This check sees one round fired into the impact area validating that the round is safe and falls within acceptable tolerances of the target. There are no safety officers on the gunline and there is no safety ack in the CP. Sure mistakes are fired and they are verified by the safety officer so that the checks are swift and rectified and the exercise proceeds. Reports are no different so I was not lost on the jargon, but was on the RATEL, which was ordinary and like a chat line. For us to conduct the same type of training to the same level, would force us to make some changes which I believe can be done as it would provide us with some excellent training opportunities.

As the exercise progressed, so did the actual conduct of live fire. Unlike our stage one through six which can take sometime to complete, the USMC do it all in one month. This is due to their operational tempo. I believe that we would be the same if required. The first live fire was the Fire Support Co-ordination Exercise (FSCEX). This proved the ability to conduct the combined fires

without infantry involvement. It allowed a company commander to play out his plan and to exercise the fire support command and control by the FSCC. It gave me the opportunity to provide my guidance and thoughts in the form of an AAR which the OPSO, FSC, Air O and S2 were always a part of. The relationship between the exercise force and I was always good. Apart from the novelty of an Australian being in the FSCC, we are seen as knowledgeable, trustworthy and reliable. More often than not, Marines of all ranks would ask you for your opinion and always seek assistance. I never felt that I was an outsider. The next LFX for the exercise force was the Clear Hold Build Exercises (CHB). These exercises involved infantry mounted in Amtraks with indirect, direct and aerial fire support. One thing I found interesting was the lack of understanding of artillery effects on targets. For example a medium battery fired rate two onto a SA-15 for approximately ten minutes. The Corridor OIC Practice, would then call the target suppressed which in reality should have been destroyed or neutralised. I questioned the OIC as to why Marines do not fully appreciate effects, his answer was so that the exercise force would use combined arms by attacking with air once suppressed. I did counter by saying that the SA-15 did not impede manoeuvre and tanks should have destroyed the target thus quantifying the need for combined arms. That is as far as we went.

... USMC employ 1500 to 2000 role players. None during the exercise speak any English and act as they would in a generic village anywhere in the Middle East.

So after all the LFXs were completed, the 'Dingos' then went out to the Combat Out Posts (COPS) and assessed the marine platoons in their ability to conduct operations alone. This included the platoons conducting VCP and platoon defensive operations. As there is a very high turn over within the USMC, I found that 60 - 80% of troops coming through Mojave Viper had never deployed. So rather than telling them later by AAR at the end of their rotation through the COPS, we conducted training. Everything from the conduct of a squad patrol through to the conduct of VCP operations. Most platoon commanders had only just come out of the Navel Academy or Officer Candidate School (OCS) at Quantico then onto the platoon leaders class. Without getting into too much depth, the class is two six week modules then a six month

course later. It's a big ask for them to then deploy on operations in the manner the USA is currently conducting. We felt it was a huge burden on a young officer and at every stage we gave as much assistance as possible, from building orders to conducting recons and tying in his defensive security. Basic Marine skills are very close to Australian Army basic skills. Range cards, patrolling techniques, map reading, detainee handling etc were all practiced. A point to note, on Mojave Viper the USMC employ 1500 to 2000 role players. None during the exercise speak any English and act as they would in a generic village anywhere in the Middle East. They work hard, live in rough conditions and get around \$200 US per day.



The AISTs are doing a very important job at TTECG. Our ability to help the USMC has not gone unnoticed by any of the Marines I dealt with. Some have come into contact with Australians in the past and have always said good things about us, though I am not sure if it was just them being polite. From the Gunner perspective I think we provide a very important role for them. Our understanding from the gunline and hill to FSCC / JOSCC gives us skills that most Marines do not have. Our training in the Military Appreciation Process 'MAP' allows us to provide that little bit extra by showing Marines how to best employ assets and make decisions based on information at hand that best supports the mission. At the end of the day, it is an important exercise that warrants greater presence of Gunners within the AIST. Although a bit trying at times, it was possibly the most rewarding experience I have had. The USMC get a lot more out of you than you them, as Marine gunners are working hard to get the Corp itself back to the MAGTF after years of VCP, KPS type activities in Iraq and artillery skills degradation because of it.

DMO

The Lightweight Howitzer - M777A2

*Captain Paul Stack
APM Lightweight Howitzer LAND17*

Introduction

The Land 17 (Artillery Replacement) Project seeks to enhance the ADF's firepower through the replacement of the current fleet of 105 mm and 155 mm howitzers with the 155 mm Lightweight Howitzer - M777A2.

The lightweight howitzer element of Land 17 will provide a digitally advanced delivery system that is capable of being deployed by air (C-130, C-17 & CH-47) and land in support of ground forces.

M777A2 Overview

The M777A2 is the world's first artillery system to incorporate large scale use of titanium alloy; weighing less than 4500 kilograms, it is the world's lightest 155 mm howitzer, resulting in a field gun that is half the weight of more conventional 155 mm towed gun system.



M777A2 incorporates significant advances in digitisation through the inclusion of the digital fire control system (DFCS). DFCS provides each howitzer with onboard navigation, digital communications to the command post, and an automated weapon-pointing capability. The DFCS provides each gun with much greater autonomy than traditional towed howitzers which enables significantly reduced emplacement times and speed and efficiency in mission execution.

Conclusion

The introduction into service of the M777A2 Lightweight Howitzer will significantly enhance the ADF's and the RAA's delivery capabilities. Not only will it provide a highly capable towed

weapons platform to replace the existing fleets, but will also introduce a level of digitisation and automation not yet experienced by the RAA.

M777A2 / M198 Comparative Technical Data		
Description	M777A2	M198
Calibre	155mm 39 Cal	155mm 39 Cal
Weight	4463 kg	7050 kg
Height	8.95 m (firing, max elev) 2.65 m (towing)	2.89 m (towing)
Width	3.72 m (firing) 2.59 m (towing)	2.36 m (centre to centre) 2.79 m (towing)
Length	10.21 m (firing) 9.51 m (towing)	11.02 m (firing) 12.34 m (towing)
Detachment Size	Expected to be 7 personnel	10 personnel
Emplacement Time	2:10 mins	6:35 mins

M777A2 / M198 Comparative Technical Data		
Description	M777A2	M198
Displacement Time	2:23 mins	10:40 mins
Maximum Range	30 000 m	30 000 m
Elevating Range	-43 mils to 1275 mils	-75 mils to 1275 mils
Traverse Range	400 mils L/R before a speed shift is required. Speed shift range 6400 mils.	400 mils L/R before a speed shift is required. Speed shift range 6400 mils.
Rate of Fire	4 rounds per min (maximum) 2 rounds per min (sustained)	4 rounds per min (maximum) 2 rounds per min (sustained)
Recoil Mechanism	Hydro-pneumatic, constant, dependant (1420 mm max recoil)	Hydro-pneumatic, variable, dependant
Fire Control	DFCS primary with reversionary optical sights. (+/- 0.5 mil)	Will be fitted with the Portable Excalibur Fire Control System (PEFCS) as an interim digital capability up grade.
Maximum Towing Speeds	74 kph (roads) 24 kph (cross country)	75 Kph (roads) 10 Kph (Cross country)

Advanced Field Artillery Tactical Data System (AFATDS)

*Major M.R Hartas
SPM Battle Management System - Fires LAND 17*

Introduction

Joint Project 2085 Phase 1 Bravo (JP 2085 Ph 1B) will provide a limited introduction into service of the Advanced Field Artillery Tactical Data System (AFATDS) in order to support of Army's introduction into service of XM982 Excalibur, Artillery Precision Guided Munitions (APGM) and Smart 155 Artillery Delivered High Precision Munitions (ADHPM) capabilities.

In mid 2011, Land 17 (Artillery Replacement) Project will introduce into service a digitised, automated and networked Battle Management System - Fires, Command & Control system (BMS-F (C2)). In June 2008 the Minister for Defence agreed to the pre-selection of the AFATDS as Army's solution for the BMS-F (C2).

Initially the RAA will see the AFATDS software hosted on the Version Two UNIX Laptops (V2) hardware (Figure 1-1), however, in the longer term it is envisaged that the AFATDS software will be hosted on the GETAC M230 rugged notebook (Figure 1-2).



Figure 1-1 V2 UNIX



Figure 1-2 GETAC M230

AFATDS Overview

When introduced into service by Land 17, AFATDS will fill the BMS-F (C2) role for the land battle space. The BMS-F (C2) aids in managing operational and tactical fires in support of the Manoeuvre Arms Commander's (MAC) plan as well as providing a means of technical control of the fires platforms.

BMS-F (C2) is a fully automated fire support tool, which minimises the sensor-to-shooter timelines and accuracies normally associated with legacy systems, equipment and procedures. It provides fully automated support to fires planning, coordination and control of but not limited to mortars, howitzers, close air support and naval surface fires.

AFATDS will be fielded by the RAA as the BMS-F (C2) solution for all fires echelons from Brigade Joint-Fires and Effects Coordination Centres (BDE JFECC) to Troop Command Post (TCP).

The system prioritises targets and pairs them with the optimal weapons platform for a given mission profile. It provides commander's with an accurate, timely and a coordinated approach to fires prosecution.

Although AFATDS is highly automated in process, it does allow human intervention at every phase of processing and should there be a requirement to intervene, options and recommendations are presented to the commander by AFATDS, based on the rule sets established initially by the commander in 'commanders' guidance'. The Commander defined rule sets exist for target processing, weapon pairing, information distribution (different to mission processing) and communications redundancy to name but a few.

Unit command / support relationships are also flexible in nature to support the fires environment and to deal with real times changes in accordance with the evolving land battle space. The system functionality allows fires planners and commanders great agility in establishing and maintaining the sensor-to-shooter link while ensuring mission coordination needs are considered.

AFATDS and the Joint Mapping Tool Kit (JMTK) software displays, potentially from a multitude of sources, friendly and enemy Situational Awareness (SA) graphics (map symbol) and information. From each respective AFATDS terminal in the fire network, the commander can filter the displayed information at his terminal through the use of overlays. This use of overlays allows local fires commander's to monitor and remain situationally aware of the dynamic 'current' situation, missions processing and target updates from his focused perspective without being flooded with information overload.

Some of the fire support areas supported by AFATDS are as follows:

- Fire Support Planning. Fire support planning provides integration of howitzers, mortars, Naval Surface Fires Ships (NSFS) and both fixed and rotary winged air support into the commander's scheme of manoeuvre. AFATDS can aid in the creation of a Fire Support Annex to the commander's Operation Order (OPORD) or implement and execute the direction provided in an OPORD.
- Fire Execution. Fires execution is guided by the fire support plan. It performs sensor employment, target processing, attack system analysis and technical fire direction for howitzer units.
- Fire Direction Operations. Fire direction operations include the collection and maintenance of weapon platform, fire unit and ammunition status data required for day to day Artillery operations. This information is readily available and visible at all Artillery echelons and can either be displayed in detailed or aggregate form and would be utilised to inform all echelons in support of planning and execution requirements.

Conclusion

In conclusion, AFATDS is an agile fire support tool. It provides fires commanders' with selectable, detailed guidance's derived from the staff planning process, that provide AFATDS with the necessary 'RULES' to be utilised during the analysis and processing of fire missions. It is important however to realise that the computer possesses no intelligence and only implements the guidance provided. This allows decisions, arrived at in planning to be executed rapidly during the hectic periods of activity that characterise modern manoeuvre operations.

Version 2 UNIX Laptop Hardware Specifications

AFATDS is hosted at the on the V2 UNIX Laptop. The V2 UNIX Laptop hardware capabilities are depicted in Table 1-1.

Table 1-1: V2 UNIX Laptop	
Component	Capability
System Type	SPARCbook 6500 650mhz processor
Operating System	Solaris
Video Display	15.1" 1400x1050 SXGA+ Active Matrix LCD
CDROM	CD-RW/DVD-ROM: 8x DVD/24x Read, 8x Write CDROM
Power	90-264V AC auto -sensing/switching to DC DC in compliance with DC MILSTD 1275B
Parallel Conector	Allows connection of parallel printer.
LAN1 connector	Allows RG-45 LAN connection associated with AFATDS secondary LAN.
LAN2 connector	Allows RG-45 LAN connection associated with AFATDS secondary LAN.
USB connectors	Allows connections of USB devices such as flash memory drive or mouse. The three connectors are interchangeable.
Video output	Allows connection of external monitor or flat panel display.
PC Card Slot	Holds 2.x TacLink 3000 TCIMS. The lower card slot is TCIM 1, the upper is TCIM 2.
30 GB Removable Hard Disk Drive	
CDROM Drive	
Removable battery	

GETAC M230 Rugged Notebook Hardware Specifications

AFATDS will be hosted on the GETAC M230 Rugged Notebook. The GETAC M230 notebook hardware capabilities are depicted in Table 1-2.

Table 1-2: GETAC M230 Rugged Notebook	
Component	Capability
System Type	1.66GHz Intel Core Duo L2400 processor
Operating System	Windows XP Professional
Display	14.1" XGA (1024x768) or 15.0" SXGA+ (1400x1050) TFT.
Media Bay	FDD, Dual DVD-ROM
Power	90-240V, 50/60Hz, LI-Ion Smart Battery (7200mAh)
Parallel Connector	Allows connection of parallel printer.
LAN1 connector	Allows RG-45 LAN connection associated with AFATDS secondary LAN.
LAN2 connector	Allows RG-45 LAN connection associated with AFATDS secondary LAN.
USB connectors	Allows connections of USB devices such as flash memory drive or mouse.
Video output	Allows connection of external monitor or flat panel display.
PC Card Slot	Holds 2.x TacLink 3000 TCIMS.

Artillery Trade and Training

Warrant Officer Class One Phil Matthyssen

Army continuously reviews its employment categories to ensure that operational capability is maintained and the employment categories evolve to meet capability changes. The Artillery Trade and Training Cell at Headquarters Combined Arms Training Centre (HQ CATC) have been working through the process throughout this year. The process culminates in presentation to the Defence Force Remuneration Tribunal (DFRT). The submission put forward is described below; unfortunately however, the proposed new employment categories that were submitted to the DFRT will not be decided upon until mid October. The dates and implementation plan for any approved changes by the DFRT will be announced through your chain of command.

Offensive Support

The proposed Offensive Support (OS) employment category structure is designed with four recruit entry points culminating in a single Manager Operations (MANOPS) OS category. An RAA mortar category has been created for the Army Reserve only, to be known as Artillery Light Gunner (ARTYLTGNR), and the Gun number category becomes Artillery Gunner (ARTYGNR) with very few changes. The OPCP OS category has been split into two functional categories, Artillery Command System Operator (ACSO) and Artillery Observer (ARTYOBS). The new EC do not combine until the WO2 level which is different to the current structure where they combine at SGT.

- *ARTYLTGNR - ECN 161.* This stream focuses on the skill sets required to operate and maintain Mortar Systems as an RAA Army Reserve soldier. This employment category is an AR only category due to the nature of the equipment.
- *ARTYGNR - ECN 162.* This stream comprises the skill sets required to operate and maintain a gun/howitzer and is very similar to how it has been structured for many years.
- *ACSO - ECN 254.* This stream focuses on the skill sets required to operate and maintain the Artillery Battle Management System/RAA

Gunnery Computer System, provide orientation and fixation and is essentially the traditional CP OPCP.

- *ARTYOBS - ECN 255.* This stream focuses on the skill sets required to observe, engage and prosecute targets in the battlespace in support of ADF and Coalition operations and will include the Ack and all the Sigs in the party, with the IET entering the category as essentially a communicator with basic shooting skills.
- *MANOPS OS - ECN 357.* Once qualified at Supervisor (SGT) and with additional experience, the four streams converge to form the OS ECN 357 category. The experience gained in these streams enables the soldier to be employed at Bty, Regt, and BDE level.

This restructure of the RAA OS categories is designed to meet the increased capabilities provided by new guns, equipment and unit structures. OPCP OS soldiers qualified in the CP and JOST will be required to choose either the CP or Observer categories based on unit need, in consultation with the unit chain of a command. The Artillery Trades and Training Cell at HQ CATC will provide more detail on the new structures when they visit units over the next month or so.

Surveillance and Target Acquisition

The proposal for the STA categories is a name change for the Operator Artillery Meteorology and Survey, employment category to better describe ECN 250 employment with Unmanned Aerial Systems (UAS). The new name is Operator Unmanned Aerial System (OPUAS), which combines the UAS and Artillery Meteorology and Survey capabilities. The introduction of the UAS capability permits the operator to monitor the battlespace in real time, enabling continuous updating of the intelligence picture while enhancing troop safety. The UAS capability adds significantly to the already comprehensive skill set of the AMS soldier.

The Operator Radar (OPRDR) category continuum now embeds new surveillance skills with the weapon locating radar (WLR) skills. These skill sets now enable the LBDR/BDR to command and deploy autonomous surveillance detachments in a threat environment gathering additional battle space information to enhance the overall data collection process. Changes to the category are as a direct result of the employment of the increased technology provided by Ground Surveillance Radar and Thermal Surveillance System.

The ARA is required to complete both the lengthy WLR and surveillance skill sets, while the AR stream comprises only the surveillance modules with an appropriate differential in pay grade placement. This provides the Army Reserve with a more achievable category structure, cost effective training and a deployable capability.

- *OPUAS - ECN 250*. This stream comprises two separate skill sets (AMS and UAS). Due to the duration of the training continuum this category is not available for AR soldiers. Employment opportunities may be available for ex-ARA personnel who transfer to the AR.
- *OPRDR - ECN 271*. This stream comprises two separate skill sets (radar and surveillance) and is suitable (in part) for AR.
- *Manager (MAN) STA - ECN 430*. Upon attainment of OPRDR (ECN 271-7 AR), OPRDR (ECN 271-8 ARA) or OPUAS (ECN 250-4 AR), the streams converge. The experience gained in these streams enables the soldier to be employed in the management of STA equipments and the collection of ISTAR products at BG or BDE level.

Ground Based Air Defence

Over the past few years a number of small changes have taken place to streamline the category. With the withdrawal of Rapiere some years ago there is no longer a requirement for more than one ECN. The adoption of a single ECN from GNR to WO1 allows a simplified management structure. ECN 237 is structured as follows:

- *OPGBAD Grade 1 to 3 ECN 237* - is the current structure with name and some content changes. The courses are to change to the Basic OPGBAD and Advanced OPGBAD (OJT/OJE) courses finishing with the Detachment Commander GBAD course.
- *Supervisor GBAD ECN 237 Grade 4* - is the same training and qualification requirements for ECN 396 for SGT, this includes the Advanced Air Defence Simulator course.
- *Manager Operations GBAD ECN 237 Grade 5* - is the same training and qualification requirements for ECN 397 to include WO2 and WO1.

Remembering our sacrifice in Asia

by Cpl Zenith King

THE National Malaya and Borneo Veterans Association of Australia has held its first remembrance service at the Kamunting Road Christian Cemetery, Taiping, to honour those who fell during the Malayan Emergency and Indonesian Confrontation.

Chaplain Wg-Cmdr Ben Usher conducted the service on June 11. The ceremony paid tribute to and recognised the Australian, UK and Commonwealth forces, as well as the Royal Malay police and Malaysian civilians who fought and died during the Malayan Emergency and Indonesian Confrontation.

Twenty-three soldiers from Rifle Company Butterworth (RCB 86) participated in the ceremony in the state of Perak, Malaysia.

Twenty soldiers were posted throughout the cemetery around the graves of the fallen.

Gnr Chris Haire, 4 Fd Regt, felt privileged to be selected for the catafalque party and to represent the Australian Army."

I was proud to stand by the soldiers who had fallen," Gnr Haire said. "To meet returned veterans and family members of those who gave their lives for the freedom of this country was an eye-opener."

Between 1950-66, 65 Australians died in the confrontation and were buried in different parts of Malaysia, Borneo and Singapore.

Twenty-eight men who served as part of the 28th Commonwealth brigade, along with four wives and eight children are laid to rest at Kamunting Road.

Representing the Australian High Commissioner, Arthur Spyrou spoke at the ceremony and said he was "particularly proud to reflect on the important contribution Australians have made to the freedom and peace we enjoy in Malaysia".

The Malayan Emergency is the last major Commonwealth action and the longest continuous military commitment in Australia's history.

Associations & Organisations

Contact List

RAA Regimental Fund

SO2 HOR School of Artillery
Bridges Barracks, Puckapunyal, VIC 3662
Phone: (03) 5735 6465
Mob: 0400 393 758
Email: kym.schoene@defence.gov.au

RAA Historical Company & North Fort Museum

P O Box 1042, Manly, NSW 1655
Phone: (02) 9976 6102 or (02) 9976 3855
Email: northfort@ozemail.com.au
Website: www.northfort.org.au
[See Membership Form]

***Cannonball* (Official Journal)**

Australian Army Artillery Museum

Museum Manager - Major Blue Gallagher
Email: bluegallagher77@hotmail.com

***Battery Guide* (Newsletter)**

RAA Historical Society WA (Inc)

President - Bruce Campbell
Phone: (08) 9221 2494 (Bus)
Secretary - Tom Arnautovic, OAM
P O Box 881, Claremont, WA 6910
Email: info@artillerywa.org.au
Phone: 0419 923 584 (mob)
Website: www.artillerywa.org.au

***Take Post* (Quarterly Newsletter)**

4 Field Regiment (Vietnam) Association

R. J. (Gabby) Hayes
36 Ravel Street, Burpengary, QLD 4505
Email: gabbyhayes@ozemail.com.au
Peter Bruce
Phone: (03) 5752 2114
Mob: 0419 349 317
Email: pjbruce8@bigpond.net.au

7 Field Regiment Association

President - D.R. (David) Leek
Secretary - WO1 John Balfour
Email: john.balfour@defence.gov.au
Correspondence to:
P O Box 206, Frenchs Forest, NSW 2086
Website: 7fd-regt-raa-association.com

10 Medium Regiment Association Inc

P O Box 1915, Geelong, VIC 3220
President - Pat Eldridge
Mob: 0415 098 046

***The Big Gun* (Newsletter)**

12 Field Regiment (Vietnam) Association

President - John Sullivan
Email: sullivanjohn157@gmail.com
Vice President - Rob Costello
Email: cossie0102@bigpond.com
Secretary - John Allen
P.O. Box 312, Belrose, NSW 2085
Mob: 0407 672 849
Phone: (02) 9975 5537
Email: jallen@datamasteranz.com

23 Field Regiment Association

President - Barry Willoughby
Phone: (02) 9533 3215
Mob: 0417 400 902
Email: barrywillos@optusnet.com.au
Secretary - Peter Merlino
63 Penshurst Road, Penshurst, NSW 2222
Phone: (02) 9570 2776
Email: the23fdassoc@yahoo.com.au
Website: www.23fd-regt-raa-association.org

A Field Battery Association Inc

President - Ron (Tex) Bassan
Secretary - Clare Bassan
6 Harveys Road,
Beaconsfield, QLD 4740
Email: texbassan@yahoo.com.au
Email: bonniebassan@yahoo.co.uk
Phone: (07) 4942 5433

A Field Battery National Newsletter

Editor - Ron (Butch) Slaughter
Email: ronbutchslaughter@hotmail.com
Website: <http://afdbty.australianartilleryassociation.com/>

101 Battery

Secretary - Jim Booth
104 Edinburgh Drive, Mt. Hallen, QLD 4312
Phone: 07 5424 6506
Mob: 0417 731 393
Email: jbooth1@bordnet.com.au

101 Battery (Malaya 1959-1961)

President - David Troedel
36 Murphys Creek Road,
Blue Mountain Heights, QLD 4350
Phone: (07) 4630 8787
Email: davidpat@bigpond.net.au

102 Battery

Don Tait
Mob: 0419 287 292
Email: don.tait@castlehillrsl.com.au
Ian Ahearn
Mob: 0417 691 741
Email: ifahearn@iimetro.com.au

103 Battery

Doug Heazlewood
10 Tarhood Road, Warrnambool, VIC 3280
Phone: (03) 5561 4370
Email: heazlewd@standard.net.au

104 Battery

John Sullivan
P O Box 34, Taralga, NW 2580
Phone: (02) 4840 2283
Mob: 0417 298 925
Email: sullivanjohn157@gmail.com

105 Battery

President - Wally Conway
Email: Wall1946@bigpond.com.au
Secretary - Greg West ED
14 Marral Street, The Gap, QLD 4061
Phone: (07) 3300 5303
Email: gwest105@optusnet.com.au

Tiger Rag (Newsletter)

Editor - Arthur Burke OAM
7 Aspley Court, Aspley, QLD 4034
Phone & Fax: (07) 3263 6025
Email: arthurburke@bigpond.com
Website: www.ballaratgenealogy.org.au/105/

106 Battery

Contact Information Required

107 Battery

President - Warren D. Feakes
Phone: (02) 6231 8369
Email: wfeakes@netspeed.com.au
Secretary - Hilton Lenard
Mob: 0418 695 345
Email: hiltonlenard@hotmail.com
Correspondence to: 107 Field Battery RAA
Association, P O Box 199, Erindale, ACT 2903

Ram - Ramblings (Newsletter)

Editor - Barry Pearce
Website: www.107fdbty.com

108 Battery

John Wells
P O Box 407, Beaconsfield, VIC 3807
Phone: (03) 5944 3157 (H)
Email: john.wells8@bigpond.com

The Journal With No Name (Newsletter)

RAA Association (QLD) Inc

President - Colonel Vern Mullins RFD ED
Secretary - Lieutenant Colonel Ron West
Email: qld.gunline@gmail.com
Mob: 0408 073 944
P O Box 174, Lutwyche, QLD 4030
Website: <http://sites.google.com/site/raaaqld>

Gunline (Newsletter)

RAA Association (NTH QLD)

President - Lieutenant Colonel Mike Dinnison
18 Mango Ave, Mundingburra, QLD 4812
Phone: (07) 4725 8081
Email: mdib50@yahoo.com.au
Secretary - Steve Wilson
Phone: (07) 4778 3119
Email: whippet@aapt.net.au

Gunners Gossip (Newsletter)

Editor - Steve Wilson
Email: whippet@aapt.net.au
Website: www.ozatwar.com/raa-nqld.htm

RAA Association (NSW) Inc

President - Lieutenant Colonel Schon Condon RFD
Mob: 0409 091 157
Email: president@artillerynsw.asn.au
Secretary - Bill van der Veer
G P O Box 576, Sydney, NSW 2001
Mob: 0401 691 575
Email: secretary@artillerynsw.asn.au

'Gunfire' (Magazine)

Editor - P O Box 1034, West Cessnock, NSW 2325
Phone: (02) 4990 8560
Mob: 0417 680 617
Email: gunfire@hn.ozemail.com.au
Website: www.artillerynsw.asn.au/

RAA Association (NSW) Newcastle Sub-Branch

Secretary - Grant Nicholls
P O Box 918, Charlestown, NSW 2290
Email: secretary@raaanewcastle.com
Website: www.raaanewcastle.com

RAA Association (ACT)

President: Colonel P. Gates CSM
Secretary - Lieutenant Colonel Chris West
Phone: (02) 6265 7970
Email: christopher.west@defence.gov.au

Shot Over (Newsletter)

RAA Association (VIC) Inc

President - Major N. Hamer RFD
Phone: (03) 9702 2100
Email: nhamer@bigpond.net.au
Secretary - Mrs Rachel Decker
8 Alfada Street, Caulfield South, VIC, 3162
Email: rachel.decker@bigpond.com.au

'Cascabel' (Magazine)

The Editor 'Cascabel'
Editor - Alan Halbish, 115 Kearney Drive,
Aspendale Gardens, VIC 3195
Phone: (03) 9587 1676
Email: ahalbish@netscape.net.au

RAA Association (SA)

President - Geoff Laurie
12 Chatsworth Grove, Toorak Gardens, SA 5065
Phone: (08) 8332 4485
Email: gunnersa@chariot.net.au

RAA Association (NT)

The Secretary
G P O Box 3220, Darwin, NT 0801

RAA Association (WA) Inc

President - Bruce Campbell
Phone: (08) 9221 2494 (Bus)
Vice-president - Peter Rowles
Email: rowles@highway1.com.au
Secretary - Tom Arnautovic, OAM
P O Box 881, Claremont, WA 6910
Email: info@artillerywa.org.au
Phone: 0419 923 584 (mob)
Website: www.artillerywa.org.au

Artillery WA (On-line Newsletter)

RAA Association (TAS) Inc

President - Colonel Stephen Carey RFD, ADC
Honorary Secretary - Norm Andrews OAM
Tara Room, 24 Robin Street, Newstead, TAS 7250
Email: forfar@gmail.com
Phone: (03) 6344 8307
Mob: 0409 539 430
Website: www.tasartillery.com

The Artillery News (Newsletter)

Editor - Graeme Petterwood
P O Box 10, Ravenswood, TAS 7250
Email: pwood@vision.net.au

Australian Air Defence Association Inc.

President - Tony Brennan
Email: president@aadaa.asn.au
Secretary - Alan Mears
AADAA, 14 Harris Street, Angle Vale, SA 5117
Email: secretary@aadaa.asn.au or
bottlecreekau@hotmail.com
Website: <http://aadaa.asn.au>

Locating Artillery Association

President - Major Allan Harrison RFD
P O Box W43, Abbotsford, NSW 2046
Phone: (02) 9719 2252 or 0412 021665 (M)
Email: allan@harrisonsolution.com.au
Vice President - Major Joe Kaplun
Phone: (02) 9339 3000
Email: joe.kaplun@defence.gov.au
Secretary - Bob Morrison
Phone: (02) 4861 6463
Mob: 0417 447 504
Email: robmor@ozemail.com.au
Email: info@locatingartillery.org
Website: www.locatingartillery.org

LOCREP (Newsletter)

Editor: Major Allan Harrison (see above)

18 Light Anti-Aircraft Regiment Association

Secretary - Alan Lark
1 Manor Hill Road, Miranda, NSW 2228
Phone: (02) 9522 4815
Mob: 0428 461 621
Email: mokingalong@optusnet.com.au

9 HAA/LAA Regiments Association

President - Phil Easton
29 Michael Crescent, Kiama, NSW 2533
Phone: (02) 4237 6087
Email: pjeaston@westnet.com.au

13 Battery Association Inc

President - Paul Scarborough
Email: paulscarborough@bigpond.com

41 Battery / 11 Field Regiment RAA Association Inc

President - Graeme Fitzpatrick
25 Manakin Ave, Burleigh Waters QLD 4220
Phone: (07) 5535 1211 (H)
Email: graemefitz@dodo.com.au

Gunner Ear (Newsletter)

Fort Lytton Historical Association Inc

President - Maurice McGuire, OAM
P O Box 293, Wynnum QLD 4178
Phone: (07) 3399 3198
Email: flhaguides@gmail.com

'The Custodian' (Newsletter)

Editor: Harry Lynas

Fort Scratchley Historical Society

Website: www.fortsscratchley.org.au

Australian Artillery Association

Website: www.australianartilleryassociation.com

RA Association

Website: www.forums.theraa.co.uk.php

RAA Unit Websites

RAA and other unit websites maybe accessed via the Australian Army website.

<http://www.defence.gov.au/army/RRAA>

<http://intranet.defence.gov.au/armyweb/Sites/RRAA>



Regimental Fund – Needs Your Support

Warning Warning Warning Warning Warning
New subscription rates now apply.

Introduction

The RAA Regimental Fund is designed to provide a source of funds that can be utilised for the benefit of all Gunners. One of the most important uses for these funds is to support requests from RAA units and organisations to assist in the ongoing preservation and promotion of the Regimental heritage. Other worthy goals that this funding supports, is not limited to, but includes purchasing:

- Cyphers for presentation to those who retire from service or transfer from full-time to part-time after more than 20 years service.
- Paintings depicting the Regiment in its many campaigns and at peace.

The Regimental Committee cannot achieve these very worthy goals without the support of individual members and organisations within the Gunner community. All officers, warrant officers and sergeants are encouraged to make an annual financial contribution to the Regimental Fund either as individuals or as a mess or organisation/association or take up the option of a 'Life Subscription' which then absolves the subscriber from being asked for any further subscriptions. The list of life subscribers is published in the Liaison Letter and they automatically receive a complimentary copy.

Recent Projects

Over the years the Regimental Fund has supported a wide range of requests for financial support, including some of which are ongoing such as insurance and maintenance of the AIF and Mount Schank Trophies. It is worth noting that the sums of money requested from the Fund are generally significant and therefore can only realistically have any chance of being provided if each and everyone

of us support the Fund. Projects supported by the Fund include the allocation of:

- \$2500 to 8th/12th Medium Regiment to assist the Regiment to build a Regimental Memorial to coincide with the Regiments 30th anniversary celebrations;
- \$500 to 131st Surveillance and Target Acquisition Battery to improve the Battery memorial and add a plaque to mark the 50th Anniversary of the unit and its name change from 131st Divisional Locating Battery;
- \$1000 to 1st Field Regiment for its 50th anniversary celebrations;
- \$1000 to 4th Field Regiment for its 40th anniversary celebrations;
- \$1500 for shield to be held by winner of Mount Schanck trophy;
- \$1000 to 1st Field Regiment to mark 50th anniversary of 105th Field Battery, 50th anniversary of commitment to Malaya and 40th anniversary of commitment to South Vietnam;
- \$1,000 to complete the Major General T. Cape Bequest to the Regimental officer's mess;
- \$5,000 to commission a painting to mark the withdrawal from service of Rapier;
- \$6,000 to commission a painting to mark the pending end of service of the 155 mm M198; and
- The on-going Royal Military College Graduation Artillery prize which is approximately \$100 per graduation.

Subscriptions/Costs

The recommended new rate of contribution is deemed as \$155 for a life subscription and the following sliding scale based on rank for an annual subscription:

- LTCOL and above – \$30,
- MAJ and CAPT – \$25,
- LT and WO – \$20, and
- SGT – \$15.

It is understood that some individuals may not be in a position to meet the suggested scale, therefore any contribution will be gratefully appreciated in helping to continue the good work the Fund has provided the Regiment over many years.

Without your financial support the Regimental Committee is unable to support the preservation of Regimental history and requests for financial support from units.

Regimental Fund Benefactors

Correct as at 9th September 2009

LTGEN D.M. Mueller	COL G.W. Finney (see note)	LTCOL B.N. Hawke
MAJGEN J.E. Barry	COL S.T. Goltz	LTCOL J.F. Henry
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MAJGEN P.B. Symon	COL J.C. Kirkwood	LTCOL R. Maurice
MAJGEN J. Whitelaw (see note)	COL P.J. Lawrence	LTCOL J.H. McDonagh (AALC)
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BRIG N.D. Graham	COL R.B. Mitchell	LTCOL S.W. Nicolls
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BRIG J.R. Salmon (see note)	COL D.M. Tait	LTCOL D.H.R. Wilton
BRIG W.M. Silverstone	COL A.D. Watt (see note)	LTCOL B.A. Wood
BRIG G.B. Standish	LTCOL C.W. Andersen	MAJ J.D. Ashton
BRIG R.Q. Stanham	LTCOL R.M. Baguley	MAJ G.F. Berson
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BRIG V.H. Williams	LTCOL R.J. Crawford	MAJ M. Dutton
BRIG P.D. Winter	LTCOL L.D. Ensor	MAJ D.M. Edwards
COL B.M. Armstrong	LTCOL E.P.M. Esmonde	MAJ C.A. Flear
COL J.F. Bertram	LTCOL J. Findlay	MAJ A.O. Fleming
COL R.V. Brown	LTCOL R.J. Foster	MAJ W.J. Francis
COL A.R. Burke (see note)	LTCOL C. D. Furini	MAJ T.J. Gibbings
COL D.L. Byrne	LTCOL I.D.W. George	MAJ L.P. Hindmarsh
COL S.R. Carey	LTCOL R.G. Gibson	MAJ D.A. Jenkins
COL S.E. Clingan	LTCOL G. Gilbert	MAJ D.E. Jones
COL M.C. Crawford (see note)	LTCOL K.R. Hall	MAJ J.B. Kelly
COL J.A.L. Fairless	LTCOL M. Harvey (RNZA)	MAJ M.D. Laurence

MAJ R.S. McDonagh
 MAJ M.W. Middleton
 MAJ G.K. Milic
 MAJ D.R. Morgan
 MAJ S.G.T. Mott
 MAJ L.W.C. Partridge
 MAJ P.J. Prewett
 MAJ V.J. Ray
 MAJ S.G. Rohan-Jones
 MAJ W.A. Ritchie
 MAJ K.F. Schoene
 MAJ L.F. Searle
 MAJ L.J. Simmons
 MAJ A.H. Smith (see note)
 MAJ A.E.R. Straume
 MAJ M. Taggart
 MAJ W. Tapp
 MAJ A.A. Thwaites
 MAJ A.C. Turner
 MAJ T.W. Vercoe
 MAJ M. St C. Walton
 MAJ C.V. Wardrop
 MAJ P.R. Widelewski
 CAPT J.P. Casey
 CAPT J.M. Groves
 CAPT M.S. Hodda
 CAPT S.A. Hompas
 CAPT A.M. Ludlow
 CAPT S.R. Nebauer
 CAPT D.T. O'Brien

CAPT M.A. Pasteur (AAAvn)
 CAPT P.J. Smith
 CAPT M.L. Van Tilburg
 CAPT P. Wertheimer
 WO1 D.G. Annett
 WO1 D.W. Bowman
 WO1 B.A. Franklin
 WO1 G.A. Jebb
 WO1 M.I. Johnson
 WO1 M.A. Johnston
 WO1 T.L. Kennedy
 WO1 D.R. Lehr
 WO1 P.A. Matthyssen
 WO1 R.J. Thompson
 WO1 P.T. Washford
 WO1 C.F.J. Watego
 WO1 G.J. Webster
 WO2 M. Broughton
 WO2 M.R. Dawson
 WO2 R.T.B. Hay
 WO2 J.J. Hennessy
 WO2 D.G. Ogden (see note)
 WO2 A. Palovich
 WO2 R.N. Skelton
 SGT D.H. Wood

Note:
 COL M.C. Crawford has paid three life subscriptions. MAJGEN T.R. Ford, MAJGEN B.A. Power, MAJGEN J.P. Stevens, MAJGEN J.D. Stevenson, MAJGEN J. Whitelaw, BRIG R.K.

Fullford, BRIG J.R. Salmon; COL A.R. Burke, COL G.W. Finney, COL A.D. Watt; LTCOL D.M. Murphy; MAJ A.H. Smith; and WO2 D.G. Ogden have paid two life subscriptions.

Deceased Benefactors

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 MAJGEN T.F. Cape
 MAJGEN G.D. Carter
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 BRIG A.G. Hanson
 BRIG R.Q. Macarthur- Stranham
 LTCOL R.H.E. Harvey
 LTCOL G.W. Tippetts
 MAJ M. Dawson

Associations

RAA Association (Tasmania)
 RAA Association (Queensland)
 RAA Association (North Queensland)
 RAA Association (Victoria)
 RAA Association (NSW) - Newcastle Branch
 105th Field Battery Association
 Fort Lytton Historical Association
 Royal Australian Artillery Retired Officers of South East Queensland



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Surname: _____
 (or Association)

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 or to make an electronic transfer contact Major Kym Schoene on (03) 5735 6465

Annual Subscription:
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