



# SMALL WARS JOURNAL

## Precision and the Consequences for the Modern Battlefield

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Albert Palazzo

#### Introduction

The effectiveness of precision weapons at striking targets has been repeatedly demonstrated in recent wars. It is no longer remarkable that a missile or shell fired from a considerable distance or a bomb released from a great height can hit a target with only a minuscule margin of error. Precision munitions are now even available for what would formerly have been classified as area weapons, such as mortars, and are beginning to emerge for small arms.<sup>[i]</sup> Artillery precision rounds have also entered service and are converting the gun from a saturation weapon to a one-shot one-kill weapon.<sup>[ii]</sup> On today's battlefield, if it can be sensed it can be killed from afar, often with a single round. As the level of precision improves, this will only become truer.

To date, only a few countries have demonstrated precision capability in war. Typically, precision has been the remit of the United States and its coalition partners, or a few other countries such as Israel. Other countries – and even non-state actors – do have precision capability in varying degrees, some quite significant, but little or no experience in its employment in war. In recent wars, therefore, the application of precision weapons has been a largely one-sided affair.

This happy condition is unlikely to last. These weapons are proliferating and a future may not be too far off in which war is waged between two adversaries who both field a robust precision capability. For Israel this has already become a reality; for example one of its corvettes was hit by an anti-ship cruise missile in its 2006 war with Hezbollah. China's rise has also been marked by its investment in precision technologies as it fields weapons aimed at denying access to its maritime approaches. Other countries are making similar investments, although not on the same scale.

This paper presumes that the art of war is on the cusp of what MacGregor Knox and Williamson Murray have defined as a Revolution in Military Affairs (RMA).<sup>[iii]</sup> This RMA offers the opportunity for states, and even sub-states, to establish wide anti-access envelopes that will prevent an adversary from closing with their territory, or at least doing so only at a high or even mission defeating cost. The effect of the proliferation of precision weapons will be profound and far reaching. At the tactical level the rise of precision threatens to shift the balance between the attacker and the defender decisively in the direction of the defence, with the result being a denial of the offence's ability to manoeuvre, close, and force a decision. However, the Precision RMA will also have more far-reaching effects. These will necessitate a re-evaluation of the entire character of war, particularly the balance between the traditional domains of

war, as well as having implications for the structure and organisation of land, sea and air forces. The time has come, therefore, for the Australian and US Armies and our allies to think through the implications of precision and to grapple with a character of war that promises to be distinctly different from that of today.

### **The Killing Zone**

There is some urgency for the Australian and US Armies to think more deeply on the dramatic shift in the character of war that precision weapons offer. To date the US and its allies have been the beneficiaries of the precision revolution. This is an advantage that cannot last. USMC Lieutenant General George Flynn has noted that as relatively inexpensive guided weapons proliferate even non-state actors will be able to hit more or less everything they aim at.[\[iv\]](#)

More significantly, proliferation is being accompanied by innovation in means of employment. The US and its allies have to date largely used precision as a means to improve the effectiveness of existing ways of placing a kinetic effect on a target.[\[v\]](#) They have not consciously attempted to launch a RMA. Other states, however, are doing just that. Instead of seeking only better tactical effects they are using precision to create effects that encompass the strategic and operational levels of war. The primary effect sought is area denial, or to use a related expression, anti-access.

Modern precision weapons offer the defence the opportunity to create killing zones measured not in metres or kilometres but in thousands of kilometres. Barry Watts has described these as no-go zones; areas that it would be too difficult or costly to project power across, with the result being a balkanization of the world.[\[vi\]](#) This is not the first time advances in military technology have allowed the establishment of such zones that favour the defender. The second half of the 19<sup>th</sup> Century saw the introduction of a number of weapons that allowed a defender to create a lethal fire-beaten zone in front of their positions, with a depth that would eventually reach several kilometres. These weapons included breech loading rifles and artillery, quick firing guns, machine guns and smokeless powder. In combination, these weapons shifted battlefield advantage decisively in favour of the defender. To close with their opponent, attacking troops had to hazard a lethal and broad killing zone. The stalemate and the slaughter of tens of thousands of soldiers on the Western Front was the result.

### **The Evolution of the Dimensions of War**

Today's precision anti-access weapons have immense ranges; some missiles can hit targets thousands of kilometres from launch. More significantly, they can also reach out over the maritime domain. China already deploys missiles that can strike beyond the first island chain, bringing within range the US bases on Okinawa. Thus, what began as a problem primarily of tactics is now also one of operations and strategy.

What is also happening is what I have identified elsewhere as a compression of the dimensions of war.[\[vii\]](#) As range, accuracy and lethality increase, the importance of distance decreases since these weapons remain effective over very long distances. For Australia this will prove particularly significant since, as S J Dudzinsky, Jr. and James Digby have observed, remoteness from threat is a long-standing factor in Australia's defence policy.[\[viii\]](#)

Dudzinsky and Digby were writing in 1976 and their concern was missile-borne nuclear bombs. But a further observation, that can only now be made, is that the land, sea and air domains will merge to become one as long-range land-based precision weapons achieve dominance over the sea and air. As humanity is a terrestrial species, the primacy of the land in war will only be further enhanced. The significance of this event is that command of the sea is no longer a function of being the dominant naval power in a region. Instead, the prerequisite for the command of the sea will be command of the land. If navies are to manoeuvre in waters over-watched by anti-access weapons, they can only do so if friendly forces control

both their own territory and also dominate the land of their adversary. Having the ability to exert dominance over the land on both sides of a body of water will be the prerequisite for command of the sea.

The fate of warships sailing into waters over-watched by anti-access weapons is likely to be that described by Wayne P Hughes in *Fleet Tactics and Coastal Command* and Henry J Hendrix in *At What Cost a Carrier?* - destruction.<sup>[ix]</sup> Hughes goes on to update the old truism, 'a ship's a fool to fight a fort.'<sup>[x]</sup> Moreover, with anti-access weapons the fort is no longer a cannon-armed static redoubt guarding the entry to a harbour or the passage of a narrow straight. Instead it is masses of missile batteries, swarms of unmanned small boats and submersible vessels, and remotely piloted aircraft. The significance of this development is just as great for land forces as it is for navies, particularly if armies are required to project power in the maritime space.

### **The Way Ahead**

It is useful to think of the relationship between the offence and the defence as a pendulum whose undisturbed state is one of relative balance or neutrality. When the pendulum is in a neutral setting the available technology, the means of its implementation and the condition of training and morale – to mention just a few determinants of military effectiveness – offer neither the offence nor the defence a significant advantage. The relationship between the offence and defence is one of symmetry. In the eternal struggle between adversaries for advantage over each other, the pendulum does frequently move in either direction but rarely does it shift very far, and when it does it is usually not for very long. An innovative military force that gains an asymmetric advantage invariably unleashes urgency for adaptation by its opponents and its initial advantage is neutralised or even bettered. For example, the appearance of the bronze mace gave its wielder a decisive advantage over opponents still armed with a stone one. The advantage was temporary, however, as bronze maces proliferated and replaced inferior designs.

Sometimes the pendulum is pushed further. In 1939 the German Army demonstrated its superior understanding of mechanised warfare which gave its forces an offensive advantage, albeit only until its opponents adjusted. Today precision weaponry offers an even more dramatic swing but this time in the direction favouring the defence, a swing that may prove even greater than the one which occurred during the late 19th Century and reached its apogee on the Western Front.

For the United States Army and the Australian Army, as well as for our allies, it is critical that the balance be returned to a more neutral setting. Being able to restore mobility to war is critical because without manoeuvre, war risks becoming static and indecisive. The utility of war may lessen. It will also likely become a war of exhaustion, with all the potential for a long struggle. But to permit manoeuvre, the killing zone will need to be controlled.

Achieving manoeuvre in a space dominated by anti-access weapons is on one level a question of tactical adaptation. During the First World War the stalemate of the trenches was overcome and mobility restored. Each side invented new weapons and incorporated new ideas about how to organise and integrate their forces with the goal of restoring manoeuvre and hence decision. For the British and French this was a process of identifying and coordinating the means to neutralise the defensive firepower that dominated no-man's land. The key breakthrough was the establishment of the Counter-Battery Staff Office, modern war's first intelligence fusion and command centre. Through the better identification of targets, combined with technical advances in gunnery accuracy, the British and French were able to employ their own fire assets to neutralise German ones and thereby remove the enemy's defensive fire from battle. The result was the restoration of manoeuvre.<sup>[xi]</sup> While successful, manoeuvre was restored at a very high cost and the Western Front remained a highly lethal environment until the Armistice. While the British and French had shifted the pendulum back into a neutral setting they were unable to push it far enough to give them as

the attacker an advantage. That required the maturing of mechanisation warfare in the interwar period.

The United States and its allies must do more than simply restore the ability of their forces to manoeuvre in zones that their adversary wishes to deny them. In other words, they must aspire to achieve more than the restoration of a balance between the offence and defence. While it is possible to employ their own precision weapons and sensors to neutralise an adversary's systems and thereby achieve manoeuvre, that is an achievement solely of tactical value. Instead, the United States and its allies must innovate in ways that achieve more than just enhanced strike ability. Other assets such as cyber and social media must also become elements of distant strike. They must strive to create an asymmetric advantage for the offence. They must seek opportunities for precision, as well as for the deployment of other emerging weapons and systems that also provide advantage in the operational and strategic domains.

The coming of precision also requires a reassessment of the balance between the three traditional domains of war – the land, sea and air. As the ranges of precision weapons increase, and as those of other new technologies also increase (for example, cyber's reach is global), the relevance of distance will decrease. This will have a profound effect on the mission and organisation of fleets and air forces. Ships will no longer need to fight other ships for sea control. Instead sea control will be achieved by land based precision strike. The same can be said for the attainment of air superiority. Navies and air forces will not disappear as a result of this change in the relationship between the domains of war, but their purpose will need to change. In a precision future the prerequisite task for ships will become the transport and lodgement of a land force, its sustainment ashore and the provision of supporting fire, not battle against other ships. For air forces, the missions of transport and close air support will move to the fore. These will be difficult adjustments for these services to accept because they strike at the heart of what it means to be a sailor, airman or airwoman. But they will need to be confronted and addressed. They are not avoidable.

## Conclusion

The appearance of aircraft in naval warfare redefined not only naval tactics but also the whole strategy of naval warfare.<sup>[xii]</sup> A similar process is at work today with precision weapons. In *Sea Power and American Interests in the Western Pacific*, David C Gompert concludes that 'it no longer takes a carrier to sink a carrier.'<sup>[xiii]</sup> The implications of Gompert's words are clear.

Like all innovations, precision weapons offer both risks and rewards. Whether one achieves the benefits of the rewards of an innovation or one is deterred by its risks is a matter not of the technology but the agency of the human brain in coming to understand the opportunities offered and the willingness to overcome institutional reluctance and cultural impediment. The effects of a precision RMA can be far-reaching. The initial challenge facing the United States, Australia and their allies is to overcome the advantage that potential adversaries have gained through their implementation of anti-access systems and thereby restore the balance between the offence and the defence. But that is not enough. Precision promises – or perhaps requires – a rethinking of the entire character of war, particularly the relationship between the domains of war. The United States, Australia, and their allies need to think through all the implications of precision, not just use it to improve targeting and the ability to kill. They must see its potential effects on the entire character of war. This is because the future does not just happen on its own, it must be created.

The view expressed here are the author's and not necessarily those of the Australian Army or the Department of Defence.

## End Notes

[i] 'Raytheon, IMI turn dumb mortar bombs into precision weapons,' *Defence Update*, at [http://defence-update.com/products/d/dagger\\_040709.html](http://defence-update.com/products/d/dagger_040709.html)

[ii] 'XM982 Precision Guided Extended Range Artillery Projectile,' *Global Security*, at <http://www.globalsecurity.org/military/systems/munitions/m982-155.htm> (accessed 28 June 2016).

[iii] Macgregor Knox and Williamson Murray, 'Thinking about revolutions in warfare,' in Macgregor Knox and Williamson Murray, *The Dynamics of military revolution 1300-2050*, Cambridge University Press, Cambridge, 2001, p. 12-13.

[iv] Barry D Watts, *The Maturing Revolution in Military Affairs*, Center for Strategic and Budgetary Assessments, Washington, DC, 2001, p. 11.

[v] Watts, *The Maturing Revolution in Military Affairs*, p. 7.

[vi] Barry D Watts, *The Evolution of Precision Strike*, Center for Strategic and Budgetary Assessments, Washington, DC, 2013, p. 31.

[vii] See, Albert Palazzo, Compressing the Dimensions of War, *Land Power Forum*, 4 November 2015, at <http://www.army.gov.au/Our-future/Blog/Articles/2014/11/Compressing-the-dimensions-of-war> (accessed 30 June 2016).

[viii] S J Dudzinsky, Jr and James Digby, *The Strategic and Tactical Implications of New Weapons Technologies*, Rand, Santa Monica, 1976.

[ix] Wayne P Hughes, Jr., *Fleet Tactics and Coastal Command*, Naval Institute Press, Annapolis, 2000; and Henry J Hendrix, *At What Cost a Carrier?*, Center for a New American Security, Washington, DC, 2013.

[x] Hughes, *Fleet Tactics and Coastal Command*, p. 36.

[xi] For the story of this innovation see, Albert Palazzo, 'The Counter-Battery Staff Office and the Control of the Enemy,' *Journal of Military History*, 63:1 (January 1999), 55-74.

[xii] Bernard Brodie, *Seapower in the Machine Age*, New York, Greenwood Press, 1943, p. 411.

[xiii] David C Gompert, *Sea Power and American Interests in the Western Pacific*, Rand, Santa Monica, 2013, p. 4.

## About the Author



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Dr. Albert Palazzo is the Director of the Australian Army's War Research Centre. His Ph.D. is from The Ohio State University and his thesis was published as *Seeking Victory on The Western Front: The British Army & Chemical Warfare in World War I*. He has published widely on the history of the Australian Army and the contemporary character of war. His major works include *The Australian Army: A History of its Organisation, 1901-2001*; *Moltke to bin Laden: The Relevance of Doctrine in Contemporary Military Environment*, *The Australian Army in Vietnam*, *The Future of War Debate in Australia*, and *Forging Australian Land Power, A Primer*. His current research is on the effect of resource limits and climate change on the future character of war and technological advances and the rising superiority of the defence.

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