GEO-STRATEGY AND WAR: ENDURING LESSONS FOR THE AUSTRALIAN ARMY

THE 2015 CHIEF OF ARMY HISTORY CONFERENCE

Edited by
Peter Dennis

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## Contents

Preface v
Introduction vi
Notes on Contributors viii

Aftermaths: Environmental Legacies of Warfare

*Richard P. Tucker* 1

The Tyranny of Distance: Geo-strategy and the New Guinea Campaign of 1914

*Robert Stevenson* 19

The Operational Implications of Geography, Space and Distance on the Eastern Front, 1914–1917

*Richard L. DiNardo* 57

Cracking the Citadel: Allied Operations to Expel North Vietnamese Forces from Hue during the 1968 Tet Offensive

*Erik Villard* 78

Counterinsurgency Doctrines: Principles and Practical Examples from Iraq and Afghanistan

*Bill Ardolino* 90

Geographic Intelligence in the World Wars

*Lori Sumner* 113

Overcoming Geography, but still Struggling with Terrain: Balikpapan, 1945

*Garth Pratten* 143

Situating Australia in a World of Climate and Conflict

*James R. Lee* 165

Gone with Winds: A Quantitative Analysis of Field Locations and Climate Shifts in Imperial China

*David D. Zhang and Pei Qing* 193
A Rock in an Angry Sea: The Indian Army and the Punjab 1947
Daniel Marston 212

‘Preventing Mistakes’: Adapting to Culture and Competence in the
War for Korea, 1946–1953
Bryan R. Gibby 229

The Pacific Islands: Using Indigenous Resources in Wartime
Judith A. Bennett 257

The Politics and Logistics of Military Campaigning in the
Middle-East During the First World War
Kristian Coates Ulrichsen 287

The World is Not Flat: War and Distance in the Twenty First Century
Patrick Porter 313

Index 325
Preface

The preparation for publication of the papers from the 2015 Chief of Army History Conference was especially challenging, involving as many of them did complex colour charts and diagrams. I am indebted to the individual contributors for their patience in what has been an unexpectedly protracted process.

I am especially grateful to Catherine McCulloch who has reworked many of the images that accompanied individual chapters, and to Roger Lee, Andrew Richardson, Nick Anderson, Jeffrey Grey and Tania Hampson for their sterling efforts in organising the conference (and in organising me). Terry McCullagh has again produced an exemplary index, while our indefatigable typesetter, Margaret McNally, has tackled a difficult production with her customary skill and good humour. I thank them all.

Peter Dennis
Introduction

Among the more persistent myths about the profession of arms is the cliché that generals spend their time re-fighting the last war rather than preparing for the next one. Whether this was ever true is open to debate but it is demonstrably not correct in today’s army. The Australian Army has two major generals in Army Headquarters: one of whom is directly responsible for all facets of planning and preparing for the next conflict. His organisation, Modernisation and Strategic Planning Division, is central to (but not the only part of) the whole process of ensuring a combat-ready and capable land force is available to for Government in the future.

However, irrespective of how much effort is applied to the problem, predicting the future is extremely difficult. No Army planner in 1939 could have foreseen or planned for a nuclear battlefield that was only six years away. It would have been very difficult in 1945 to predict and plan for air-cushion vehicles, lasers, digital communications and a plethora of other technical developments that are common on the battlefield of 2015. Armies have long recognised the ability of technological evolution to change the way war is waged on the battlefield and have thus devoted much effort to driving, developing and adopting new technologies to war. This effort has been well-rewarded in terms of combat effectiveness. However, what has not been subjected to the same degree of examination and application are the non-technical drivers of combat that have as much potential to influence the shape of the battlefield as does any new technology.

Warfare is a human activity. Technology provides more sophisticated tools to conduct war but does not (yet) make war itself. War is fought between humans, for human reasons. Where wars are fought is usually related to why they are fought, how they are fought and how they are concluded. Understanding what technology offers the soldier is important, but so is understanding where the soldier and this technology will be and why. If predicting the future of technology is difficult, predicting where and when the next war will occur is even more problematic. Yet planning an army for the future cannot ignore such fundamental issues as geography and climate. As the United States discovered in Vietnam, a high-tech, first-world army can still struggle if used in a political and geographic setting for which it was never designed or to which it was insufficiently adapted. Australia, with vastly fewer resources to commit to the military, can never have sufficient land combat power to meet every possible military contingency. Planning must therefore be guided as much by analysis of human and physical geography, historical evidence, climate and resource issues and of the basic
causes of war, as by likely futuristic weapons systems.

This conference examines some of the central issues in this complex relationship between human and physical geography and military operations. If the predictions about climate change are correct, changes in equipment, training and possibly even organisation will be needed to accommodate the new geographic reality of a hotter world. Armies now rarely fight solely as national entities, so understanding the implications of operating as part of a multi-national force—including force elements from non-traditional allies—will be critical to success. While technology provides assistance in overcoming difficult terrain, understanding the implications of operating in unconventional geography like urban super-city slums, littoral mega-cities or remote devastated mountain scapes, will drive new tactics, casualty management and logistics systems. In recent years, armies have tended to regard local populations within war zones as predominantly a management problem. Yet armies have missed the opportunity to employ local populations as force multipliers: understanding these opportunities and how to capitalise upon them will enable armies to operate more efficiently that they otherwise could. All these issues require analysis and understanding in future modernisation planning.

The aim of this conference is to demonstrate there is more to force planning than a narrow focus on a technical solution. Human geography has changed as radically as technology, while at the same time, the changing physical world is taking us in an unknown direction. Creative thinking about all the parameters in play on the modern battlefield will be essential for armies in future conflicts if they are to succeed.

Roger Lee
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We have an important opportunity now to explore and strengthen the ties between military history and environmental history, which have been two entirely different fields of study until very recently. But in today’s world—its military realities and its environmental imperatives—that gap must be bridged. We must move expeditiously toward a more coherent and collaborative understanding of the interconnections between military operations and environmental dynamics, past and present. This convergence is beginning to have evident significance in the broadening discussion of environmental security. We are coming to recognise that environmental stress is both a matter of specific locations and a trend that transcends national boundaries.1

The reasons for the deep chasm between the two groups of historians are perhaps easily understood. In the United States the study of environmental history emerged rapidly in the 1960s, at a time when most environmentalists were active against the Vietnam War—especially by 1969-70 when Agent Orange hit the headlines, followed by the first Earth Day mobilisation. Reflecting that polarisation between the military and the universities, environmental historians thereafter rarely considered warfare (or more broadly, military operations) as a subject of their work. This was curious, to say the least, because mainstream historians have placed the military organisation of the state, society and economy in a central position throughout history.

Fortunately, this polarisation has begun to dissolve, reflecting a generational change in the membership of our professional organisations. We are building bridges between the Societies for North American, European, Latin American and East Asian Environmental History and the Society for Military History, the Inter-University Seminar on Armed Forces and Society, and others. This trend includes the first glimmer of a welcome convergence between environmental history and military geography.

The interaction between military operations and the natural world has been the subject of (or obliquely signified in) several broad sweeping studies. In the last decade or so, environmental historians representing a range of disciplines—from North America, Europe and around the world—have been working together to create a global environmental history of military operations across the spectrum of wartime and peacetime. A convenient starting date for our publications is 2004, when we published *Natural Enemy, Natural Ally*. As the title of this book emphasises, the range of environmental consequences that we recognise includes instances when reducing human population pressure on the land has led to the resurgence of natural ecosystems, from delimited truce areas to broad regions under sharply reduced population. We are placing new attention on the role of epidemic disease in the obvious but neglected interactions among mass conflict, epidemics, demographic collapses, and ecosystems. One obvious case of this dynamic was 1348-1451 in Europe, when the Hundred Years War, severe climate change, bubonic plague and demographic collapse collided, and tended rural landscapes reverted to secondary woodlands on a regional scale. Another was the sixteenth century outside Europe, when indigenous confrontation with Europeans resulted in history’s greatest demographic catastrophe, accompanied (in the Americas at least) by resurgence of natural ecosystems that had been heavily shaped by human activity over previous centuries.

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3 Detail on this network can be found at <environmentandwar.com>.

Acceleration in the Industrial Era

The era of industrial warfare, which emerged in the mid-nineteenth century, has accelerated all aspects of military, society and environment. Environmental historians of the American Civil War (1861-1865) have led the way in incorporating environmental with military narratives.

Though the major European wars of the mid-nineteenth century are equally momentous for environmental historians, those wars have not yet been considered for their environmental significance. The exception to that until now has been mid-century France, where the long-term implications for the French defeat at the hands of Germany in 1870-71 led to gradual expansion of the French armed forces and military control of expanding lands.

First World War

As the conflicts among the industrial powers intensified, by the 1890s they spread across the globe in competition for control of colonial empires and their natural wealth. Open conflicts broke out in several locations in Africa and Asia; the environmental consequences of these local wars have not yet been studied in detail. This rapid globalisation of military operations culminated in the twentieth century in the two great wars that consumed our elders. Our improving understanding of their environmental legacies is rapidly deepening. We are in the midst of the centennial of World War I. Environmental historians have joined the massive public reconsideration of that war; we have mobilised close to thirty participants in an ongoing discussion of the environmental dimensions of that war around the world.


8 The first conference was a sixteen-paper symposium at Georgetown University in Washington, DC, in August 2014. These papers are being revised for publication.
A few participants focus on environmental ravages in battle areas, especially the long-term soil disruptions in the Western trenches, and the equally devastated Isonzo Front between Italy and Austria. But in general the participants have been reluctant to focus on the immediacies of conflict. In this there is great potential for collaboration with military geographers—a bridge still to be built. Instead we have primarily attended to events and institutions far from the front, as we ask how global the First World War actually was, or more specifically in what dimensions it was global. Military movements were regional, not global. But one major emerging theme is the near-global extraction of natural resources, especially forest products and minerals, including India’s forest products, Malaya’s tin, global copper extraction, and the rise of petroleum as coal’s partner in the changing energy basis of warfare. In all, these studies probe the environmental implications of the rise of the military-industrial-governmental complex, well before World War II. The rapid rise of the chemical industry in Europe and the United States was a central feature of this evolution, most notoriously for the birth of chemical warfare, but on a much broader industrial base than that.

A critically important dimension of the wartime realities was interruptions to the global food economy that had developed in the nineteenth century. The increasing reliance of many societies on imported foods was severely disrupted by wartime maritime trade, such as the cutoff of grain from India to the Middle East. This resulted in famines in the Middle East and severe shortages elsewhere. This food crisis (in war-torn Europe as well) was closely linked with environmental causes, including a major locust plague in the Middle East in 1915 and exceptionally brutal winters in northern latitudes.

The sudden disruption of maritime food trade was closely linked to the trans-Atlantic movement of critical natural resources during the war, food, timber, minerals, even horses. After 1918 construction lumber was shipped to Europe from British

11 Several papers from the 2014 Georgetown conference contribute to this discussion, and are in process of publication.
Columbia, Washington and Oregon, the pine forests of the southeastern United States, and even the araucaria woodlands of southern Brazil. This was highly profitable business for major timber products corporations, such as MacMillan-Bloedel out of Vancouver, putting them in the position to dominate the industry thereafter, but it was severely damaging to forest ecosystems. \(^{13}\)

The war also precipitated major shifts in the relations among imperial systems, including the trans-Atlantic competition between the vulnerable British Empire and the rising American imperium in Latin America. American banks and corporations established roots around Latin America that partially displaced British interests, shifting intercontinental sources of environmental change from London to Washington and New York. \(^ {14}\)

Complementing the sudden, massive shift of fiscal resources, the European Allies imported copper and nitrates from Chile, and wheat and beef from Argentina and southern Brazil. \(^ {15}\) There are many indications that Latin America experienced considerably more environmental pressure than the mainstream literature has previously identified.

The environmental legacies of the First World War thus reached across every continent; they were to be intensified in the Second World War. They were closely linked to the political, economic and social upheavals that emerged by 1918. After all, the Versailles Treaty did not end the fighting everywhere, which continued unresolved for several more years in various countries, especially where three great empires—the Russian, Austro-Hungarian and Ottoman—had collapsed and their successor regimes were struggling to be born. It is thus something of a misnomer to label 1918-1937 as the ‘interwar’ years. In the discussion among environmental historians, attention is turning to those years, both in the inter-continental operations of the military-industrial Powers and in the local and regional wars of every continent except North America.

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Second World War

For some years environmental historians have been concentrating major attention on the environmental dimensions and legacies of the Second World War. A group in Finland published a major book on that war in Europe (in Finnish); this led to a symposium in Helsinki (in English), where we expanded our coverage to global. Here, as for the First World War, several studies focused attention on severe disruptions of food production and agricultural landscapes, which (together with natural phenomena such as the severe winter of 1945-1946) are environmental as well as military, political and social history.

Most studies until now have centered on rural landscapes. It’s almost self-evident that urban environments have suffered extremely in the industrialised wars of the past century: destruction of buildings, water and power supply, public health crisis, and then post-war reconstruction. Until now the sub-field of urban environmental history has hardly spoken on these issues, but this is beginning to change.

For full coverage of major wartime regions, just as for the First World War, there is still little coverage of eastern Europe. There are compelling reasons for this state...

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of affairs. During the war there was massive destruction of archives, and then the Cold War shut down collaboration between East Bloc scholars and the rest of us. That legacy still constrains us, though we now have active colleagues in St Petersburg and Prague, and the next biennial Association for European Environmental History conference will be in Zagreb in 2017. For that conference we have begun designing research on the environmental aspects of warfare in the southern Balkans, up to and including the 1990s.

One of the most appalling reverberations of the horrors of the Eastern Front is reflected in studies of the massive movement of refugees across war-torn Europe. The complex environmental dislocation (both rural and urban) that accompanies war's refugee treks is only now emerging, but it is difficult to see beyond the crushing human drama to the environmental distress that intensified it. For the study of refugees and environment, we have turned to Asia, specifically China and the Indian subcontinent.

Micah Muscolino recounts the turmoil in China. Under attack by Japanese forces in 1938, the Kuomintang army systematically destroyed the terraces of the Yellow River, slowing the Japanese advance for several crucial months by flooding the rice lands of Henan province. Nearly a million of their own people drowned, and some four million fled westward, many landing in the Huanglongshan hills of Shaanxi Province, where they reduced forest cover on the steep, erosion-prone slopes to grow desperately needed food.


The flooded rice terraces of Henan were finally repaired by 1951, an important factor in establishing the legitimacy of the new government in Beijing. The longer-term environmental condition of Henan province returned to roughly its prewar state. But the depletion of forest and soils in the western mountains was more permanent—though it has remained a benefit to the displaced population that settled there. (In other words, as this instance illustrates, the environmental history of mass conflict is far more complex than simply a simplistic story of inexorable degradation.)

Assam and Northern Burma

The effort of Western Allies to stop the blitz advance of Japan through Southeast Asia toward British India centred on the eastern Himalayas: northeastern Assam and northern Burma. As early as 1937 the British military, with a labour force of 200,000 Burmese and Chinese workers, built the Burma Road 717 tortuous miles from Lashio in the east across Yunnan Province to Nationalist headquarters in Kunming.

The Japanese advance into Lower Burma in early 1942 created a mass refugee movement away from southern locations. Many went by the coastal route to Bengal. Some of them then turned northward into the Chittagong hills, where they carved survival settlements out of the hill forests. Others landed in Dacca and Calcutta, where they intensified urban environmental stress for years afterward.

The largest refugee masses from Lower Burma fled northward into the hill region along the border with Assam. Throughout that year hundreds of thousands struggled across the tribal zone of the monsoon-flooded Hukawng Valley, carving new routes where none had existed before. As they left trails of abandoned goods, many thousands died. An ecologist’s report fifty years later revealed that the forest had largely recovered, but junk still littered the refugees’ routes. Those who survived the trek into British-defended Assam attempted to survive by settling in sparsely populated hill forests or joining the workforce for the Allies’ counter-attacks.

Before 1942 was out, British and American forces were building rail lines up the Brahmaputra valley to new airstrips for US planes to fly eastward ‘over the Hump’ of the Himalayas to Kunming, the wartime capital of the Kuomintang. The Allies also built the Ledo Road 300 miles from Assam to northern Burma, slashing through almost impenetrable jungle. By 1944 the tide turned; Japanese forces in Burma were

22 This tumult left many Muslims on the Arakan coast; this is the Rohingya population that is under severe pressure from Burmese Buddhists in that region today.
defeated by early 1945. Taken together, the new transport lines began the post-war population flow from lowlands into higher, more forested country. The refugee fluxes in the years since Burma’s independence in 1948 are beyond this survey.

The wartime disruptions led in a politically complex but direct route to the Partition of British India and the creation of Pakistan in 1947, when neo-wartime conditions created an exchange of some fifteen million refugees in the new countries. These were considered to be internal migrations within the two newly independent states, so the fledgling international institutions did not play central roles in refugee resettlement, or even in monitoring possible environmental disruptions. In the east, trends that began in the Second World War intensified. Refugees, mostly Hindu, fled newborn East Pakistan (which became Bangladesh in 1970) into urban areas of West Bengal, especially Calcutta, since little rural land was available for new settlement.

In the western reaches of the subcontinent, the enormous bloodshed and refugee exchange caused surprisingly little environmental disruption in agricultural regions, as the civil administration (particularly on the Indian side of the new border) undertook an effective resettlement of Sikh and Hindu influx in lands deserted by Muslims. (Refugee resettlement in urban areas, especially eastern Punjab and the Delhi area, is a separate story.) Farther east, many Punjabi refugees were settled in government forests along the Himalayan foothills, the Siwaliks, transforming forest zones into highly productive agriculture.

In Indonesia and elsewhere Japanese forces extracted essential natural resources with utmost intensity. The teak plantations of Java and forests of Sumatra were logged as rapidly as the occupying forces could coerce labour for the work. Similarly, the rubber plantations of Sumatra were severely damaged. In Malaya after the forced departure of the British, a similarly erosive story unfolded. In the Philippines the highly developed forest products industry, including sawmills and infrastructure, was badly disrupted, and the system of rotational timber harvesting that had been

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23 There is a vast literature on the human dramas of Partition, but little of it on Bengal in the east or in the western border regions of the subcontinent says much about environmental dislocation.


25 See the work of Peter Boomgaard, such as ‘The Long Goodbye? Trends in Forest Exploitation in the Indonesian Archipelago, 1600-2000’, *Muddied waters; Historical and contemporary perspectives on management of forests and fisheries in Island Southeast Asia* 200 (2005), 211-34.
created during the American colonial years was summarily ignored, leaving both badly damaged forest cover and dangerously weakened forest management systems for the country to inherit at independence in 1946.26

The war swept back and forth across the Pacific islands; today’s emerging environmental analysis of the islands is anchored in Judith Bennett’s work.27 Details of the damage appear in many purely military studies as well. Several fine-grained studies of ecological damage resulting from campaigns on and around individual islands are now in preparation. From Australia’s perspective a primary focus is on New Guinea, especially the Kokoda Track.

As we gain greater understanding of the environmental dimensions of both great wars, many studies continue into the immediate postwar times and beyond, into the Cold War. After all, warfare did not stop everywhere in 1918 or 1945, but continued unresolved in many places, for years thereafter, in Russia, Ireland and elsewhere after 1919, and in Greece, China, Southeast Asia and elsewhere after 1945.

**Cold War Regional Wars**

Study of the Korean War’s environmental legacy is in its infancy. In contrast, the environmental damage of the Vietnam War has attracted intense international concern ever since the American use of chemical weapons became well known in 1969. The ecological transformation of the Mekong Delta had begun at least a half century earlier under the efforts of French colonial engineers to turn the deltaic marshes into a vast rice-producing region.28 The impact of American operations in the decade that ended with the war’s formal end in 1975 has been studied extensively, as its long-term environmental legacy has become clearer.29

26 See Greg Bankoff’s studies, such as ‘One Island Too Many: Reappraising the Extent of Deforestation in the Philippines Prior to 1946’, *Journal of Historical Geography* 33 (2007), 314-34.


Although global war between major Powers has been avoided since 1945, under the umbrella of Great Powers’ interests and competition, since then there have been many ‘small wars’, insurgencies and counter-insurgency campaigns, most of them fueled by the global arms trade (both legal and illegal). Very few of them have been analysed for their environmental costs, as a major dimension of the deterioration of natural environments in many parts of the world. Military planners have taken into account conditions of environmental stress as causes or intensifications of conflict in many ways. And civilian research institutes monitor the environmental causes and settings of violent conflict in invaluable detail. However, there has been far less study of the impacts of small wars, which often contribute to a descending spiral of ecological deterioration, societal stress and open conflict. Many of these conflicts have been categorized as ‘resource wars’, centring on struggles for control of natural resources that have high value on the world market.

There has been a wide range of civil wars in Africa during and after the Cold War years. They are analysed in an exhaustive literature. Various writings point to the environmental causes and settings of conflicts, but they include only tangential consideration of environmental impacts and legacies.

**Rwanda and Eastern Congo**

In contrast to the largely semi-arid and desert areas in the south, another tragedy unfolded suddenly farther north, as the violence in the south was abating. The Great Rift zone of eastern Africa is a region of rolling hills, rich soils, and plentiful water. Rwanda emerged from German and then Belgian colonial rule in 1962, earlier than Angola and Mozambique, and was not entangled in the racial policies of apartheid.

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30 Among others, two leading research institutes are the Stockholm International Peace Research Institute (SIPRI) and the Peace Research Institute of Oslo (PRIO).


South Africa. But it suffered deep fault lines between its two major ethnic groups, the Hutu and the Tutsi. Both European nations ruled through the Tutsi kings and perpetuated a pro-Tutsi policy. The Hutu population revolted in 1959, massacred numerous Tutsi and established an independent, Hutu-dominated state in 1962.

After almost thirty years of competition (at times ethnically polarised, but not entirely) the Tutsi-led Rwandan Patriotic Front (RPF) launched an attack in 1990. In early 1994 a genocidal campaign by extremist Hutus massacred nearly a million Tutsi and moderate Hutu people. The RPF offensive quickly responded against the Hutus, who fled—over 2 million of them—into Tanzania and the Kivu region of eastern Zaire.33

The contested zone of this conflict is an area of forested mountains and interior basins in the eastern reach of the Congo basin, the second largest tropical rainforest in the world, after Amazonia; huge species diversity. As one authoritative commentator has written, ‘The assessment of the environmental impacts of refugees has been a neglected subject. In environmental terms, all the recent emphasis has been on environmental degradation which may have forced some people to become “environmental refugees” and not on the environmental impacts created by the refugees themselves.’34

The Ruzizi plain of South Kivu province and its surrounding hills and forests already had social conflicts resulting from relative population density and scarcity of cleared farmland and pasture. Relief organised over the following two years by the United Nations High Commission for Refugees and other agencies developed orderly operations, providing the refugees with minimal security and survival resources. But the turmoil resulted in total removal of trees and related vegetation in a steadily expanding ring around the settlements, to provide building materials and fuelwood for the refugees’ cooking needs. Some settled in Goma city in North Kivu and Bukavu city in South Kivu, adding to pressures in surrounding area. The largest camps were in the North; in camps especially around and in buffer zone of Virunga National Park, deforestation pressures penetrated into the park, as well as creating a danger to wildlife (most dramatically, gorillas).

33 This summary does not address the environmental stress linked to Rwandan refugees in western Tanzania, where the situation was less chaotic and violent, and had far less international publicity than in eastern Congo.

New roads to service the camps added to regional environmental pressures, long after refugees returned home to Rwanda. Severe local soil erosion and mudslides contributed to changing land use patterns. Some plantations of fast-growing trees were established around camps and towns, to provide fuelwood and stabilise soils. Water supplies, sanitation, and waste disposal were a constant struggle, as in many refugee resettlement locations. There was no ground water near some camps. So Doctors without Borders transported water from considerable distances, which averted major contamination or disruption of local water supplies.

In some camps, on hard volcanic rock, digging pit latrines was almost impossible. Heavy rainfall spread excreta onto the surface, where health risks were severe. Some solid waste was hauled away to other locations. Solid and medical waste was dumped in many improvised locations. Seventy to eighty non-governmental organisations were at work, but coordination was extremely difficult.

There was less immediate pressure on Kahuzi-Biega National Park in South Kivu province, but over the following decade poachers (some of them attracted to the area by the short-term refugee crisis) reduced the park’s elephant population by 95% and gorillas by 50%.35 Camps appeared around Bukavu on steep slopes with alluvial soils. With no terracing, they invited severe soil erosion. ‘The absence of terracing and proper drainage channels and almost near total destruction of vegetation on these slopes means serious erosion and the formation of ever deepening gulleys with each heavy rainfall.’36 450,000 refugees arrived in 1994-1995, severely hampering park management; but they were driven away in 1996 by the Congolese civil war. Speedy departure of international aid operations that year left local people facing severe food shortages.

Most camps were gradually cleared within several years, leaving many neglected scars where they had been during the worst of times. Political and social conditions became much safer at home. In Rwanda, in the aftermath of the nightmare, there has continued to be low-level turmoil over land rights in densely populated rural areas, but the chaotic years have been followed by one of Africa’s highest rates of economic growth and low incidence of social violence. In eastern Congo, civil war has continued until today, partly related to interventions by adjacent countries during the turbulent refugee crisis. Thus there is continuing, even expanding ecological stress, but that is beyond the focus of this paper.


Guatemala: Mayan Refugees

Moving across the Atlantic we find an example of a civil war in a region-wide conflict exacerbated by the context of the Cold War: a refugee crisis in Central America, this one the civil war in Guatemala, which lasted thirty-six years, 1960-1996. It was a war between the Guatemalan government’s armed forces, supported by the United States military, and ethnic minorities, especially several Mayan sub-groups, in central highlands and northern Peten lowlands, as well as Ladino peasants. What resulted included many clearings for villages and their surrounding farmlands in the tropical forest, a pockmarked reduction of the forest.

The background political chronology can be said to begin with the 1954 coup against the democratic Arbenz government. For decades thereafter a series of military strongmen led the regime. In 1960 brutal army violence began against leftist guerrillas and their suspected sympathisers in forested regions. The Guatemalan government charged that the guerrillas were supported by Moscow and Havana. In 1982 General Rios Montt took power and intensified a state of siege, terror against rural communities in the highlands, which lasted with intermittent pauses until the mid-1990s.

Over the years of violence, refugees from the hills and northern lowlands moved to urban centres or fled northward into Mexico and the United States beyond, or into public (forest) lands in the hills. There was some depopulation of Peten’s northern forest and agricultural regions, resulting in pock-marked pressure on forest havens, plus stress between migrants and ethnically different local hill people. Studies of the environmental geography of these movements are far from complete; our understanding of the environmental costs of that debilitating conflict is still impressionistic.

Many others crossed the poorly defined border into Chiapas, Mexico’s southernmost state, 95% of them indigenous. UNHCR counted 120,000 by 1983. Many Mayan peasants had always crossed the region routinely, though not as hounded refugees until then. Guatemalan army units pursued them into Chiapas, claiming that they were terrorists or terrorist supporters. The Mexican army began guarding the border and clearing forest. Roman Catholic priests and nuns organised assistance to refugees in some thirty camps. The Mexican government was reluctant

to support the refugees, fearing a flood of additional arrivals. Camps were in remote forest regions where there was little outside support. They faced notoriously dismal conditions: malnutrition, improvised shelter, disease, and accumulating waste. Pressure on surrounding forests increased, and the Mexican army cleared a wide swath of forest along the border as a security zone. Mexico’s hastily organised refugee commission, Comision Mexicana de Ayuda a Refugiados (COMAR), did its best to channel aid by UNHCR, the International Red Cross, church organisations and other NGOs, flying more than ten tons of corn, beans, and rice daily into the remote camps to feed the refugees. Estimates are that some 200,000 people fled or died during the war years.38

Post-war Reconstruction

Environmental historians are concerned with both immediate impacts and the longer environmental legacies. We are beginning to emphasise that the turmoil of wartime has to be assessed in tandem with reconstruction in the immediate aftermath of conflict. Rebuilding societies, cities, industry and agriculture in the late 1940s was a task just as urgent and complex as the war that it followed.

Europe’s immediate struggle to rebuild has been chronicled many times. China was equally devastated; four more years of civil war made stabilisation and reconstruction even more difficult. Japan’s recovery was faster, but rebuilding its cities required importing massive amounts of wood.39 In other words, behind this reconstruction lay a nearly invisible factor, the intensification of resource extraction to provide reconstruction materials. Timber products are a clear example of the environmental costs of reconstruction materials.40 Post-1945 reconstruction timber for Japan was recruited from the wet tropics of Southeast Asia and coniferous forests of the northeast Pacific (from Alaska to Oregon). Once again the major corporations became long-term extractors and managers of the forests of their source areas. This centralisation of power had complex and variable consequences for forest products

38 For later years and the post-1996 truce, sources will include Anthony Andersson’s PhD dissertation in progress at New York University.
40 Forest history as a discipline is older than the broader subject of environmental history, but it remains a central component of the wider field.
extraction and sustained yield forest management. The long-term legacy of this type of wartime shift of policy and infrastructure is exemplified in Mexico, where the wartime intensity of timber extraction ended a policy of local management, replacing it with a system of larger-scale corporate control of timber extraction.

**Rearmament: The Cold War**

By the summer of 1945 the outlines of what became the Cold War were already becoming visible to the alert public. They included permanent military/industrial/research complexes. For environmental history, this story must begin with nuclear weapons and the nuclear energy complex. Concerning the ecological impact of nuclear weapons testing, the recent work of Mark Merlin and Ricardo Gonzales at the University of Hawaii has brought together the technical record for the Pacific islands most effectively.

Regarding the long-term radioactive ravages at production sites, many studies of radioactive pollution in military sites have been published. One of the most penetrating is Kate Brown’s recent book, *Plutopia*, which compares the plutonium complexes of Hanford, Washington and Cheliabinsk in the southern Urals.

By the 1980s a turnaround began, leading to what we now know as the ‘greening of the military’, beginning with the cleanup of severely polluted installations, in response to the massive pollution and degradation of lands and waters that had happened in the early Cold War years. In the United States the creation of the Superfund by Congressional legislation in 1980 gave a budgetary basis for the work

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to expand. A major portion of that multi-billion dollar fund has been spent on military cleanup, and the task is still many years from possible completion.  

As environmental historians we also recognise other aspects of the military’s green work in all industrial countries, which has roots as far back as the 1930s. Managing military lands to balance their military functions with their environmental and cultural values has created innovative strategies, partly in response to frequent confrontations between the military and aboriginal peoples. In the United States a leading example is the Center for Environmental Management of Military Lands, at Colorado State University, which is largely funded by the Pentagon and provides civilian consulting services from grassland, wetland and forest ecologists, wetland managers, and others including a council of Native American cultural advisors. In Canada the increasing political strength of the First Nations has been even more significant for the military command in Ottawa.

Globally, wildlife and biodiversity have often suffered in the course of war, but in some locations the wartime reduction of humans in wildlife habitats has resulted in a resurgence of flora and fauna, especially game species and their associated communities. The oceans too have experienced major impacts on marine species during twentieth-century wars.


47 For details, see its website <cemml.colostate.edu>.


Impacts on Global Climate

The most fundamental dimension concerns the contribution of military operations to fossil fuel depletion and increase in atmospheric CO2 emissions. There has been some discussion of the high percentage of aviation fuel that the US and other Air Forces consume, though it is difficult for civilian researchers to gain full access to the data. There is an important irony here, regarding military research budgets. The capacity of military funding to pay for long-term research on clean fuels makes it possible for the ‘greening of the military’ to play a major role in designing innovative technologies that lead the civilian economy into the post-fossil fuel era.

A contrasting issue concerns control of scarce water resources, as a key to environmental and military security, in our collective response to warming climate. Aaron Wolf and others have provided important studies of the strategic risks underlying conflicts in the Middle East. The region’s ‘water wars’ have not yet been the immediate catalyst of open conflict, but water rivalries lie just below the surface of the region’s turbulence, and increasingly inadequate supplies of fresh water are likely to make the search for peace even more difficult in the future.

A major example of present-day strategic planning around water issues comes from India. At the Institute for Defence Studies and Analyses there is a major focus now on the likely consequences of the melting of the Himalayan glaciers for the waters of the Indus and Brahmaputra rivers which India shares with Pakistan, Bangladesh and China.

It is all coming down to the question of how we are contributing to and adapting to climate change. We have the beginnings of a link between the environmental dimension of military history and studies of climate change, specifically work in progress on the military use of fossil fuels in the industrial era, as a proportion of total fossil fuel consumption, and also as the creator of new corporate and governmental institutions. Climate history as a multi-disciplinary subject in itself is now rapidly maturing. This multidisciplinary network’s activities are tracked on its impressive website <climatehistorynetwork.com>.

This is the ultimate dimension of concern for both environmental and military analysts. It is central to the discussion of global environmental security.


The Tyranny of Distance: Geo-strategy and the New Guinea Campaign of 1914

Robert Stevenson

Introduction

On a tropical September day 101 years ago a tired and grimy English-born naval reservist fired the first shot, initiating Australia’s first battle of the Great War on a dusty track near the village of Bita Paka on the northern tip of the island of New Britain.1 At the time New Britain formed part of Germany’s expansive Pacific territories. Fighting in thick bush against a fleeting enemy, mostly untried sailors and novice soldiers fought a short, vicious action that left six of their number dead and took the lives of a single German soldier and at least 30 of their Melanesian police-soldiers. As a result of that action all of German New Guinea subsequently surrendered and Australia achieved a long-cherished goal of ridding the islands to its near north of a hostile colonial power. Back in Australia nobody knew of these momentous events as the distance was great and the communications slow.

Reports of the fight and losses on New Britain were published in the Australian newspapers three days after the action.2 When the news was made public the nation rejoiced at its first wholly Australian victory. For most Australian-Britons it was


2 ‘Capture of Germany’s Seat of Government in New Britain’, Sydney Morning Herald (SMH), 14 September 1914, 5.
doubly sweet as simultaneously the local German threat was removed and Australia gained a substantial sea-island buffer between its thinly populated northern shores and Asia’s teeming millions just over the horizon. In one day the young country garnered some 240,000 square kilometres of territory, or slightly more than the total landmass of the state of Victoria, enhancing its status as a ‘sub-imperial’ power.3

The action at Bita Paka occupies a pivotal place in Australian history. As a military operation it was not only Australia’s first victory of the war, it was also Australia’s first joint navy-army operation and it was the only campaign of the Great War that was planned and conducted wholly by Australian forces. At the geo-political level the skirmish at Bita Paka ushered in a new era in Australian international relations. It provided the impetus for Australia’s politicians to later assert themselves on the world stage, demanding an independent voice among the premiers of the old world. In 1919 the parliamentary leader of the young Commonwealth argued and won the right to retain those territories occupied in 1914. He advanced the claim, so he said, on behalf of Australia’s 60,000 war dead, the first of whom fell at Bita Paka. Brazenly, and in the face of world opinion and against the wishes of its imperial benefactor, Australia’s politicians would place their country’s geo-strategic interests first as they thrust Australia’s frontier forward to the very edge of the equator.4

At this point it is worth explaining what is meant by the term ‘geo-strategy’ as academics, theorists and practitioners have not agreed a standard definition for the term.5 For the purposes of this paper geo-strategy is considered a subfield of geopolitics guided principally by geographical factors as they inform, constrain or affect political and military planning, particularly the latter. As with all strategies, geo-strategy is concerned with matching ends and means, in this case a nation’s resources with its geo-political objectives whether they are local, regional or global. Strategy has long been recognised as being symbiotically intertwined with geography, as strategists Colin Gray and Geoffrey Sloan observe:

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3 The term ‘sub-imperial’ was coined by historian Roger Thompson to describe the local territorial ambitions of Britain’s dominions: Roger C. Thompson, Australian Imperialism in the Pacific: The Expansionist Era 1820–1920 (Melbourne: Melbourne University Press, 1980), 1.


geography can be described as the mother of strategy, in that the geographical configuration of land and sea, with respect to a state's strategic policy, or an alliance between states, can exercise a twofold conditioning influence: on locations important for defence, and on the routes and geographical configurations which favour an attacking force, be it on land or sea. Geography, it is worth adding, is pertinent at the tactical, operational, and strategic levels of conflict.6

The New Guinea campaign is an ideal vehicle for examining and testing this relationship.

Despite the significance of the 1914 New Guinea campaign the operation has been consigned to the dustbin of Australian history. In fairness the disinterest is easy to understand. The operations were small-scale, the fighting over in a few days, and the events were peripheral to the major powers. In a global war dominated by vast and bloody battles and expansive campaigns, the swift seizure of a handful of Pacific islands, at remarkably low cost, was always going to be overshadowed by later events, especially in Australia where the Gallipoli campaign stills holds a fascination that has not dimmed with time. Hence most general histories of the Great War, including those focused on Australia's participation, usually dismiss Germany's demise in the Pacific in a few lines. In spite of its obscurity the success of the Australian operations in August and September, coupled with the parallel deployments by New Zealand and Japan, quickly thwarted Germany's pre-war plans to disrupt British maritime trade across Australasia and stymied the Kaiser's strategic options in the Asia-Pacific region. Today with the benefit of hindsight the early string of Allied successes look like a foregone conclusion; be that as it may, the failure by Britain to deal equally swiftly with other geographically remote German colonial outposts demonstrates that matters could have been different.

This paper examines the imperative geography of the 1914 New Guinea campaign, examining the place of geo-strategy in the conduct and outcome of this affair and what this might suggest for the Australian Army today. To do this the paper is structured in three sections. The first section provides an outline of the campaign since it may be unfamiliar to some readers. The second section addresses some of the key geographical factors that shaped the conduct of the campaign at the strategic, operational and tactical levels of war. The paper concludes with a few observations of what the 1914 New Guinea experience might portend for the Australian Army in the

twenty-first century as once again the Australian Defence Force (ADF) invests heavily in an amphibious capability and realigns its focus on Australia’s archipelagic north.7

The Campaign

The New Guinea campaign played out in August and September 1914.8 The campaign was initiated on 6 August, the day after the British declaration of war on Germany, when the British Colonial Secretary, Lewis (later First Viscount) Harcourt, telegraphed the Australian and New Zealand governments, requesting they ‘as an urgent imperial service’ capture Germany’s Pacific territories and dismantle their network of wireless stations that might be used as a command and control network for the waging of commerce warfare.9 It is important to note at the outset that this operation was essentially a sub-contracted task from His Majesty’s government in London even though the operation served Australian and New Zealand strategic interests.

Map 1: Western Pacific 1914.
(Source: Courtesy The War With Germany, Oxford University Press, 2015).


9 Harcourt to Munro Ferguson, 6 August 1914, MP1049/1, 14/0307, National Archives Australia (NAA).
On the eve of war Britain, France, Germany, the Netherlands and the United States all possessed significant territories in the Pacific while Japan cast its eyes covetously southward. The main British Pacific territories were the self-governing Dominions of Australia, New Zealand and Canada, while Britain’s colonies included Singapore, the Malay Settlements, Hong Kong, the British Solomon Islands and Fiji. The Imperial German Pacific Protectorates consisted of two administrative divisions: the ‘Island Territory’ (north of the equator) comprising the island groups of the Carolines (Karolinen) including Yap, Pellew (today Palau), the Marianas (Marianen) except for Guam, which was United States territory, the Marshall Islands (Marschall-Inseln), and Nauru, which was also known as Pleasant Island; and the ‘Old Protectorate’ (south of the equator) comprising German New Guinea (Kaiser Wilhelmsland) along with the islands of the Bismarck Archipelago (Bismarck-Archipel) including New Britain (Neu-Pommern), New Ireland (Neu-Mecklenburg) and the Admiralty Islands (Admiralitäts-Inseln); and the German Solomons (Salomonen), including Buka, Bougainville and several smaller islands. In the eastern Pacific was the separate colony of German Samoa (Deutsch-Samoa).

The German presence in the Asia-Pacific region caused considerable anxiety for Australia and New Zealand, more so than the series of remote crisis in Europe during the late nineteenth and early twentieth centuries that saw a shifting array of alliances that eventually aligned the Triple Entente powers of Britain, France and Russia against the Triple Alliance powers of Germany, Austria-Hungary and Italy. Closer to home Australians viewed with deep suspicion Germany’s acquisition of permanent naval bases in 1897 when it seized Kiachao (today Kiautschou Bay) from China and established at Tsingtao (today Qingdao) a naval headquarters.

The immediate objective of the Australian campaign was Rabaul, the seat of government for the German Protectorate. Rabaul is situated on the northern end of the island of New Britain, on the north-western the tip of the Gazelle Peninsula. The most notable feature of the Gazelle Peninsula is the deep and spacious Blanche Bay and its inner anchorage of Simpson Harbour. Rabaul sits on the shores of Simpson Harbour, one the finest anchorages in the Pacific.


11 On Germany in the Pacific and its impact on Britain’s territories see John A. Moses and Christopher Pugsley (eds), The German Empire and Britain’s Pacific Dominions 1871–1919 (Claremont, CA: Regina Books, 2000).

12 Chief of the General Staff (CGS) to Department of Defence, 2 August 1912, B197, 1856/4/156, NAA.

Just outside the entrance to Blanche Bay on its southern extremity was Herbertshöhe (today Kokopo), the capital of the Protectorate before 1910, and in 1914 still its commercial centre. Eight kilometres further along the bay to the east is the village of Kabakaul (today Tokua). Bita Paka lies eight kilometres inland and south of Kabakaul. In 1914 the track linking Kabakaul with Bita Paka was narrow and unpaved and fringed near the coast by coconut plantations that quickly gave way to thick jungle. It was at Bita Paka that the Germans were in the process of erecting a wireless station to link similar facilities at Apia on Samoa, Yap, and Nauru, creating a chain of radio links across the Pacific to the naval base at Tsingtao. These stations would enable Germany to control their warships and radio interception would provide timely intelligence on the movement of friendly and enemy shipping.14

Germany’s growing naval power in the Pacific accelerated after Germany initiated a naval race with Britain early in the new century. By 1914 Germany had established a powerful naval squadron at Tsingtao and plans for its wartime employment were to attack merchant vessels, lines of communication and, to a limited extent, coastal fortifications, with the aim of halting exports of raw materials and foodstuffs to Britain via the Suez and Cape maritime routes. While Germany’s East Asiatic Squadron posed no significant direct threat to Australia or New Zealand, at least while Britain maintained its position of naval supremacy which was enhanced by the Anglo-Japanese Alliance of 1902, the German Admiralty did have war plans to attack Australasian merchant shipping and port facilities, believing that it was feasible and could be successful. Historian Peter Overlack offers a convincing case for a potentially serious threat to Australasian trade.15 As the Australian official history records: ‘There were many known reasons why she [Germany] should attack Australia’ in 1914.16

Vice-Admiral Maximilian von Spee’s East Asiatic Squadron comprised the modern armoured-cruisers His Majesty’s Ship (Seiner Majestät Schiff or SMS) Scharnhorst and Gneisenau, usually three the light-cruisers including SMS Emden, Leipzig (also spelled Leipsic) and Nürnberg, the ageing cruisers Cormoran and Geier, and various support vessels. These vessels made frequent tours and port visits as the jewel in Germany’s Pacific crown.17
With the outbreak of war and the severance of German cable communications to Europe, Spee was in a quandary over what to do. His standing pre-war plans directed him to attack Allied commerce and troop convoys and initially he did this with limited success when he unleashed *Emden* to attack shipping in the Indian Ocean. Spee, however, was wary of Allied naval strength, especially the Royal Australian Navy’s (RAN’s) modern battle-cruiser *His Majesty’s Australian Ship* (HMAS) *Australia*. Even before the outbreak of hostilities Spee aired his fears in a letter to his wife in which he declared that *Australia* ‘by itself, is an adversary so much stronger than our squadron that one would be bound to avoid it’. Hence rather dispersing and allowing his ships to hunt independently, Spee kept the bulk of his force intact and opted for a ‘fleet in being’ strategy to force the Allies to retain major assets in the Pacific searching for him while he kept the Allies guessing as to his whereabouts. With the entry of Japan into the war on 23 August he made the decision to take the bulk of his squadron and try to fight his way back to Germany. He would do this by sailing west across the Pacific, rounding Cape Horn and then steaming north through the Atlantic. It was a long shot but the admiral preferred to take his chances on the high seas in fleet battle where his tactics and the quality of his ships and crew could be tested rather than in commerce raiding which would ultimately doom his ships to destruction or surrender.

Germany’s land forces in the Pacific faced a similar situation in that they were isolated and numerically weak although they did have a significant home ground advantage. The only regular German troops in the Pacific were small bodies of marines aboard their major combatants and the larger garrison at Tsingtao, which was quickly besieged by Japanese forces. Unlike Germany’s African territories, where there were permanent colonial protectorate troops (*Schutztruppe*), the Pacific territories had to rely on locally recruited indigenous police (*Polizeitruppe*) commanded by a handful of seconded European officers and non-commissioned officers (NCO).

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In early 1914 the peacetime strength of the Polizeitruppe across the ‘Island Territory’ and ‘Old Protectorate’ amounted to 32 Europeans and 932 Melanesians. The largest contingent was based in New Guinea where there were two German army regular officers, 17 German NCOs and about 670 locally recruited police-soldiers. Most of the force, however, was divided between the nine government stations scattered across the various territories.21

Despite the geographical dispersion of Germany’s land forces, Governor Albert Hahl based at Rabaul, began a three-year program to improve the efficiency of his force. To accelerate his plans two regular officers were seconded from the army to the colonial office: Captain Carl von Klewitz and Lieutenant Georg Mayer. Klewitz had prior colonial experience with the Schutztruppe in 1904–1906 and 1907–1912 seeing action in German West Africa (today Namibia) during the Herero Rebellion where he was decorated. In January 1914 Klewitz and Mayer were sent to command the New Guinea Polizeitruppe and they arrived in March just as Hahl was returning to Germany.22

In the absence of Hahl, Deputy Governor Eduard Haber became acting governor and he continued with plans to reorganise and improve training. Klewitz was appointed chief Polizeimeister and pressed forward with Hahl’s aim of constituting the self-contained, centrally controlled expeditionary force of picked troops. Progress remained slow however, since the outlying district commanders were reluctant to send their best men to Rabaul, naturally preferring to keep them for local needs.23 And notwithstanding their efforts individual training standards remained low, especially marksmanship, and it was later reported that the police were generally ‘very poor shots and can only hit at very close range’.24 Klewitz claimed that only about 50 of his police had more than six months’ training, 70 had four months and the remainder less than a month having joined after hostilities were declared.25

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23 Rear-Admiral George Patey to Australian Commonwealth Naval Board (ACNB), 20 September 1914, 3DRL/0053, 6, AWM.
When war was declared the acting governor was also authorised to call up all men belonging to the reserves. Given the low number of German nationals in the islands it is not surprising that when the available reservists reported, Klewitz could muster only seven reserve officers and 52 NCOs and men to stiffen his 240 Melanesian police. These and the police contingent were armed only with small arms, mostly bolt-action, smokeless-powder Mauser rifles, and at Rabaul they held about 280 of these weapons with an ample supply of ammunition.26

Following the British request for assistance on 6 August there was a short pause before Australia agreed to take on the task of capturing the German territories. The hesitancy was not due to any reluctance to take on the job, since Australia had longed for just such an opportunity; rather the timing of the outbreak of war was inauspicious since Australia was in the midst of a Federal election and the members of the government were mostly absent from the temporary national capital at Melbourne. Despite this the Australian Squadron was swift to take action.27

In 1914 the RAN comprised a modern ‘Fleet Unit’ that with the prior agreement of the Australian government was to come under Admiralty orders in the event war.28 The Fleet Unit comprised a single Indefatigable-class battle-cruiser (HMAS Australia), two Town-class light-cruisers (HMAS Melbourne and Sydney), two older light-cruisers (HMAS Encounter and Pioneer), three Australian River-class torpedo boat destroyers (HMAS Parramatta, Warrego and Yarra), and two E-class submarines (AE1 and AE2), as well as various support vessels. Admiralty standing orders in the event of war envisaged the scattering of the major Australian combatants, with Australia to join the Hong Kong-based China Squadron and the modern light cruisers to be detached to operate on opposite sides of the Australian continent protecting trade. No standing plan existed for the capture the German territories or to destroy their communications.29

The Admiralty’s plans left Rear-Admiral George Patey in a difficult position. In 1913 Patey was appointed the first Rear-Admiral Commanding His Majesty’s Australian Fleet and under his tutelage, and with the assistance of a large number of

seconded Royal Navy (RN) officers and ratings, the RAN was formed and prepared for war. On the evening of 4 August Patey left Sydney bound for a northern rendezvous, the Admiralty having agreed to a change in plans due to the belief that Spee was in New Guinea waters. Once he collected his squadron Patey sailed for Rabaul where it was suspected Spee with *Scharnhorst*, *Gneisenau* and one of his light-cruisers might be sheltering in Simpson Harbour. Operating on intelligence from the Naval Board in Melbourne, which had been tracking radio signals from Spee’s flagship since 1 August, Patey expected a showdown with the German squadron. On the evening of 11 August Patey searched Simpson Harbour without success. In fact Spee was well north and at this stage of the war electronic warfare was still in its infancy and attempting to geographically locate ships at sea based only on the strength of their radio signals was problematic and often inaccurate by a wide margin.

While Patey intended to continue his search for Spee and destroy the German radio station at Nauru, on 13 August the Admiralty directed him to Noumea to take command of the New Zealand expedition bound for Samoa. Patey departed with *Australia* and *Melbourne* but left the rest of his squadron to cover the Australian expeditionary force forming in Sydney for the New Guinea operation. The Admiralty’s new orders imposed a three-week delay on the Australian task.

Meanwhile back in Australia on 10 August the Australian Chief of the General Staff, Brigadier-General James Gordon Legge, telephoned the military district headquarters at Victoria Barracks, Sydney, and directed the Commandant to convey an offer of the command of the New Guinea expeditionary force to Colonel William Holmes. The 51-one-year-old public servant, part-time soldier and decorated Boer War veteran was an obvious choice since he was the most senior and experienced militiaman in the state. Holmes readily accepted and was directed to have his force ready in six days.

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31 Patey, Operation Order Number 1, 7 August 1914, 3DRL/53, 12/5/41, AWM; Patey, letter to ACNB, 16 August 1914, 3DRL/0053, 4, AWM.
33 Patey, letter to ACNB, 21 August 1914, 3DRL/0053, 5, AWM.
The formation of the ANMEF was announced the same day Holmes accepted command. Repeating advice from the Department of Defence in Melbourne, *The Argus* ambiguously described the body as ‘a small mixed naval and military force for service within or without Australia’. Holmes had the challenge of creating a joint 2000-man naval and military organisation and given the time constraints he had to build his force simultaneously from top down and bottom up. He immediately set to work identifying his brigade staff and organising the army component which would eventually include two infantry battalions, one larger unit raised in Sydney and the other a smaller battalion formed from militia and rifle club volunteers from far north Queensland. Brigade troops included two machine-gun sections, a signals section and a medical detachment based on a field ambulance section commanded by Lieutenant-Colonel Neville Howse, VC. The navy took responsibility for raising a third battalion of naval reservists commanded by Commander Joseph Beresford, a 53-year-old former RN officer.

By 14 August Holmes’ force was assembled, allowing him to initiate a crash course in soldiering in the remaining four days before embarkation. Although volunteers were plentiful and keen, it appears that few of those selected for the army battalion were currently serving in the military. The official history notes: ‘Of the infantry enlisted comparatively few belonged to the existing units of the Commonwealth Military Forces’; while a contemporary account described how a ‘heavy sprinkling of the force consisted of men who had served in South Africa or in China, but the majority were the rawest recruits’. In contrast Beresford’s battalion comprised mostly current Australian naval brigade reservists and RN reservists.

At 1020 am on 18 August the army contingent left its temporary home at Moore Park and marched down to Circular Quay where they boarded ferries for Cockatoo Island. The naval battalion had already arrived by overnight train from Melbourne and was waiting. There they found their transport HMAS *Berrima* lying in Sutherland Dock. As the troops stowed kit and stores Holmes visited Customs House where he met the Minister for Defence, Senator Edward Millen, who expressed his dissatisfaction at the time taken to recruit, organise, equip, and embark the force.

35 *The Argus* (Melbourne), 10 August 1914, 8.
40 ‘Diary of Events’, 18 August 1914, Series 33, 1, AWM.
The minister’s peevishness was probably due to the fact that the New Zealanders had managed to upstage the Commonwealth with their expeditionary force, which had embarked six days earlier and was already bound for Samoa.41

Just eight days after Holmes was appointed but two days after his deadline, the ANMEF was assembled aboard Berrima. The 11,120-ton passenger liner had been commissioned as a RAN ship, refitted at the Garden Island naval base as an auxiliary-cruiser with the mounting of four 4.7-inch guns, and then converted to a troop transport. The ship’s ‘large holds provided fine troop-decks; lavatory and latrine accommodation was ample, and, though deck space for exercise was small, the vessel was well suited for the purpose’ even if the 1500 naval and military personnel travelled in less salubrious comfort than the ship’s 1100 peacetime passengers.42 Commanded by Captain John Stevenson RN, the 38-year-old naval officer was ‘dual-hatted’ as Berrima’s Commanding Officer and Naval Chief of Staff to Holmes.43

Berrima’s departure was delayed slightly as Holmes awaited orders from Melbourne but the ship sailed under sealed orders on the afternoon of 19 August. Proceeding up the Queensland coast to Palm Island, north of Townsville, along the way the transport was joined by HMAS Sydney and waiting at Palm Island was HMAS Encounter. Patey ordered a halt while he completed the Samoan mission. Although unwelcome, the enforced delay at least provided the opportunity for some collective training and acclimatisation as landing rehearsals were carried out on 24 August following which the companies involved went through the procedures for an attack in the thick tropical bush country. Further practice landings and training were carried out on five of the next seven days.44

On 30 August, the day Samoa was occupied without a shot being fired, Patey sent instructions to Captain John Glossop RN, commanding Sydney, ordering him to bring the convoy to Rossel Island in the Louisiade Archipelago, 200 kilometres

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41 The Samoan expedition was ready on 12 August, sailing three days later. The Australian public learned of Samoa’s capture on 1 September, just before polling for the Federal election commenced. ‘Extracts from War Diary of General Staff, Samoan Expeditionary Force’, 12–15 August 1914, Series 33, 62/3, AWM; ‘Tuesday, September 1, 1914’, Argus (Melbourne), 1 September 1915, 6; Stephen John Smith, The Samoa (NZ) Expeditionary Force, 1914–1915: An Account Based on Official Records of the Seizure and Occupation by New Zealand of the German Islands of Western Samoa (Wellington: Ferguson and Osborn, 1924).
off the south-eastern tip of Papua on 9 September. Accordingly *Sydney*, *Encounter*, *Berrima*, the supply ship *Aorangi*, two submarine tenders (*Protector* and *Upolu*), and the *AE1* and *AE2*, sailed for Port Moresby on 2 September, arriving three days later. There Holmes found the Steam Ship (SS) *Kanowna* with four companies of volunteers from far north Queensland whom Legge had previously advised him were to form his second army battalion.\(^{45}\) Although the reinforcement should have been a welcome boost Holmes was unimpressed considering their commanding officer ‘had very little Military training or experience and in addition, lacks personality and self-reliance’.\(^{46}\) To make matters worse there was no battalion staff and the improvised battalion was equally unprepared for campaigning when it came to uniforms and equipment. The troops had been issued with only one uniform, which they had been wearing for five weeks. Holmes considered sending the Queenslanders home but that decision was not his to make as Patey was in overall command of the expedition and he advised that he was reluctant to lose the additional contingent and so for the time being they would stay.\(^{47}\)

The joint task force set out from Port Moresby on 7 September. Glossop remained in temporary command of the convoy with *Sydney*, *Encounter*, the destroyers *Warrego* and *Yarra*, submarines *AE1* and *AE2*, *Berrima*, *Kanowna*, and *Aorangi*. The destroyer *Parramatta*, oiler *Murex* and collier *Koolango* were to follow. A few hours after leaving Port Moresby, as the convoy steamed east to the rendezvous, *Kanowna* suddenly slowed and hoisted a signal indicating the vessel was out of control. It transpired that the ‘firemen’ (or stokers) aboard the vessel, who were all merchant seamen, had not been consulted about their new mission and they refused to stoke the ship. As *Kanowna* lay dead in the water, volunteers among the troops took the place of the strikers. Hurried consultation between Glossop and Holmes saw quick agreement that *Kanowna* should be sent back to Townsville. The circumstances and recommendation were passed to Patey by wireless and he reluctantly concurred.\(^{48}\)

Patey, with *Australia* and two colliers, rendezvoused as planned with Glossop off Rossel Island. The commanders now had their first opportunity to discuss the task ahead face-to-face. Patey convened a meeting aboard *Australia* with Holmes, Glossop and Stevenson in what is probably Australia’s first high-level joint conference on

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\(^{45}\) ‘Diary of Events’, 2–5 September 1914, Series 33, 1, AWM.

\(^{46}\) Holmes, letter to Patey, 6 September 1914, Series 33, 9, AWM.

\(^{47}\) ‘Diary of Events’, 7 September 1914; Holmes, letter to Legge, 9 September 1914; both on Series 33, 1, AWM.

active service. The admiral explained that his orders provided for the occupation and garrisoning of Kokopo and Rabaul, which he aimed to do on 11 September. He also made it clear that he expected the landings to be a repeat of his August affair and he did not anticipate any resistance ashore.\footnote{Major F.A. Maguire, letter to Doctor F.A. Pockley, 7 November 1914, MLMSS 1092, State Library of New South Wales (SLNSW).}

Holmes back-briefed the admiral on his plan, which likewise was based on an assumption that there would be no German resistance. His intention was to employ the army battalion to occupy Rabaul, leaving Kokopo to the naval battalion. There were also to be two small naval landing parties put ashore to search for and occupy the two suspected radio stations, one believed to be six kilometres inland from Kokopo and the other eight kilometres inland from Kabakaul. The admiral approved Holmes’ plan and that afternoon all ANMEF officers mustered in Berrima’s wardroom to be briefed. The next day Holmes confirmed his verbal briefing with a one-page order.\footnote{Patey, Operation Order No. 3, 8 September 1914; Major F. Heritage, ANMEF Operation Order No. 1, 10 September 1914; both on Series 33, 1, AWM.}

Preceding the main convoy, \textit{Sydney}, \textit{Warrego} and \textit{Yarra}, with an embarked company of naval reservists, arrived in Simpson Harbour in the early hours of 11 September around 3.00 am. Once again the bay was found free of German vessels. Kokopo was occupied by a party under Australian-born Lieutenant-Commander John Finlayson RN and the British flag raised at 7.30 am. Sub-Lieutenant Charles Webber, commanding a half company of 25, men advanced inland towards the village of Toma in search of the first suspected radio site. Eight kilometres along the coast to the east at Kabakaul, \textit{Warrego} and \textit{Yarra} landed the second party at about 7.00 am under the command of Lieutenant Rowland Bowen RAN. His joint party of 40 men advanced inland in search of the second suspected German radio station.\footnote{MacKenzie, \textit{AOH}, Vol. X, 51–3.}

Opposing Bowen and the other landing parties was Klewitz commanding a total force of 61 Germans and 240 police. He deployed his forces in three main groups covering the key German assets. A reserve force of ten European troops and 24 Melanesian police was split to cover the approaches to temporary German capital at Toma. This body was codenamed ‘Samoa’. The main contingent of ten Germans and 140 police, commanded Mayer, was codenamed ‘Lüttich’ and covered Kokopo. Mayer was to offer no resistance to a landing and instead was to withdraw and await information about the Australian advance before counterattacking. Bowen’s party
faced the third force codenamed ‘Bebra’ under reserve Captain Hans Wuchert, comprising some eight Germans and 60 police. Wuchert deployed his troops in a series of positions along the road from Kabakaul to Bita Paka. His preparations included sandbagged trenches, wooden range pegs to aid marksmanship, and improvised command-detonated mines. Several small observation groups were also stationed on the coast to provide information on Australian movements.\(^{52}\)

In contrast, Bowen’s knowledge of the German dispositions and preparations was nonexistent. While Legge had provided Holmes with a broadly accurate assessment of the German forces available in New Guinea, Holmes chose to dismiss the threat of armed opposition to his occupation. Furthermore Bowen did not even have an accurate map of the German settlement nor did he know with certainty that there was a radio transmitter at Bita Paka. As the official history expressed it, part of German New Guinea’s defence in 1914 was its ‘unknownness’.\(^{53}\)

As the Australian operation began the Germans were quickly appraised of the unfolding situation. At about 4.00 am Mayer received news that three warships had entered Blanche Bay. Soon after 7.00 am he learnt that the two destroyers had arrived off Kabakaul and landed a party of 30 men who were moving inland along the Bita Paka road. Based on these reports Mayer moved ‘Lüttich’ to Takubar, a village midway between Kokopo and Kabakaul. Splitting his force, Mayer led Sergeant-Major Maurice Mauderer (also spelled Maurder) and 50 police down a rough bush track that ran southeast and intersected the Bita Paka road. With the right timing he would arrive to strike the rear of the outnumbered Australians as they advanced along the track towards the wireless station.\(^{54}\)

Bowen pushed his force along the track that led south until he came upon an intersection where the track crossed the main road running east towards Cape Gazelle from Kokopo. At the crossroads stood a small trading store and on questioning the Chinese owner Bowen received his first piece of usable information, learning that the narrow track heading inland did in fact lead to a wireless station about eight kilometres away.\(^{55}\) Leaving a small group behind to act as ‘connecting files’ to maintain communications between himself and the offshore destroyers, Bowen set off.\(^{56}\)

\(^{52}\) The two mines were iron pipes filled with dynamite, buried beneath the track and set to fire remotely by an electric firing-key. Patey, letter to ACNB, 20 September 1914, 3DRL/0053, AWM; MacKenzie, AOH, Vol. X, 48–9, 62, 73.

\(^{53}\) Jose, AOH, Vol. IX, 59.


\(^{55}\) Major P. Molloy, ‘Report to Navy Office’, 20 April 1915, 3DRL/7734, AWM.

Bowen’s advance along the jungle-edged road was covered by scouts pushed ahead and out on his flanks. Writing six months after the event he described how he fully expected trouble and immediately increased the distance between the scouts, reinforced the firing line, and cut the telephone line that followed the wireless station road. By 9.00 am Bowen’s party had advanced about 1800 metres when his right flank group, led by Petty Officer George Palmer, discovered a group of three Germans with about 20 Melanesians. ‘This is where the fighting began’, recalled Able Seaman Sidney Staines, with ‘shots being exchanged as fast as we could put them in our barrels.’ ‘Bullets were buzzing all around us … I was expecting to drop anytime at this stage, so we got together and started firing volleys.’ One German, Sergeant-Major Mauderer, was wounded and captured and he called on his men to cease firing.

Mauderer was taken to Bowen who quickly assessed the situation and realised that he had very nearly been ambushed. Using his initiative, although in contravention of the rules of war, he pointed his pistol at his prisoner and forced him to walk up the road calling on his comrades to surrender under the false claim provided by Bowen that his party was closely supported by 800 more troops. The subterfuge worked and in the ensuing confusion Wuchert (Commander ‘Bebra’) and Mayer (Commander ‘Lüttich’) were both captured, depriving the defenders of two important commanders, while several marked maps fell into Australian hands, providing a significant intelligence windfall.

Realising that his advance was going to be contested Bowen sent the prisoners back to the Kokopo under escort and requested urgent reinforcement. Bowen continued the advance another 500 metres until he came upon a manned trench dug across the road, which was covered by trenches on either side of the track and concealed in the brush. Unbeknownst to Bowen the position was manned by nine Germans and twenty police under the command of reserve Lieutenant E.E. Kempf.

When Bowen message reached the offshore destroyers his message was passed to the *Australia* while all available men from the destroyers were landed. The volunteers, comprising 59 sailors, were under command of Lieutenant Gerald Hill RNR from

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57 Bowen, ‘Report to Naval Secretary’, 3DRL/7734, AWM.
58 Able Seaman Sydney Edwin Staines, diary, 1DRL/0577, AWM.
HMAS *Yarra*. ‘No time was allowed to don field service kits’, Hill recalled, as ‘men just tumbled into the boats in the clothes they happened to be wearing at the time (i.e. flannels and duck trousers), arms and ammunition passed in at the same time and away they all went for the shore.’ The scratch force was armed with no more than fourteen rifles between them and the remainder carried pistols and cutlasses and a few with nothing more than timber clubs procured on shore.

Bowen continued to work forward until around 9.15 am when the situation took a turn for the worse as the Australians suffered their first casualties. The first hit was Able Seaman William ‘Billy’ Williams. Despite receiving immediate medical treatment from Captain Brian Pockley, the army doctor accompanying the party, Williams died later that afternoon aboard *Berrima*. Pockley, who gave his Red Cross armband to one of the naval assistants, was fatally wounded tending Williams. Soon after Hill arrived and the two naval officers planned to assault the German trench that blocked their way. As they manoeuvred Bowen was wounded ‘as a bullet pierced his sun helmet striking him high above the temple, and tearing a furrow through the scalp right to the back of the head’. Command fell to Hill and he sent for more men.

In the meantime Commander Beresford was in the process of landing further reinforcements at Kabakaul, comprising another two naval companies with a machine-gun section. Lieutenant-Commander Charles Elwell, RN was sent forward. Meeting up with Hill at about 1.00 pm the pair were soon engaged at the German trench. The Australians, under Elwell’s overall command, launched a double envelopment through the jungle attacking both flanks of the German position. The attack succeeded despite suffering casualties including Elwell who was killed leading a bayonet charge with sword in hand. The defenders surrendered, including Kempf. During the advance the Australians uncovered and defused one of two German mines buried under the road.

Hill pulled back towards Kabakaul with his prisoners where he met Beresford. The naval commander demanded Kempf’s unconditional surrender and with reluctance the German agreed, signing a quickly prepared surrender document drafted by Captain Reginald Travers, the brigade intelligence officer. Lieutenant Thomas Bond, RANR, commanding the remaining naval company, was ordered to take Kempf and a German interpreter as interlocutors back to the trench to take the surrender of the

61 Lieutenant G.A. Hill, memoire, 1DRL/0351, AWM.
63 Burnell, *Australia Versus Germany*, 111.
65 Ibid., 60–4, 73.
remaining defenders and then secure the radio station. Bond, accompanied by Travers and some 30 sailors and a machine-gun section, headed back along the track.66

Reaching the trench six Germans and twenty police reluctantly surrendered to Bond. He then advanced nearly three kilometres before he came upon a second trench manned by three Germans and twenty police who also surrendered. An attempted break-out by some of the prisoners led to a violent mêlée in which one German, Sergeant Franz Ritter, and at least a dozen police were killed and three Australians were hit, one fatally.67

After clearing the position Bond decided it was prudent to consolidate. Posting his men at the second trench he took a small group forward to take the German surrender. Setting off down the road accompanied only by Travers, Kempf and a German-speaking member of the machine-gun section, he encountered another group of eight Germans and twenty police at a police barracks just short of the radio station. There was a tense moment when the Germans appeared on the brink of offering resistance until Bond rushed them and disarmed the group. Adding them to his haul he marched the group to Bita Paka and secured the deserted radio station. By 7.00 pm it was mission accomplished. Casualties on both sides during the action were relatively light. The ANMEF suffered six dead and four wounded. The Germans fared worse with one German NCO and 30 police killed, one officer and ten police wounded, and 19 Germans and 56 police captured.68

By the end of 12 September the initiative had passed to the Australians with Rabaul and Kokopo occupied, and yet the Germans refused to capitulate. On 14 September Lieutenant-Colonel William Watson with half his army battalion, a machine-gun section and a manhandled naval 12-pounder advanced on Toma on a ‘shock and awe’ mission. A captured map provided details of the German defences. Covering Watson’s advance the RAN fired its first naval gunfire support mission on active service when HMAS *Encounter* launched 46 6-inch shells at the Toma ridge. As the battalion approached the village the 12-pounder fired another six rounds at the village defences and finally the Germans offered to surrender.69 Negotiations

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66 Ibid., 64–5.
were conducted at Kokopo on 15 and 17 September and the acting governor signed the terms of capitulation on the afternoon of the 17th, with the remaining German forces surrendering at Rabaul four days later.70

It took nearly three months for Holmes’ force to occupy the rest of the German territories. In the meantime Spee’s squadron sailed east to South America where it encountered an inferior British squadron at Coronel off the coast of Chile on 1 November. The ensuing battle was a lopsided victory resulting in the loss of two antiquated British armoured-cruisers, which were outclassed in both gunnery and seamanship. The British gained their revenge a month later at the Battle of the Falklands when Spee’s squadron was destroyed by a superior British fleet after attempting to raid Port Stanley on 8 December. The battle saw Scharnhorst, Gneisenau, Nurnberg and Leipzig sunk, with only the light-cruiser Dresden escaping. Spee along with more than 1800 German sailors, including his two sons, were lost with their ships.71

70 Worthington, Our Island Captures, 39, 40–1; ‘Capture of Germany’s Seat of Government in New Britain’, SMH, 14 September 1914, 5.
Back in the islands a small number of Germans escaped from New Guinea into neutral Dutch New Guinea while a few holdouts chose not to surrender. When war was declared a small body of 25 police were escorting a boundary survey party under the supervision of Lieutenant Hermann Detzner as it worked its way along the Papua-New Guinea border in the interior of Kaiser Wilhelmsland. When Detzner found out about Haber's capitulation he chose not to give up and instead retreated into the jungle and where he would remain for the next four years. And by time the Australians completed the occupation of the 'Old Protectorate', the Japanese had occupied the colonies of the 'Island Territory' north of the Equator and captured Tsingtao. With the removal of the German threat a specially raised 'Tropical Force', under Colonel Samuel Pethebridge, replaced Holmes' force to garrison the Australian occupied islands for the remainder of the war. Pethebridge's force even included a small contingent of aircraft appropriately configured to deal with the maritime environment.

By the time Herman Detzner emerged from the jungle to surrender on 5 January 1919, the Paris Peace Conference was about to commence to set the peace terms for the defeated Central Powers. As a result of the forthright efforts of Australian Prime Minster William Hughes, the former German territories occupied by Australia eventually passed to the Commonwealth as 'Class C Mandates' under the League of Nations, while New Zealand retained Samoa and Japan retained the former 'Island Territory'. On 9 May 1921 the ANMEF officially ceased to exist as the Australian military occupation passed to a civil administration.

**The Influence of Geography**

The next section of the paper addresses the influence of geography on the New Guinea campaign. It is axiomatic that geography shapes the conduct of all military operations but the New Guinea affair is a particularly interesting case study. Operations in the Asia-Pacific region in 1914 were conducted over a vast swath of the globe, from the Cocos (Keeling) Islands in the eastern Indian Ocean, across the Pacific to Coronel on


the west coast of South America, a distance of more than 15,000 kilometres or 8000 nautical miles; and from the German base at Tsingtao on the coast of China, south to the Australian federal capital of Melbourne, a distance of more than 8500 kilometres or 4500 nautical miles. Limitations of space preclude a comprehensive treatment of all aspects of the campaign influenced by geography and so the following discussion will be limited to a single signature issue, one each at the strategic, operational and tactical levels of war.

**Strategic**

Germany’s strategic plans in the Pacific in the event of war with Britain revolved around a ‘ruthless’ campaign against the British maritime trade.\(^{77}\) British strategy in the Pacific aimed to eliminate that threat.\(^{78}\) This aim meant that Britain had five strategic tasks in the Asia-Pacific. First, it had to eliminate Spee’s East Asiatic Squadron. Second, it had to secure British holdings in China. Third, it had to secure British and French possessions in southeast Asia and the Pacific. Fourth, it needed to ensure the safety of Allied shipping in the Indian and Pacific oceans, which would soon include substantial numbers of Australian, New Zealand and Indian troops bound for Europe. Finally, it had to secure German possessions in China and across the Pacific to deprive Germany of its strategic communication and logistics facilities.\(^{79}\)

In this era of cable communications and steamships, overseas territories had geo-strategic value, providing both communications links and logistics infrastructure for naval lines-of-communication. While the main German base at Tsingtao was linked by telegraph (the satellites of their day) with Europe, and a single branch submarine cable linked the naval base via Shanghai with the island of Yap, Germany’s other Pacific territories relied totally on radio.\(^{80}\) Wireless technology was little more than a decade old when war broke out but by then all navies relied on radio to transmit orders to distant fleets and vessels, whether combatants or merchant marine. While many merchant ships still used simple crystal receivers or crude magnetic-wire sets with a range of only several hundred kilometres, modern warships were equipped

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with more capable wireless plant, and the most powerful ground stations with their elaborately constructed antenna arrays could transmit up to 8000 kilometres. Hence in 1914 Germany had established, or was in the process of completing, wireless stations at Bita Paka, at Apia, Yap, and Nauru, creating a chain of stations across the Pacific. These stations would enable Germany to control her warships and radio interception from these sites could provide Spee with intelligence on the movements of friendly and enemy shipping. But without these stations and the island territories they occupied Spee would be deprived of his ‘eyes’ and ‘ears’.81

The German Government may even have encouraged the German radio company Telefunken in 1910 to construct two radio stations at their own cost in Australia, one at Melbourne and the other on King Island in Bass Strait. If Telefunken, rather than its British rival Marconi, had gained permission to develop the Australian radio network, the German Navy would have been able to intercept Australian radio communications in time of war. The positioning of the two Telefunken stations astride Bass Strait is significant as this busy shipping route was a proposed wartime area of operations for Spee’s squadron. The Australian Government only dismantled Telefunken radio station on King Island following the outbreak of war.82

In contrast with Germany’s vulnerable position, Britain controlled 56 per cent of world’s submarine cable and its ‘all Red Line’ network dominated the Western Pacific. Not only had Britain laid considerably more cable than any other power, it controlled the means to lay and repair more. In 1914 Australia was linked to Europe by five submarine cables which made it difficult for any opponent to isolate the Dominions from Britain. For instance, it was estimated that with the duplications of cable lines it would take at least seven cable cuttings to isolate Australia. Cable communications provided Britain with the means to orchestrate its strategy of capturing Germany’s colonies and isolating Spee’s squadron. These same cable links enabled the Dominions to press their point of view with London with greater force and immediacy than before.83

83 Kennedy, ‘Imperial Cable Communications and Strategy, 1870–1914’, 75–98.
Britain’s early request for Australia and New Zealand to occupy the German territories stemmed from the need to occupy the sites controlling German strategic communications. It is no coincidence that most of the Australian fighting in the Pacific took place at or near communications nodes, including the Australian action at Bita Paka and the famous *Sydney-Emden* fight when the German raider attempted to disrupt British cable communication station on Direction Island in the Cocos (Keeling) group.84 The location and dispersal of these communication assets provided the geographic objectives for the various Australian operations and determined the size and complexity of the supporting logistics efforts to mount them.

*Operational*

Military historian and analyst Murray Williamson has observed that:

> The operational context of war has traditionally represented the aspect of geography that most intrigues military historians. Yet, it is also an area where it is all too easy to confuse the possible with the theoretical. Part of the problem is that military historians, following the lead of military organizations themselves, tend to emphasize the combat aspects of operations as opposed to the less appealing, but equally important contributions of logistics and intelligence.85

The sheer size of the Pacific theatre of operations was a major impediment to the successful achievement of the Britain’s geo-strategic goals and the swift capitulation of the German colonies has obscured the very real challenges faced in mounting the expeditions to capture the German territories and their radio stations. The mounting base for the ANMEF was Sydney and its primary objective was the German capital Rabaul. These two localities are 1850 nautical miles apart, which at an average ship speed of 10 knots would take 7 days and 16 hours to sail. The need to move the force over such distances and the time required to complete the mission demanded a significant logistics effort even without a shot being fired.

The main operational impact of geography on the New Guinea campaign was logistics. An expedition the size of ANMEF and its supporting naval squadron required substantial administrative and logistical support and given the demands of force projection in what was a maritime theatre, everything had to be carried afloat. It was fortunate that at the time the RAN was funded to maintain extensive war

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stores which could be quickly loaded, bringing the warships of the fleet up to war standard soon after war precautions were advised. These stores were mostly held at the fleet base at Garden Island, Sydney.86

In addition to the individual warships’ stores, Patey’s squadron was bolstered by four fleet auxiliaries, which were merchant vessels taken up from trade and chartered by the Australian Government for service with the RAN and run under naval discipline. Patey’s four auxiliaries were the submarine depot ship *Upolu*, the auxiliary cruiser-turned transport *Berrima*, the hospital ship *Grantala* and the supply ship *Aorangi*. Between *Aorangi* and *Upolu* Patey’s auxiliaries carried practically the entire reserve ammunition for *Australia* and the light-cruisers, together with part reserves for the destroyers and submarines.87 In addition the squadron was accompanied by three colliers (SS *Koolonga*, *Waibora* and *Whangape*) and two oil tankers (SS *Murex* and *Esturia*) highlighting that perhaps the most crucial supply commodity of the campaign was fuel.88

Today oil fuel is the lifeblood of ships and while in the first decade of the twentieth century the RN had made the decision to change over to oil as the main fleet fuel, in 1914 most ships were still powered by coal.89 Warships and merchantmen of the era were mostly coal-fired steamships requiring regular re-fuelling, either by colliers at sea or at a friendly port.90 Fast-moving warships were particularly greedy and a few examples will serve to illustrate the point. As has already been noted, on the outbreak of war HMAS *Australia* was sent zigzagging across the Pacific on a series of missions. In three months between 1 August and 31 October the Australian flagship sailed 16,353 nautical miles, requiring re-coaling eleven times, and consuming more than 15,000 tons, which depending on the quality of the coal was consumed at a rate of between 10 and 20 tons per hour. Extra speed could be coaxed from the engines when they burned coal sprayed with oil but at full speed (25 knots) *Australia* would consume up 500 tons in a day. Even with a hold capacity of some 3200 tons of coal and 820 tons of oil there were limits to the *Australia*’s endurance.91

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87 ‘Review of RAN War Effort’, 12 December 1918, MP472/1, 40/18/7871, NAA(Vic).
88 Ibid., 53.
89 Only the new RN *Queen Elizabeth*-class battleships and some smaller vessels such as destroyers and submarines had made the transition to oil. Marder, *Dreadnought to Scapa Flow Vol. II*, 45, 268–70.
In comparison Australia’s main opponents, Scharnhorst and Gneisenau, each had a maximum capacity of 2000 tons of coal. At ten knots each ship burned 100 tons a day and could steam for twenty days. At 20 knots the figures were 500 tons a day and four days. No captain however, wished his bunkers to get too low and it was a general rule in all navies to keep bunkers at least half full at all times, dictating that ships of this type needed a coaling about every eight or nine days.\(^92\)

Aside from fuel to feed the ships, the Australian expedition also required substantial supplies to sustain its personnel. To cater for the other natures of supply the expedition was supported by the SS Aorangi, a 4163-ton cargo ship. Quickly converted with the addition of magazines and shell rooms, the vessel became the fleet store ship carrying foodstuffs, ammunition and general stores. In Aorangi’s holds were provisions for 2400 men for 60 days, while Berrima held provisions for 1700 men for 60 days’ ships’ service and an additional 90 days’ shore service. Even the Kanowna carried provisions for 10 days’ ships’ service and an additional 30 days’ shore service.\(^93\) Berrima’s supplies were topped-up during the pause off Palm Island when a consignment of 32,000 kilograms of frozen mutton was taken aboard.\(^94\)

To meet the medical needs of the expedition the fleet was supported by a fully equipped hospital ship, the SS Grantala. Admiralty pre-war planning included a scheme in which merchant ships were to be commissioned and fitted out as hospital ships at various ports throughout the empire in the event of mobilisation. Sydney was one of the identified ports and its hospital ship was to support any British naval operations in the Pacific. Material for the ship was stored at the Garden Island and was transferred to the RAN in July 1913. This material included iron swing cots, blankets, sheets, hospital crockery, drugs, dressings and a complete hospital laundry. In accordance with these plans Grantala was requisitioned on 7 August and fitted out in less than three weeks to become Hospital Ship Number VIII. When fully converted the ship could accommodate 180 patients, although in an emergency this could be boosted to 300 casualties. The ship boasted a modern operating ward, a bacteriological laboratory, x-ray studio, and laundry, which included a steam disinfecter and steriliser. In addition to the Principal Medical Officer there were 59 medicos including six surgeons, an anaesthetist, a pathologist, and a radiographer.

\(^92\) Fred T. Jane, Jane’s Fighting Ships 1914 (London: David & Charles, 1968), 130; Massie, Castles of Steel, 189; Strachan, To Arms, 467.

\(^93\) ACBN to Admiralty, 27 August 1914, ADM137/7/7–1, The National Archives, Kew (hereafter TNA).

\(^94\) Director Naval Stores, memorandum, 26 August 1914, 3DRL/0053, 7, AWM; ‘Diary of Events’, 31 August–1 September 1914, Series 33, 1, AWM.
The female nursing staff included one matron and six sisters.\textsuperscript{95} The extensive refurbishment meant that the ship was not ready to accompany the ANMEF when Berrima departed Sydney although she eventually left Townsville on 8 September, arriving off Rabaul five days later at midday on the 13th. Unfortunately the vessel arrived too late to assist those wounded on 11 September.\textsuperscript{96}

The thoroughness of the logistics effort for the New Guinea campaign in many ways ensured the success of the operation. The swiftness with which the expedition was mounted and deployed, even with the enforced delay at Palm Island, was according to the Germans one of the key factors in their failure to sustain a more robust defence. Acting Governor Haber confessed to one of his captors after his surrender that ‘his defence arrangements were a week too[o] late, and … [the ANMEF] arrived a week too[o] soon’.\textsuperscript{97} Without the comprehensive and timely efforts to put the troops ashore in a condition to fight it is unlikely that the battle at Bita Paka would have been so easily won.

\textit{Tactical}

Battles take place on a specific piece of terrain and the configuration of that terrain can greatly influence the conduct of the fighting. It is also axiomatic that terrain can vary considerably from one theatre of operations to another. At Bita Paka the land operations were conducted in the littoral region of New Britain, a mountainous island lying within the tropics, and an environment of which few of the Australian troops had much experience. Indeed the naval and military personnel who fought there were ill-equipped and poorly prepared for the challenges of hinterland jungle operations. While their lack of preparation did cause some problems, which will be identified later, their ultimate success can be attributed to the creative application of tactical doctrine to the unfamiliar conditions and some good luck.\textsuperscript{98}

\textsuperscript{95} Michael Dowsett, ‘Hospital Ship No. VIII: The Royal Australian Navy’s First and Only Hospital Ship and Her Involvement in Early Naval Operations in World War I’, \textit{ADF Health} 8:1 (April 2007), 31.

\textsuperscript{96} Ibid., 31–2.


\textsuperscript{98} Jose describes the Bita Paka action as ‘an affair of continuous good luck’. Jose, \textit{AOH}, Vol. IX, 91.
Australian doctrine and training at this time was derived wholly from British sources since the Dominions had all agreed to adopt British doctrine, equipment and weapons to ensure the contingents could operate together in the event of war.\(^99\)

British infantry training focussed on company-level operations with tactics that stressed fire and manoeuvre to close with the enemy, followed by the decisive final shock launched at bayonet point. This was seen as the key to solving the problem of infantry attack in an age of smokeless-powder magazine-fed rifles, quick-firing artillery, and the machine-gun.\(^100\) The in-service 1911 infantry training manual provided only limited advice on fighting in ‘close country’ other than noting that the problems of restricted visibility and movement demanded more initiative from subordinates. Perceptively the authors observed that: ‘Troops fighting in close country are usually very sensitive as to their flanks, as they are unable to see what is going on. This fact affects the defence more than the attack, for there is danger that a defended line penetrated at one point may give way everywhere.’\(^101\) In an attack it recognised that: ‘Close country enables the attacker to approach his enemy with less loss than is usually experienced in more open ground … [but] special care is … necessary if the direction of the attack is to be preserved.’\(^102\) The actions of the officers such as Bond, Bowen, Hill and Watson indicate that they applied their limited doctrine intelligently to the unfamiliar situation they found and it was bold leadership and initiative that created the conditions for the swift German defeat. Bond was later decorated with the Distinguished Service Order (DSO), the first operational award for an Australian in the Great War.\(^103\) While acknowledging the strong performance of unit level-leaders, it is equally important to note the perfunctory preparation of the ANMEF and it was fortunate that the Germans were even less well trained.

\(^99\) For an assessment of these developments see John Connor, ‘Coronation Conversations: The Dominions and military planning talks at the 1911 Imperial Conference’ in Peter Dennis and Jeffrey Grey (eds), 1911: Preliminary Moves (Newport: Big Sky Publishing, 2001), 41–55. For more conspiratorial accounts see John Mordike, ‘We Should Do This Thing Quietly: Japan and the Great Deception in Australian Defence Policy 1911–1914’ (Fairbairn: Aerospace Centre, 2003); Douglas Newton, Hell-Bent: Australia’s leap into the Great War (Melbourne: Scribe, 2014), 36–53.

\(^100\) General Staff War Office (GS WO), Infantry Training 1911 (London: HMSO, 1911), 11, 104–6.

\(^101\) Ibid., 149.

\(^102\) Ibid., to Naval Secretary, 20 April 1915, MP1049/1, 1915/079, NAA.

\(^103\) Bond’s award was gazetted in 1916 but technically it was the first recommendation to an Australian. London Gazette (11 January 1916), 449. Bowen was also recommended for the DSO and his nomination makes it clear that he was for adroit tactical handling of his troops: ‘By his disposition of skirmishers [he] discovered what was virtually an ambush, and by capturing the 3 Germans in command, utterly demoralised the native police and probably averted a disaster to the small party of Naval Reservists. Later on, the scheme of attack drawn up by him & Lieutenant Hill proved to be sound, eventually brought about the surrender of the trench.’ Major P. Molloy, letter.
The brigade commander, William Holmes, reported after the short sojourn on Palm Island that his troops:

received most valuable individual instruction in musketry under the personal direction of Major Heritage and Lieut[enant] Marsden, who is on the staff of the School of Musketry … The men have got quite handy and expert with the rifle, including both soldiers and sailors, the latter were very green at first but are now splendid.\textsuperscript{104}

An accompanying journalist later claimed that the brief stopover allowed the force to attain ‘a degree of competency and training which any army in the world might feel proud’.\textsuperscript{105} In contrast with these optimistic assessments, the adjutant of the army battalion observed: ‘Have been carrying out desultory rifle firing. Result rotten, lots of us have never handled a rifle before.’\textsuperscript{106} Even so the official history notes how the force was ‘taken ashore nearly every day, across a shingle beach to rocky ground and bush—a terrain ill-suited to manoeuvres: but it taught them how to maintain touch in thickly-wooded country, and the lesson afterwards proved invaluable in the dense jungles of New Britain’.\textsuperscript{107}

While it is clear that the troops benefited from the short training period on Palm Island the lack of appropriate preparation and training did lead to a number of problems that were compounded by the unfamiliar conditions. The most notable of these was the problem of fire discipline. One sailor recorded two separate incidents of unauthorised discharges—the first when a rifle was accidentally fired while being loaded during the battle; the second involved his commander negligently discharging his pistol at night and causing a false alarm. The same sailor observed that in the confusion of battle it would have been easy to misidentify your own troops: ‘Shooting going on all around us. Not knowing whether it was the enemy or our own men. Not knowing the German uniform and not knowing they had natives fighting for them we were in danger of shooting our own men or being mistaken for the enemy.’\textsuperscript{108} The lack of acclimatisation and familiarity with jungle terrain contributed to this state of affairs.

\textsuperscript{104} Holmes, letter to Legge, 9 September 1915, Series 33, 9, AWM.
\textsuperscript{105} Burnell, \textit{Australia Versus Germany}, 58.
\textsuperscript{106} Captain C.H.D. Lane, diary entry, 26 August 1914, 1DRL/0406, AWM.
\textsuperscript{108} Able Seaman William John Lane, diary entry, PR89/126, AWM.
At least three of the Australian battle casualties during the battle occurred during the attempted prisoner escape when it is unlikely that any of the German prisoners were armed, although there may have been German forces firing from the jungle. It appears likely that some or all of the Australian losses can be attributed to friendly-fire in the crossfire. Three Australian sailors were hit at the one time, with one being fatal. If all three men were victims of friendly-fire this means that 16 per cent of Australian fatalities and 50 per cent of the wounded were due to friendly-fire.\textsuperscript{109}

Of course such evidence can be presented as indicators of incompetence, but it more accurately reflects the inherent confusion of fighting in close country. Disorientation and uncertainty is inevitable under such conditions and consistent with historical trends for troops engaged on ground where visibility is restricted, engagements ranges short, and positive target identification difficult.\textsuperscript{110} In fact it is highly likely that some of the German casualties were also fratricides, but nobody thought it important enough to record them when the victims were Melanesian. The fact that the Germans issued their European troops with green armbands is an indicator that they feared the Melanesian police might accidentally shoot their own in the confusion of the fight.\textsuperscript{111}

As for the results of the combat on 11 September, geography played a crucial role in the distribution and nature of casualties. In an engagement such as Bita Paka where the Germans were prepared and concealed and the Australians exposed as they advanced, it would normally be expected that the attackers should suffer the higher loss. That such was not the case requires an explanation although there appears to be no single, simple answer, rather the disparity reflects multiple causes, some geographic others not. First, the miniscule German casualties (other than prisoners) would suggest a lack of commitment by the reservists for a task probably viewed as pointless. Bluffed by the Australians, most gave up as they perceived their situation hopeless. Second, whatever complaints the Germans may have expressed later, it is obvious that the police did most of the fighting and dying.\textsuperscript{112} The high casualties among the constabulary, which Mackenzie admits ‘could not be ascertained


\textsuperscript{111} Molloy refers to the use of armbands as a device to prevent possible fratricide among the German forces. Major P. Molloy, ‘Report to Navy Office’, 3, 3DRL/7734, AWM.

\textsuperscript{112} Klewitz, ‘Armed Forces Report’, 8, Series 33, 62/4, AWM.
accurately’, stem from a number of factors. As the police were not trained soldiers, and all accounts indicate that they were reluctant participants, their high death rate is most likely due to inexperience and fear. This is highlighted in the prisoner incident at the second trench where nearly half their fatalities were sustained. According to one Australian participant the single German fatality was accompanied by at least a dozen Melanesians killed. The German was Sergeant Franz Ritter and he is the only recorded German death in the Bita Paka engagement while Melanesian casualties were not accurately counted. While most police sensibly chose to desert when the chance arose, others were reluctantly forced to die for the Kaiser.

Finally, there is the issue of the disproportionate ratio of dead to wounded. In modern military engagements the number of non-fatal casualties typically outnumber fatalities by somewhere around three or four to one. At Bita Paka the ratio is atypical with the ANMEF bearing two wounded to every three deaths and for the Polizeitruppe it is reversed at one to three. The answer to this anomaly is more complex. Certainly one factor was the terrain. The fighting occurred in dense bush with one Australian recording that the jungle bordering the road was so dense ‘that half a dozen men could be within a dozen paces of each other and remain quite invisible one from the other’. So while the fighting lasted it was at close range and under such conditions quarter was less likely to be given or received.

Compounding the viciousness of the close quarter battle were the ingrained cultural attitudes. By and large the Australians adhered to the prevailing racial prejudices of the day believing in the inherent superiority of white people, especially Britons. Quasi-social Darwinist beliefs predisposed Australians to look down upon Melanesians and such feelings turned violently antagonistic when they unexpectedly encountered Polizeitruppen. Matters were not helped by the German decision to arbitrarily divide their forces into ‘military’ and ‘non-military’ sections with uniform distinctions that were not always readily apparent to the Australian troops.

114 Private J.W. Axtens, letter to father, 17 September 1914, 4, 2DRL/0308, AWM; Axtens, diary 11 September 1914, 2DRL/0308, AWM.
116 G.A. Hill, memoir, 41, 1DRL/0351, AWM.
118 Australian accounts make it clear that the ANMEF were not aware of this technical distinction. Mackenzie, AOH, Vol. X, 39.
At Bita Paka the odds were stacked against the wounded on both sides. For the Australians the early wounding of Pockley removed their only doctor from the battlefield, reducing the chances of stabilising the wounded before their evacuation to the dressing station at Kabakaul and thence to Berrima. Pockley’s bravery in giving away his Red Cross brassard is commendable, his loss tragic but perhaps unnecessary, and it probably cost the lives of others who might otherwise have been saved. Such an assessment is supported by the fact that Pockley saved the life of one of the German wounded when he performed an emergency field amputation of the man’s shattered hand. This case is supported by the fact that only two of the Australian fatalities appear to have been killed in action (meaning they died on the battlefield) while the remaining four died of wounds (meaning they were evacuated and died later).\textsuperscript{119} Evacuation of the casualties was undoubtedly slowed by the absence of trained stretcher-bearers and the lengthy route back along the track while exposed to fire from the jungle.\textsuperscript{120}

**Final Observations**

Rather than postulating enduring lessons that might support this argument or that, the final section of the paper will be restricted to a few observations on what the New Guinea campaign suggests for the Australian Army in the twenty-first century. In the 101 years since the operations of 1914 Australia’s strategic circumstances have significantly changed, as has the technology of communications, transportation and weaponry. These changes have radically altered world affairs suggesting that it is dangerous to advance enduring and immutable historical lessons promoting geography as a fixed determinist of strategy because the relationship between geography, changes in political alignment, sociological shifts and technology is dynamic.

Despite changes in politics, society, and technology, in the ensuing century there has been a constant friction between Australia’s geo-strategic culture and the way the nation actually fights its wars. In a paper published a decade ago Michael Evans described this dichotomy as a ‘tyranny of dissonance’. Evans makes the case that ‘a geographically based defence policy [especially as championed between 1972 and 1997] was flawed because of its incompatibility with geopolitics, its divorce from fundamental historical lessons, and by a loss of congruence between defence planning

\textsuperscript{119} Ibid., 55.

\textsuperscript{120} The Germans appear to have made few plans for battlefield casualty treatment and the Melanesian casualties are said to have been left in the bush for days before they were collected and evacuated. Private Ambrose O’Hare, diary entry 12 September 1914, O’Hare war diary and papers, 12 August 1914-15 October 1918, CY4897, SLNSW.
and foreign policy interests'. In his opinion no one ‘can study Australian military history and not be struck by the fact that Australia’s peacetime strategic culture has seldom matched the reality of its way of war’.

More recently the Lowy Institute’s Alan Dupont has similarly critiqued Australian strategy, observing that the nation’s current military strategy ‘is still infected by an overly rigid, determinist approach to strategic risk management. This distorts both our strategy, and structure of the ADF, by placing undue emphasis on defending Australia from conventional military attacks and persisting with the illusion that geography provides Australia with “immutable” and “abiding” strategic benefits.’ He goes on to observe that Australia’s geography did once afford a measure of protection due to the continent’s relative distance from threats but that distance is far less a barrier today.

Without challenging the premise of the shrinking or globalised world and the rise of the new threats of global terrorism and cyber attack, the fact remains that Australia’s geographical isolation only ever provided a limited measure of protection from military threats, especially since the industrial revolution and the development of steam-powered ships and telegraphic communications. These technologies were well established by the time the Commonwealth was inaugurated in 1901 and Australians recognised then that relative isolation could not guarantee security. Australian strategic guidance in 1905 opened with the premise: ‘The geographical position of Australia renders it less liable to aggression from any foreign Power than most parts of the Empire; but it is equally certain that Australian interests outside Australia itself are peculiarly open to foreign interference, and to possible destruction by an enemy in time of war.’

Even a century ago assumptions of an ‘area of direct military interest’ or ‘primary operational environment’ were not constraints on Australia’s strategic thinkers. Unwilling to contemplate the unsustainable cost of armed neutrality and fully cognisant of ‘the crimson thread of kinship’ that bound Australia to Britain by

122 Ibid., 40.
123 Alan Dupont, *Full spectrum defence: Re-thinking the fundamentals of Australian defence strategy* (Sydney: Lowy Institute for International Policy, March 2015), 3.
124 ‘Defence Scheme for the Commonwealth of Australia’, 1905, 1, Series 113, MH1/3, AWM.
mutual cultural, economic and defence ties, Australian-Britons of that era were willing, confident and active members of the British Empire.126 Australians saw security in terms of shared cultural values and ideas rather than simple geography. In this regard the New Guinea campaign highlights the dangers of contemporary notions that define military commitments as either operations of choice or necessity, just as it is fallacious to place arbitrary geographic boundaries on the likely areas of deployment for the army.

One of the most ill-considered myths surrounding Australia’s Great War involvement suggests that it was somehow a war of choice. World War One was in fact an existential war as far as the young Commonwealth war concerned. When Britain declared war on Germany, Australia and the rest of the British Empire were automatically at war because the making of war and declaring peace were royal prerogatives at that time.127 Aside from the legal position, Australians also felt a impelling moral obligation not only to support the ‘old country’ and the Empire as part of their commitment to the collective security blanket of imperial defence, but equally to protect the rights of countries such as Belgium, whose neutrality Germany had violated, providing the pretext for Britain’s declaration of war.128

For these reasons Australia not only agreed to raise the ANMEF to deal with the local German threat, the government also offered the 20,000-strong expeditionary force, later titled the Australian Imperial Force (AIF), to serve in Europe. While there had been some pre-war discussions with New Zealand on possible combined action leading to some preliminary scoping of possible tasks, actual planning had progressed little further than a broad intent and there was certainly no executable plan worthy of the name in 1914.129 The 1913 mobilisation plan provided for several


127 Deirdre McKown and Roy Jordan, ‘Background Note: Parliamentary involvement in declaring war and deploying forces overseas’ (Canberra: Parliament of Australia, 22 March 2010).


‘probable forms of employment of the Commonwealth Military Forces’ including: ‘The dispatch of small expeditionary forces against foreign possessions which might be used as a base for operations against the Commonwealth in the Eastern Indian Archipelago and the Pacific.’

Earlier in the document the list of possible targets identified 19 different ports belonging to seven countries including Germany, Japan, Britain’s allies France and Russia, as well as countries unlikely to take no part in a European war such as China, the Netherlands and the United States. The best advice offered on the composition of the expeditionary force for the ‘East Indian Archipelago’ was that it ‘will be drawn from the troops of the 1st Military District (Queensland), as provided for in Special Plan of Operation (C).’ As matters transpired it does not appear that the special plan was drafted and if it was, in 1914 the plan was ignored as the ANMEF was raised in Sydney from personnel drawn mostly from New South Wales and Victoria.

The failure to develop a fully-fledged contingency plan for the New Guinea operation was probably due as much to government domestic political concerns as it did with the incapacity of army headquarters to undertake necessarily detailed planning before war broke out. Even so, the army’s senior staff knew that there was a strong likelihood of having to raise a force at short notice to fight in the tropics, a difficult environment far removed from the national support base. The lack of suitably detailed plan, based on a realistic assessment of stores and equipment availability, meant that the acquisition of nearly everything for the ANMEF, from quinine and mosquito nets to mess tins and signaling equipment, was improvised.

The second observation relates to the first and is what might be termed the challenge of remote victory. Although the ANMEF achieved a clear-cut operational success in 1914, that victory did not determine the outcome of the war. As the ANMEF battled it out with their German opponents the long-term fate of Papua and New Guinea was actually being decided 14,000 kilometres away. Between 5 and 11 September, as the scratch force of one hundred Australian sailor-soldiers fought out their battle against a similarly sized German body, some two million French.

130 ‘General Scheme of Defence. Commonwealth of Australia’, 1913, 18, Series 113, MH1/11, AWM.
131 Ibid., 6.
132 Ibid., 26.
133 Small contingents of naval reservists were also drawn from Adelaide and Brisbane.
British and German soldiers were locked in battle along the River Marne in a contest that determined the course of the Great War and some would argue changed the world. The operational draw on the Marne was a strategic defeat for Germany as its advance on Paris was halted, France was saved from defeat and occupation, Germany was denied the quick victory it needed, and the battle ushered in four more bloody years of war that only ended with the defeat of Germany in 1918.\textsuperscript{135}

Without ‘the miracle of the Marne’ the war would probably not have lasted long enough for the AIF to make it to Europe and battles such as Fromelles, Passchendaele and Villers Bretonneux would not resonate with Australians today as they do. Without the Marne, German New Guinea would almost certainly not have remained in Australian hands after the war, and the future of an independent Australia in the Pacific would not have been so assured. Of course some historians have engaged in counterfactual historical arguments over Britain’s entry into the Great War. Niall Ferguson, among others, interprets Britain’s decision to intervene as counter to its long-term interests and that participation in the war only undermined Britain and its empire. As his argument goes, a German victory in 1914 would not have been of any great import because it would only have ended with Germany hegemony over Western Europe and heralded the early development of the European Union.\textsuperscript{136}

Ignoring the fact that a belligerent, victorious Wilhelmine Germany in 1914 is unlikely to have acted in the manner of a chastened, benevolent Merkelian Germany in 2014, the ramifications of a German victory on the Marne are unlikely to have been positive for either Britain or Australia. Domination of a defeated Europe is not the same as being de facto leader of a democratic European Union. Britain alone would have faced a resurgent, aggressive Germany bent on carving itself an even greater place in the sun and the Asia-Pacific would have been one of the arenas where she sought recompense. This is likely to have been to the detriment of Australia.

So this observation suggests that while the army might be called upon to conduct operations both near or far from Australian shores, and those fought closer to home might be classified as operations of necessity, that does not necessarily mean that the geographically proximate will necessarily be decisive—the crucial operations that determined the outcome of the war and the making of the peace. By any calculation Bita Paka was a tactical success that led to the securing of the main operational


objectives of the Australian campaign: the securing of German New Guinea and the dismantling of its strategic communications. However, whether that geographical objective was retained depended on the outcome of the operations in Europe. Germany could not be defeated by victories on the periphery, whether they were in New Guinea or on Gallipoli. Victory could only be achieved by the defeat of the German Army in Europe.

The final observation is on geographical repetition and expectancy. Alliances rise and fall, national interests change over time but geography does not. Australia’s position in the world as a small continent in the Asia-Pacific region means that the Australian Army has and will probably continue to return to the same geographical areas in pursuit of the national interest. For example, last century the Australian Army deployed troops on active service twice to the Malayan peninsula, New Guinea, Bougainville, and Timor. All these operations were conducted within what is defined as Australia’s ‘primary operational environment’; but it should not be forgotten that in the same time period the army also deployed troops twice to Europe, three times to Africa and four times to the Middle East.

**Conclusion**

New Guinea campaign of 1914 is an important but often overlooked milestone in the development of Australia and its military forces. At the tactical level the mobilisation of the ANMEF created Australia’s first joint formation and this force was the first to see action in the Great War, its personnel suffered the first battle casualties, they inflicted the first casualties on the enemy, and its members were awarded the first decorations for gallantry. The operation can also lay claim to a number of other tactical ‘firsts’: first Australian amphibious landing, first RAN shore bombardment, first Australian bayonet charge, first deployment of Australian airpower, the debut of Australia’s first jungle fighters, and the deployment of the Australia’s first military nurses.

New Guinea can also claim a number of operational ‘firsts’. It was the first joint campaign conducted by the RAN and the Australian Army, indeed it was the first operation wholly planned and conducted by the Australian services. It remains the only campaign of the Great War when Australia provided all the logistic resources to support its forces. And the capture of New Guinea was the only campaign of the War that served Australian geo-strategic interests in a direct and tangible way.

In late 1918 as the war reached its climax Australian Prime Minister, William Morris Hughes, was touring France visiting soldiers of the AIF. As Germany scrambled to avoid collapse, American President Woodrow Wilson became the architect of a peace plan in which he articulated in his famous ‘Fourteen Points’. Wilson’s fifth
point advocated ‘a free, open-minded and absolutely impartial adjustment of all colonial claims’. On Sunday 13 October Hughes lunched with the Earl of Derby, the British ambassador in Paris. Derby noted that ‘Hughes [was] as usual very outspoken and thoroughly indiscreet. He objects most strongly to Wilson’s actions and thinks Germany made a clever move in assuming the Allies’ agreement with his [Wilson’s] articles, whereas as a matter of fact we probably agree about none. He says that as far as Australia is concerned he would consent to no handing over of the conquered Colonies to any nation.’

With the Armistice on 11 November Hughes’s position only hardened as he became more insistent on the retention on the captured territories and demanded the right for an independent voice at the peace conference where their fate would be decided. Against the wishes of His Majesty’s Government, Hughes successfully argued for separate Dominion representation so they could state their own case for compensation and a division of the German overseas territories. The irascible Hughes quickly earned the ire of Wilson who reiterated that the war was being fought for a moral cause and for post-war harmony in Europe. He envisaged a peace based on decolonisation, disarmament and a League of Nations.

For Australia, Wilson’s fifth ideal of readjusting colonies fairly fell on Hughes’ deaf ear. The main bone of contention was of course German New Guinea. Wilson wanted it declared a trustee territory of his proposed League of Nations. To Hughes it was Australia’s strategic front door and now that Australia had wrestled it from German hands he had no intention of handing over to any other body. Hughes believed that the blood price Australia had paid during the war to defeat Germany was justification enough and the size of the Australian casualty list, which was greater than the United States, entitled the Commonwealth to outright ownership. ‘Am I to understand that Australia is prepared to defy the opinion of the whole civilised world, Mr Hughes?’ Wilson demanded. Hughes fiddled with his hearing aid and pretended not to have heard. Wilson repeated the question. ‘That’s about the size of it, Mr President’, Hughes replied. In the end Hughes had his way and Australia took control over the former German territories as a Class C Mandate. New Guinea was in many ways the beginning of an independent Australian foreign policy, one driven by Australia’s geo-political interests rather than those of the empire. It was also


139 Doubt has been cast on this anecdote and Donald Horne suggests that ‘it may even have been concocted in the Wilson camp’ but it does encapsulate Hughes’ position. Ibid.
a campaign that taught Australia’s political and military leaders some valuable lessons on the realities of geo-politics.

In all wars geography plays a role that is often overlooked. New Guinea loomed large in Australia’s horizons in 1914 and the islands to its immediate north became Australia’s main prize of war. To Britain and the other European powers they were a bagatelle of the ‘Far East’; to the young Commonwealth they were vitally important to the security of Australia’s ‘Near North’. And while Australia had seized those scattered islands at a negligible cost in 1914, their ultimate fate was actually determined by events thousands of kilometres away in 1918. In a worldwide conflict those campaigns fought on the periphery rarely determine the outcome and in some wars it is not possible to play a political game of limited liability.

The most important theatre where Australian forces fought in the Great War was the Western Front. From early 1916 until the end of 1918 the AIF fought a war that was concentrated, sustained and contained—heavy battles that lasted weeks, campaigns of attrition that ran for months and all fought in a relatively small sweep of northern France and southern Belgium. Australia played a role, albeit a small one, in the defeat of Germany. While the capture of German New Guinea in 1914 secured Australia’s northern approaches, removing a hostile power from its doorstep, it was the belaboured victory on the Western Front that ensured the Commonwealth was on the winning side and in a position to have a say in the making of the peace. Unfortunately the geographical connection between victory in New Guinea and successful prosecution of the war in Europe is rarely acknowledged.

Geography remains an important factor in the defence of Australia but it is not the only or even the main determinant of Australian security. While Michael Evans may have taken his argument an island too far in claiming that ‘Australia has always taken up arms in defence not of its Asia-Pacific geography but its liberal Western values’, he is substantially correct. Even an exception such as the 1914 New Guinea campaign demonstrates that the operation to secure regional geo-strategic goals was inexorably linked to Australia’s wider war to defend its Western values and liberal-democratic culture. The army’s experience over the past century indicates that whatever direction it is given by government and no matter how austere its financial circumstances, it will need to be ready to fight anywhere and indeed everywhere. If the past is any guide to the future, it indicates that the army should plan for those contingencies assessed as most likely but not be taken by surprise when the government demands that it deploy ‘boots on the ground’ in a theatre not considered in the latest strategic guidance.

140 Evans, The Tyranny of Dissonance, 105.
The Operational Implications of Geography, Space and Distance on the Eastern Front, 1914–1917

Richard L. DiNardo

The Great War was fought on many fronts, ranging from Western Europe to the arid and barren Gallipoli peninsula to the swampy jungles of German East Africa. In Europe proper, the war was fought in four principal places: the western front, the eastern front, which ultimately included Romania; the Balkans, to include Serbia initially and later Macedonia; and finally Italy, where active operations were conducted in the Tirol and in the Carnic Alps, especially along the Isonzo River, the site of twelve distinct battles.1

Each of these fronts had an environment that was all its own. The word ‘environment’ here includes both the natural features of the area, such as rivers, forests, mountains, etc., and those created by man, most notably roads and railroads, but also military facilities, cities, towns and smaller polities as well. This paper will discuss the environment of the eastern front, and the opportunities and challenges presented by that environment to each side in the spheres of tactics and especially operations.

The views expressed here are solely those of the author, and do not reflect those of either the United States Department of Defense, Department of the Navy or the United States Marine Corps. Maps courtesy of the USMA, Department of History.

In discussing the environment of the eastern front, one has to divide the war into two distinct periods. The first begins with the outbreak of war, and goes up to the end of 1915. The second period begins in 1916, and goes up to the end of the war in the east, brought to a close, at least officially, by the Treaty of Brest Litovsk, signed on 3 March 1918. Each of these environments, while sharing some commonalities, was also somewhat distinct from the other.

The environment of 1914-1915 was defined first by the political borders that divided Germany, Austria-Hungary and Russia. The boundary lines, marked by the tongue of Russian Poland jutting westward, created in essence three salients, piled on top of each other. The first salient was that of East Prussia, which extended eastward along the Baltic coast up to the delta of the Nieman River. Immediately south of the East Prussian salient was the promontory of land that jutted westward from the Bug River, encompassing Russian Poland and its capital Warsaw. The northern boundary of Russian Poland paralleled East Prussia, until it curved south, touching the eastern edge of German Silesia, a few miles from the Oder River. The border of Russian Poland then curved back to the east paralleling the northern frontier of Austria-Hungary. The eastward course of the border until it passed the Austro-Hungarian town of Sokal, when it swung to the south until it reached the Dniester River and the border of Romania.

Within these borders were a number of natural features that profoundly influenced the planning of operations. In the northern most salient, the key features were the Baltic coast. The German task of defending the coast was simplified by the fact that the Russian Baltic Fleet, rebuilt at great expense after the Tsushima Strait disaster in the Russo-Japanese War, maintained an essentially defensive posture.2 This precluded any type of Russian descent on the Baltic coast.

The land routes into East Prussia available to the Russian Army were limited to two courses. One was directly west, along the Baltic coast, via Insterburg to Königsberg.3 The other was from the south, via Bischofsburg. The two routes were separated by a heavily forested area, laced with lakes and other water courses, a region known as the Masurian Lakes.4


3 A great many of the localities mentioned in this piece have changed names since 1918, or could have multiple names. The capital of Austro-Hungarian Galicia, Lemberg, for example, could be rendered Lemberg (Austrian), Lwow (Polish), Lvov (Russian), or Lviv (Ukrainian). For the sake of simplicity, the place names used in this article will be those that were in use in 1914.

Map 1: Masurian Lakes.

In the northern border area between Germany and Russia was also featured several critical water courses. The Nieman River marked the easternmost border between Germany and Russia. The longest river in the area was the Vistula, a winding waterway, that shaped a course from central Poland to Novo Georgievsk (present day Modlin), where it turned northward into East Prussia where it flowed into the Baltic.\(^5\) Two other rivers that paralleled the Russo-German border, but inside Russian territory, were two swampy water courses, the Narew and the Bobr. Further east the Bug River originated in Austro-Hungarian Galicia, flowed northward past Brest Litovsk, marking the boundary between Russia and its Polish province, before ultimately turning westward to where it flowed into the Narew, just east of the Narew’s confluence with the Vistula at Novo Georgievsk. Further south, the border area between Russia and Austria-Hungary was marked by much more open space. The region of Galicia that would be the most likely area of confrontation between the Russian and Austro-Hungarian armies consisted of rolling and hilly countryside.\(^6\)

\(^5\) Johnson, *Topography and Strategy in the War*, 55.

There were several minor rivers on both sides of the border, including the Gnila Lipa and Zlota Lipa. On the Austro-Hungarian side of the border there were two major natural features. The first was the San River, a water course that meandered through the plain of western Galicia. Further west was the rugged Carpathian mountain chain, the longest in Europe. Although the mountains were not very tall, with passes no higher than 610 metres (2000 feet), routes through the sixty-mile-wide range were relatively limited, with Dukla, Lupkow and Uzsok being the most important of the passes. The final natural element of the environment was the weather. The climate of the eastern front could easily be described as one of extremes. Summers, like those of 1914 and 1915, could be very hot and dry, as the soldiers of Austria-Hungary, Germany and Russia could attest. As hot and dry as the summers could be, the winters could be extremely cold. Frigid temperatures could often dip well below zero degrees centigrade, becoming cold enough to freeze the water in the jackets of machine guns. The cold could also be accompanied at times by heavy snowfall, resulting in drifts higher than three metres. The drifting snow could make movement especially difficult in the restrictive terrain of places like the Masurian Lakes and the Carpathian Mountains. Both the fall and the spring, especially in Russia, were marked by mud, brought on by the autumn rains and the spring thaw. Operations normally came to a halt during the Russian rasputitsa, or muddy period.

Aside from the natural features, there were three man made factors that shaped the operational geography. The first was the railroad system. Every continental power staked much on the ability to mobilise, and the principal means of carrying this out was the railroad system. Of the three antagonists on the eastern front in 1914, the

honour for the most developed rail system easily belonged to Germany. East Prussia had a dense railway net, replete with double-tracked lines, plus numerous stations and sidings with multiple tracks, to allow for faster on and off loading of trains. The rail system in East Prussia was also well connected to the rest of Germany.

Russia’s railroad system, while not nearly as well developed as Germany’s, had nonetheless come a long way. During the 1890s the Tsarist government had undertaken a major expansion of the rail system in Poland, and then renewed the effort in the last few years before the onset of the war. By 1914 the rail net in Russian Poland featured six double-tracked lines, plus two additional single-track lines. The biggest defect for the Russian rail system was poor connectivity between Poland and the Russian interior. In addition, there was also a lack of lateral lines in Poland to facilitate the shuttling of troops between the northern and southern borders of Russian Poland.¹¹

The Austro-Hungarian rail network was the least developed of the three empires. The Austro-Hungarian government had engaged in a spurt of railroad building during the 1880s, to facilitate the mobilisation of the army, which by then was obligated to act in concert with its German ally. During the last five years before the war, the Austro-Hungarian government once again sought to expand the railway system in Galicia, the expected area of confrontation between Russia and Austria-Hungary. That effort, however, had much more to do with the desire to improve the transport and distribution situation for the Austro-Hungarian oil industry, whose production facilities were located in Galicia.¹² The problem for the Austro-Hungarian rail net was that while some of the major cities, such as Vienna, Budapest and Lemberg, were relatively well-served, the supporting infrastructure was rather thin. While Lemberg, for example, could handle up to 108 trains in a day, the lines (all single track) radiating from there towards the Russian border could only deal with less than half that amount of traffic. The presence of the Carpathian Mountains also limited the number of lines that could run through them towards the Russian border.¹³


Aside from the railroads, all three countries had road systems. East Prussia easily had the best, as all primary and most secondary roads were paved. The conditions of the roads in Austrian Galicia might be described as poor. Many were no more than dirt tracks, sandy or dusty in good weather, and rutted canals of mud after heavy rains. In the case of Russia, government policy in regard to this matter was a combination of opposites. In the north, the government mandated that only poor roads be kept, at least northeast of Warsaw, lest they assist a German advance from East Prussia. In the area near the Galician border the Russians, using money from a loan floated by France, made a considerable effort to improve both railroads and roads.14

The final man-made element that exerted some influence in the campaigns of 1914-1915 was fortresses. In the context of the last two decades before the war, a fortress usually consisted of a brick and mortar citadel, often encompassing a city. The citadel was surrounded by an outer ring of earth and concrete forts, often bristling with guns. This phenomenon applied mainly to Russia. During the last two decades of the 19th century the Russian army, at considerable cost, built a network of fortresses in Poland. The fortress network was designed to cover the assembly areas of the Russian army as it mobilised in Poland. Operationally, fortresses covered the most important crossing points of the major rivers. The upper, middle and lower parts of the Vistula River, for example, were covered by the fortresses of Novo Georgievsk, Warsaw and Ivangoerod, respectively. Brest Litovsk guarded the middle Bug, while Kovno protected the middle Nieman.15 As for the Central Powers, Germany did have some fortresses. Posen, Thorn, Graudenz, Marienburg and Königsberg constituted a line of fortresses that the German forces in East Prussia could retreat to if things went wrong along the border.16 In the south, the most notable fortress was Przemysl, which guarded the middle reaches of the San River, but which was also regarded as not worthy of further modernisation by the Chief of the Austro-Hungarian General Staff, Colonel General Franz Baron Conrad von Hötzendorf.17

The upshot of all this was something of a paradox. Over the whole of the eastern front, distances were considerable. The distance between Warsaw and Lemberg, for example, was over 385 kilometres (240 miles) by road. The overland distance between Kovno in Russia and Allenstein in East Prussia was just over 320 kilometres (200 miles). The relatively under-developed state of the road system served to make these distances more daunting for the armies, especially once troops had had moved away from their railheads. Space, meaning the room needed to employ large units effectively, was another matter. Conditions in this regard on one end of the front were precisely the opposite of those at the other end of the front. On the Russo-German border in East Prussia, the Masurian Lakes region made it impossible for the Russian Northwest Front to deploy the Russian First and Second Armies on a continuous Front, or even within supporting distance of each other. This factor bedeviled Russian war planners, even though they correctly expected that the bulk of the German army would be committed against France.18 Likewise when the Germans

launched their own offensives after Tannenberg, first in September 1914 and then in February 1915, the terrain of Masuria played an important role in the German dispositions. While the relatively restrictive terrain of East Prussia afforded little usable space operationally, Galicia provided an abundance of space. This proved much more advantageous to the Russians, as the open spaces allowed the Southwest Front to deploy Third, Fourth, Fifth and Eighth Armies against the chronically undermanned and out gunned Austro-Hungarian armies.

In the campaigns of 1914 and 1915, the railroads played a major role only at the start of the war, and in the build-up phase of some major operations. The initial German deployment in the east was made easier by the fact that only minor forces were sent to defend East Prussia, with the bulk of the German army executing the Schlieffen Plan against Belgium and France. Thus the German mobilisation in the east proceeded smoothly, as the rail system in East Prussia had ample capacity to handle the demands of the situation. The improved railroad net in Russian Poland enabled the mobilisation of some 5,388,000 men by the middle of September 1914. Thus Russia was able to mount offensives, although with less forces than desired, against both Germany and Austria-Hungary simultaneously, contrary to German and Austro-Hungarian expectations. The Austro-Hungarian deployment proved far more chaotic. This was due in no small part to Conrad’s decision to have the troops de-train further from the border, contrary to established mobilisation plans. Further confusion resulted from Conrad’s sending the General Eduard von Böhm-Ermolli’s Austro-Hungarian Second Army to the Serbian front, only to change his mind and recall the Second Army to Galicia.

Railroads also played a major role in the build-up of forces for a major operation. During the 1914-1915 period of the war, the two best examples of this were provided by each side. The continued arrival of mobilised soldiers by railroad in September

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1914 allowed the Russian Northwest Front to reconstitute the Second Army quickly. The new Second Army, along with the re-deployed Fourth and Fifth Armies, plus the newly created Tenth Army, played an important role in the ambitious plan formulated by Russian commander-in-chief Grand Duke Nikolai to trap and destroy the German Ninth Army as it advanced on Warsaw.\(^{23}\)

The Germans were able to use railroads to facilitate the deployment of General of Cavalry August von Mackensen’s German Ninth Army, after its narrow escape from the Russian counterattack at Warsaw, to its new assembly area between Posen and Thorn. Once repositioned, the Ninth Army launched its attack on Lodz on 20 November 1914. After some tense military fencing with the Russian Northwest Front, finally fell to Mackensen’s forces on 6 December 1914.\(^{24}\)

The best example of the use of railroads to prepare for a major operation was the run up to Mackensen’s attack at Gorlice-Tarnow on 2 May 1915. A newly created German Eleventh Army, commanded by Mackensen (now a Colonel General) with Colonel Hans von Seeckt as his chief of staff, was assembled by rail. This involved moving four corps from the western front to the east, and demanded close cooperation between the railroad sections of the German and Austro-Hungarian general staffs.\(^{25}\)

Excellent staff work and planning allowed Mackensen’s attack force of four German corps (X, XXXXI Reserve, Prussian Guard and Corps Kneussl) and one Austro-Hungarian corps (VI), supported by a number of heavy artillery batteries, to assemble relatively unnoticed by the Russian Third Army, until it was too late.

Once operations were undertaken, the role played by railroads was necessarily a limited one. German railroads figured prominently in shuttling troops to positions that facilitated the destruction of the Russian Second Army at Tannenberg, but that was the exception.\(^{26}\) Normally, railroads served as a brake to rapid advances. Once an army reached a point about 130 kilometres (just over 80 miles) from its nearest rail

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head, the advancing force had to take an operational pause, to allow the railroad to be brought forward. Bringing the railroad forward was made all the more necessary by the poor state of the roads in places like Galicia and Poland.27

Map 3: Gorlice.

On the eastern front, a peculiar problem was the gauge barrier. While the Germans and Austro-Hungarians used the standard European rail gauge of 1.42 metres (about 4’8½”), Russian railways used the broader 1.5 metre (5 feet) gauge. Thus the advancing force needed to have every useable stretch of track re-laid in the appropriate gauge, a task that required both time and manpower in considerable quantities. Bridges also had to be rebuilt, especially as the Russians became quite expert at demolishing them in their retreats from Galicia and later Poland. Matters could also be made worse by bureaucratic problems, such as those experienced by General Alexei Brusilov while the Russians were in control of Lemberg in the fall of 1914.28


The greatest operational impact of railroads was on the character of an army’s advance. The situation on the eastern front generally remained much more fluid than on the more static western and Italian fronts. Advances could and did cover hundreds of kilometres, but that was done usually in a series of digestible bites. The critical offensive movement of 1915, that of Mackensen’s German Eleventh Army in May and later the army group that bore his name, overran much of Galicia and later southern Poland in a series of advances. After amassing a stockpile of material, especially heavy artillery shells, a carefully planned assault would be launched. Once the Russian defences had been smashed open, an advance would begin and continue until a large natural obstacle, such as a major river, had been reached, or if the forward forces had gotten too far away from their rail heads. An operational pause would then ensue, as the railroad was brought forward, the stock of artillery shells rebuilt and other supporting elements such as aviation detachments moved up. Once the logistical support was in place, the offensive would begin again.29

Fortresses played a diminishing role in the campaigns of 1914-1915. Ivangoord proved a thorn in the side of Field Marshal Paul von Hindenburg’s offensive against Warsaw in the autumn of 1914. Likewise the small fortress of Osowiec on the swamplike Biebrza River frustrated the offensive by Colonel General Max von Gallwitz’s army detachment (later re-designated the German Twelfth Army) in February 1915.30

Ultimately, however, fortresses proved to be more of a liability than an asset. Garrisoning a fortress usually entailed a good deal of manpower and material. Even Novo Georgievsk, a relative museum piece by 1914, required a garrison of over 90,000 to man its 1600 guns, which ranged in quality from obsolete to modern. The more modern fortress of Przemysl demanded an even larger garrison of over 120,000 men.31

Fortresses were able to stand in 1914 because the mobile nature of the campaigns meant that the potentially besieging side could not manoeuvre heavy artillery into place. Thus the first siege of Przemysl was lifted quickly in the course of the German-Austro-Hungarian counteroffensive in the autumn of 1914. Likewise the retreat of Mackensen's Ninth Army from Warsaw and the defeat of the Austro-Hungarian First Army shifted the front away from Ivangoord before the fortress could be besieged.32

29 DiNardo, Breakthrough, 73; Stone, The Russian Army in the Great War, 147.
32 Hoffmann, War Diaries and Other Papers, I:45; Austria, Bundesministerium, Österreich-Ungarns Letzter Krieg 1914-1918, 1:384-6; Foerster (ed.), Mackensen, 77-80; Wawro, A Mad Catastrophe, 282.
Once a fortress could be invested for a considerable length of time, or a besieging force could bring heavy artillery to bear, it proved all too vulnerable. The Russian Eleventh Army, after a six-month investment, was able to starve the Austro-Hungarian garrison of Przemysl into surrender before having to launch an infantry assault. The Germans were able to take a more technological approach. After getting their heavy artillery into position, especially the heavy 210mm and 320mm howitzers, supported by aerial spotting and ground observation, the German Eleventh Army began its attack. Although the bombardment was regarded by the Germans as ineffective in a few places, at least two of Przemysl’s outer forts were devastated by direct hits so powerful that German commanders such as Hermann von François were awed by the destruction. The Russians wisely abandoned the fortress, retreating east and then demolishing the remaining bridges over the San River. This yielded only a relatively small haul of 8000 prisoners to Mackensen’s forces.

During the subsequent German and Austro-Hungarian overrunning of Poland in the summer of 1915 the heavy artillery of the Central Powers usually made short work of the Russian fortress network. The fall of Novo Georgievsk was a model in this regard. The German besieging force, two infantry corps and a siege train with over 80 guns of 150mm calibre or larger, was commanded by General of Infantry Hans von Beseler, who had directed the successful artillery attack against Liège. After the investment, a five-day artillery bombardment, plus the occasional infantry assault, sufficed to break the fortress and its demoralised garrison. The massive prisoner haul came to about 85,000. Other fortresses such as Ivangoerad, Warsaw and Brest Litovsk were either taken after a brief investment or quickly abandoned. Thus by the end of 1915 the fortress had disappeared as a major factor in military operations.

The environment for the campaigns of 1916-1917 differed in some respects from that of the first two years of the war. The most critical geographic factor was the Pripet Marsh. Centered around the Pripet River, it was described as ‘a vast labyrinth

33 Svetlana Palmer and Sarah Wallis (eds), Intimate Voices from the First World War (New York: William Morrow, 2003), 80; Tunstall, Blood on the Snow, 167; Stone, The Russian Army in the Great War, 144; DiNardo, Breakthrough, 25.
35 Bettag, Die Eroberung von Nowo Georgievsk, 37, Germany, Reichsarchiv, Der Weltkrieg 1914 bis 1918, 8:377; Stone, The Eastern Front 1914-1917, 181; DiNardo, Breakthrough, 129-30.
36 Bettag, Die Eroberung von Nowo Georgievsk, 108; Germany, Reichsarchiv, Der Weltkrieg 1914 bis 1918, 8:378-9; Austria, Bundesministerium, Österreich-Ungarns Letzter Krieg 1914-1918, 2:653-4; DiNardo, Breakthrough, 129; Stone, The Russian Army in the Great War, 169-70.
of marsh, bog and sluggish rivers. The western edge of the marsh was just east of Brest Litovsk, while the eastern edges reached the Beresina River. The northern reaches of the marsh were near Baranovichi and Mogilev, while the march extended to the northern areas of Ukraine. The area was essentially devoid of roads, especially running on a north-south axis.

The impact of the Pripet Marsh was to divide the eastern front in 1916 and 1917 into two distinct sub fronts, namely north and south. The northern sector of the eastern front encompassed much of imperial Russia’s Baltic provinces, and featured the same restrictive terrain as East Prussia did during the first two years of the war. The area of contention was marked by forests and swampy water courses such as the Dvina River, plus large lakes, most notably Lake Naroch. A final interesting feature was the Baltic Islands, the possession of which was essential for control of sea traffic into and out of the port of Riga.

The area south of the marsh encompassed eastern Galicia and western Ukraine. The southern sector was generally open, with restrictive terrain coming into play near the southern edge of the marsh. Romania’s entry into the war in 1916 introduced two other major natural elements, namely the lower reaches of the Danube River and the plains beyond, and the Transylvanian Alps, a rugged mountain chain that was essentially an extension of the Carpathians mountain range. The Transylvanian Alps, which separated Austria-Hungary and Romania, could be crossed only at nine passes that were divided into a northern group and a western group.

The artificial features of the environment for the campaigns of 1916-1917 consisted of railroads and roads. The Russian rail system, relatively under developed in any case, grew ever less dense the further east one went. The gauge barrier remained an issue for both sides. Likewise the road net was poor, with many of the same problems that had plagued the armies in 1914 and 1915. Perhaps the only part of the 1916-1917 environment that was peculiar to it was the Baltic Islands. The German Navy expressed interest in taking the islands in December 1915, and the Chief of the German Naval Staff, Admiral Henning von Holtzendorf, pressed for an operation to be mounted against the islands. Chief of the General Staff General of Infantry

37 Johnson, Topography and Strategy in the War, 56.
39 Johnson, Topography and Strategy in the War, 180-1.
Erich von Falkenhayn, concerned about the impending offensive at Verdun, rejected Holtzendorf’s entreaties on the grounds that no troops were available for such an operation. A second proposal along the same lines by Holtzendorf in March 1916 was again turned down rather curtly by Falkenhayn.41

Falkenhayn’s fall and his replacement by the duumvirate of Hindenburg and Erich Ludendorff, along with the seizing of Riga, resulted in the matter of the Baltic Islands being reopened. By late September 1917 the navy staff and the German high command (Oberste Heeres Leitung or OHL) had put together a plan, and the navy assembled a task force to transport the German XXIII Reserve Corps (essentially a reinforced infantry division) to landing sites on Ösel.42 The landing, which began on 12 October 1917, ended five days later with the islands in German hands and the
conclusion of the last action between the German and Russian navies in the Baltic at Moon Sound. The action, named ALBION, proved to be the most successful amphibious operation of the war.\(^{43}\) Although the environments of 1914-1915 and 1916-1917 had their own peculiar elements, both had a number of commonalities that presented possibilities and limitations in the operational realm of warfare. The vast distances and the need for usable space gave each side the ability to make a major attack at the time and place of that side’s choosing. This practice was most successfully employed, however, on the southern side of the eastern front, where usable space was relatively plentiful. The two best examples of this were Mackensen’s initial attack at Gorlice-Tarnow on 2 May 1915 and Brusilov’s offensive at Lutsk on 4 June 1916.\(^{44}\)

The advantage conferred by assembling an attack force at a time and place of one’s choosing was magnified by the fact that the defending side was often hamstrung in its ability to respond because of the relative paucity of lateral lines of communication. This was particularly true in the case of Mackensen’s attack at Gorlice-Tarnow and to a lesser extent at Second Masurian Lakes. The initial success of Brusilov’s offensive also derived from the ability of the Russian artillery to disrupt the Austro-Hungarian lateral lines of communication near the front, thus impairing any immediate defensive response.\(^{45}\)

The ability to concentrate a force at a particular sector on a front that was often lightly manned, plus the paucity of lateral communications, also meant that the attacking side could attain operational surprise, even if tactical surprise was lost. Thus operational security was a critical prerequisite for a major offensive. In cases where the Germans and Austro-Hungarians were operating in concert, German officers would conduct reconnaissance wearing Austro-Hungarian uniforms, or at least parts of uniforms, most notably the distinctive Austrian peaked cap.\(^{46}\)

\(^{43}\) Germany, Der Weltkrieg 1914 bis 1918, 13:205; DiNardo, ‘Huns with Web-Feet’, 413; Barrett, Operation Albion, 228-9; Stone, Russia’s Army in the Great War, 303-4.


\(^{45}\) Robinson, Grand Duke Nikolai Nikolaevich, 231-2; DiNardo, Breakthrough, 142; Danilov, Russland im Weltkriege 1914-1915, 505; Jones, ‘Imperial Russia’s Forces at War’, Military Effectiveness, 1:310; Stone, The Russian Army in the Great War, 129; Dowling, The Brusilov Offensive, 68.

security measures included moving assault forces into their attack positions under cover of darkness or terrain, and not having newly deployed artillery batteries use registration fire. Brusilov used deception to create uncertainty on the part of the Central Powers as to where on Brusilov’s front the blow would fall.47

Another impact the environment of the eastern front had on operations was increasing importance of the aircraft, especially for reconnaissance. Prior to the war, the mission of reconnaissance belonged to the cavalry. On the eastern front, Austria-Hungary had put considerable expense into its cavalry arm, while the Russian army also undertook a considerable reform of its cavalry during the first years of the twentieth century, under the aegis of Grand Duke Nikolai. In both cases the returns on such major investments were questionable. With the bulk of the German army deployed to the west, only the 1st Cavalry Division was assigned to the defence of East Prussia.48

Given the distances involved, it is not surprising that Austria-Hungary, Germany and Russia all took a serious look at the emerging technology of aircraft before the war. While the Russians tended to focus on individual achievements in aircraft design and use, and the Austro-Hungarian effort suffered from typical underfunding, the German approach was more systematic. In 1913 the German army had even gone so far as to publish formal doctrine for the employment of aircraft in a variety of roles.49

From the start of the war, both sides used aerial reconnaissance, with mixed results. In Galicia Brusilov noted that owing to the few poor quality aircraft available, Russian aerial reconnaissance ‘was quite inadequate’. The Austro-Hungarian aerial reconnaissance effort was largely a failure, although there were instances when accurate information arrived in a timely manner.50 German efforts at aerial reconnaissance started off poorly, with Mackensen’s XVII Corps walking into a Russian ambush at

50 Brusilov, A Soldier’s Notebook 1914-1918, 43; Wawro, A Mad Catastrophe, 176; Rauchensteiner, Der Erste Weltkrieg, 198.
Gumbinnen on the basis of faulty air reports. German aviation, however, quickly redeemed itself. Aerial reconnaissance provided Hindenburg and Ludendorff with the information that helped them in the execution of the encirclement of the Russian Second Army at Tannenberg. Hindenburg himself went so far to say that without German aviation, the victory at Tannenberg would not have been possible.\footnote{Foerster (ed.), \textit{Mackensen}, 38; Germany, Reichsarchiv, \textit{Der Weltkrieg 1914 bis 1918}, 2:90; Showalter, \textit{Tannenberg}, 180; Hoffmann, \textit{War Diaries and Other Papers}, 1:40; Hermann von Wilamowitz-Moellendorff, ‘The Airmen of Tannenberg’, n.d., Nachlass Ernst Canter, BA-MA N 50/2; Richard L. DiNardo, ‘German Air Operations on the Eastern Front, 1914-1917’, in Peter Pastor and Graydon A. Tunstall (eds), \textit{Essays on World War I} (Boulder, CO: Social Science Monographs, 2012), 66.}

Thereafter, German commanders embraced the possibilities in reconnaissance offered by aviation. Accurate German aerial reconnaissance paid dividends in the Warsaw campaign of 1914 and especially at Gorlice-Tarnów.\footnote{Germany, Reichsarchiv, \textit{Der Weltkrieg 1914 bis 1918}, 5:444; Foerster (ed.), \textit{Mackensen}, 76; German Eleventh Army, Order for Aerial Reconnaissance, 6 June 1915, BH-KA 8R/11/1; DiNardo, \textit{Breakthrough}, 140.} Emphasis on aerial reconnaissance was magnified by the fact that the Germans gave up rather quickly on the notion of using cavalry for reconnaissance. By June of 1915 the German army in the east concluded that its cavalry was inadequate in three ways. First, there was simply not enough of it for the spaces that needed to be covered. Second, German cavalry was hopelessly outnumbered by Russian cavalry, and its Cossack units especially. Finally, when it came to actually finding information and reporting, German cavalry was not very good at it.\footnote{Bavarian 8th Reserve Division, Excerpt from the Campaign Experiences of the German Eastern Army, June 1915, BH-KA 8R/11/1.} German reliance on aerial reconnaissance (enhanced by increasingly sophisticated aerial photography) continued over the rest of the war. It was also increasingly connected with the gaining of air superiority. On the eastern front, gaining air superiority depended on relatively small margins. Nonetheless, the Central Powers’ air superiority proved crucial in several ways. First, German and Austro-Hungarian aerial reports kept commanders well apprised of the movements of Russian reinforcements well behind the lines. Second, reconnaissance aircraft could also spot for heavy artillery batteries, a critical advantage given the difficulties in amassing large stocks of shells before an attack.\footnote{Foerster (ed.), \textit{Mackensen}, 148; German Eleventh Army, Special Order Nr. 28, 15 May 1915, BH-KA 11/43/4; DiNardo, ‘German Air Operations on the Eastern Front, 1914-1917’, \textit{Essays on World War I}, 75; German Eleventh Army, Special Order Nr. 57, 14 June 1915, BH-KA 11/43/4; DiNardo, \textit{Breakthrough}, 89.} In addition, the Germans in particular could and did undertake strategic bombing operations, as they did against Bucharest, Cernavoda and other strategic targets in the Romanian campaign. Finally, air superiority prevented the still inadequately equipped Russians...
from doing the same things.\textsuperscript{55} Thus air power helped the Germans overcome the operational challenges presented by space and distance on the eastern front.

The final major way in which the environment of the eastern front influenced operations was in the approach to warfare that was taken, especially by the Germans and Austro-Hungarians. In pre-war planning, certainly Conrad sought the assistance of the Germans in an offensive to cut off Russian Poland, and presumably the Russian armies mobilised therein. He continued to believe, despite all evidence to the contrary, that the Germans would indeed launch an offensive south across the Narew.\textsuperscript{56}

Over the initial period of the war, two schools of operational thought developed. The epicentre of the first was the major German headquarters in the east (\textit{Oberbefehlshaber Ost}, more popularly known as \textit{Ober Ost}), headed by Hindenburg and his hard-driving and ambitious chief of staff, Erich Ludendorff. The two men, after the experience of Tannenberg, continued to look for that decisive battle of annihilation, something that had been a hallmark of pre-war German military doctrine and operational planning.\textsuperscript{57}

With Tannenberg in the rearview mirror, Hindenburg and Ludendorff spent their entire tenure at \textit{Ober Ost} until they succeeded Erich von Falkenhayn as head of \textit{OHL} in August 1916, looking for the decisive battle of annihilation on the eastern front. Their first attempt was in the winter of 1915. German commanders had high hopes for the attack planned to encircle and destroy the Russian Tenth Army at the Masurian Lakes.\textsuperscript{58} In the actual event, the Second Masurian Lakes, the combination of reasonably competent Russian command, tough Russian resistance and the harsh winter conditions served to frustrate German hopes. Ultimately, the Germans were


\textsuperscript{58} Erich Ludendorff to Helmuth von Moltke, 27 January 1915, \textit{Nachlass} Erich Ludendorff, BA-MA N 77/2; Kosch to Wife, 5 February 1915, \textit{Nachlass} Kosch, BA-MA N 754/2; Germany, Reichsarchiv, \textit{Der Weltkrieg 1914 bis 1918}, 7:157-8.
able to encircle and destroy only one corps from the Russian Tenth Army. The Russian Northwest Front responded with an attack of its own, so that at the coast of significant casualties on both sides, ultimately Ludendorff could claim only a tactical success at best.59

The other approach was reflected in the Gorlice-Tarnow campaign conducted by Mackensen and his chief of staff, the able Hans von Seeckt. Using a large force built up in secret and heavily reinforced with heavy artillery, and a carefully considered plan, the German Eleventh, along with parts of the Austro-Hungarian Third and Fourth Armies, effectively tore a hole in the defences of the Russian Third Army. Mackensen’s infantry, advancing in close coordination with the artillery, achieved a deep penetration of the Russian defences on a front too wide to be sealed off. The initial advance, combined with the Russians being hamstrung by a lack of lateral communications, triggered a cascade of retreats, with the Germans and Austro-Hungarians pursuing. This method produced lots of Russian casualties and prisoners, but very little in the way of encirclements, unless the Russians proved accommodating in this regard, like Lavr Kornilov’s 48th Infantry Division.60

Once Mackensen’s force, however, reached a point about 145 kilometres from its railhead, the advance had to give way to an operational pause. The railroad had to be brought forward and ammunition stocks rebuilt, especially in regard to heavy artillery. Once a sufficient amount of ammunition had been collected, the artillery and air detachments displaced forward, and aerial reconnaissance conducted, the offensive could resume. This method served Mackensen and Seeckt well in the advance across Galicia, first to Przemsyl and then later to Lemberg.61

The difference between the competing methods was best illustrated in the argument over what course to pursue after the fall of Lemberg. Seeckt, convinced that any attempts to envelop Russian forces east of Lemberg could be evaded, suggested an alternative. Anticipating Lemberg’s capture, on 15 June 1915 Seeckt sent a detailed memorandum to Falkenhayn. Once Lemberg and the surrounding area had been


taken, Seeckt proposed that Army Group Mackensen, with the German Eleventh, plus the Austro-Hungarian Second and Fourth Armies, turn north and advance along the Bug River towards Brest Litovsk, some 316 kilometres from Lemberg. Seeckt’s idea implied that Mackensen’s advance would be complemented by an offensive aimed south towards Brest Litovsk by Ober Ost.\textsuperscript{62}

To be sure Ludendorff did envision taking Brest Litovsk, but that would be only a subsidiary thrust. Hindenburg’s ambitious chief of staff had a plan that was much more in accordance with the pre-war concepts of both Schlieffen and later Moltke. The major attack would be undertaken by the Nieman Army, aimed at the Russian fortress of Kovno. Once Kovno was taken, the advance would then move on to Vilna, and perhaps ultimately to Minsk, effectively cutting off all of the Russian forces in Poland in a much deeper encirclement than that envisioned by Seeckt.\textsuperscript{63} Ultimately Falkenhayn, who had already consulted with both Seeckt and Mackensen, sided with them over Ober Ost and a furious Ludendorff at a contentious meeting at Posen on 2 July 1915.\textsuperscript{64}

Subsequent analysis has compellingly argued the notion put forward by Seeckt and agreed to by Mackensen and Falkenhayn was far more attuned to the logistical realities of the eastern front than Ludendorff’s more ambitious concept. The distances involved made Ludendorff’s notion impractical. Even with the rapid capture of Kovno, Vilna was still 94 kilometres away, plus Minsk was a further 260 kilometres beyond that. In addition, the area between Vilna and Minsk had limited rail communications. The logistics of such a move was further complicated by the Russian practice, sometimes by deliberate policy and sometimes by sheer happenstance, of burning everything that could be of use, especially food.\textsuperscript{65} In contrast, the area over which the offensive conceived by Seeckt would unfold was much better served by a relatively dense railway Network. Even with the gauge barrier to contend with, Seeckt’s concept, supported by the methodical approach to operations adopted by Mackensen’s forces, was far better adjusted to the logistical limitations of the front than the concept suggested by Ober Ost.\textsuperscript{66}

\textsuperscript{62} German Eleventh Army, Estimate of the Situation as of Noon. 15 June 1915, BA-MA RH 61/1536; DiNardo, \textit{Breakthrough}, 107.

\textsuperscript{63} Ludendorff, \textit{Meine Kriegerinnerungen}, 114; Manfred Nebelin, \textit{Ludendorff: Diktator im Ersten Weltkrieg} (Munich: Siedler, 2010), 186; Germany, Reichsarchiv, \textit{Der Weltkrieg 1914 bis 1918}, 8:125; DiNardo, \textit{Breakthrough}, 107.


Ironically, even though Hindenburg and Ludendorff did unseat Falkenhayn and take over OHL, on the eastern front the method pioneered by Mackensen and Seeckt remained predominant. In all of the important offensives of 1916 and 1917 on both sides, in no case was an encirclement attempted. Perhaps the lone exception was the last major operation on the eastern front, the landing on Ösel, since the German landing force was able to seize the causeway between Ösel and Moon, thus cutting off the remainder of the Russian garrison on Ösel.67

So what can one conclude this examination of the operational environment of the eastern front in the First World War? An interesting commonality was the number of prominent commanders on both sides in the titanic struggle between Adolf Hitler’s Nazi Germany and Joseph Stalin’s Soviet Russia a generation later in the Second World War did their share of fighting on the same front as young officers. The list included some of the top practitioners of mobile operations on both sides. Gerd von Rundstedt, for example served on both the Narew River front in 1915 and later in the Carpathians. Wilhelm von Leeb and Fedor von Bock were staff officers in Mackensen’s Galician campaign, while Erwin Rommel’s exploits in Romania marked him as an up-and-coming combat leader. On the Russian side, officers such as Mikhail Tukhachevski, Aleksandr Svechin and Yakov Alksnis became major theorists, only to die in Stalin’s purges. The survivors, such as Georgi Zhukov, Ivan Konev and Konstantin Rokossovsky, played important parts in the war’s later campaigns.68 Perhaps the most notable thing is the permanence of much of the subject matter discussed here. With the exception of fortresses, all of the elements considered earlier figured prominently in the campaigns conducted during 1914-1917.69 One suspects that even with the capabilities of today’s military forces, many of the factors discussed previously would still figure prominently in the planning and conduct of operations. Thus, while the capability of military forces is often in flux, other elements of warfare, such as the impact of geography, space and distance on operations, remain eternal.

Cracking the Citadel: Allied Operations to Expel North Vietnamese Forces from Hue during the 1968 Tet Offensive

Erik Villard

The five-week US and South Vietnamese operation to reclaim the fortress city of Hue from North Vietnamese and Viet Cong invaders during the 1968 Tet Offensive is arguably the most famous and widely-studied urban battle of the Vietnam War, drawing comparisons to Stalingrad, Fallujah, and other apocalyptic urban battles from living memory. In the historical literature as well as in the popular imagination, the defining feature of the battle for Hue was stone or bricks walls—the towering battlements of the Hue Citadel, the imposing stone tower gates that pierced its walls, the white-washed brick homes with their terra-cotta tiled roofs, and the concrete reinforced government buildings on the south side of the Perfume River built during the heyday of French colonialism. The high walls and sturdy construction that characterised much of the architecture in Hue virtually guaranteed that the allies would pay a heavy price to re-take the city, and would end up destroying much of the former imperial capital in the process. However, this focus on walls and stone obscures another crucial aspect of the battle: the role of water. Hue was a city surrounded, bisected, and divided by water; rivers, streams, canals, ditches, and pools, spanned by bridges of various sizes at dozens of locations, defined the landscape for the 120,000 people who lived there more than the high walls that surrounded the city. By focusing on this aspect of the battle of Hue, it becomes clear that the initial Communist success as well as their eventual failure had more to do with waterways than it did with walls.

Hue sat on a bend of the Perfume (Hoang) River seven kilometres southwest of the South China Sea; the river divided the city into two sections. On the north bank stood the Citadel, a six-square-kilometre fortress constructed in the first three decades of the nineteenth century under the supervision of Emperor Gia Long and
his Nguyen dynasty successors. Modeled after the Forbidden City in Beijing, the Vauban-style fortress was built in the shape of a diamond, with its four corners pointing to the cardinal directions of the compass. The stone-reinforced walls that encircled the city rose up to eight metres high and averaged some fifteen metres in depth. Ten gates pierced the massive city walls, four on the southeastern side, and two each on the remaining walls. A deep moat filled with lily pads surrounded the walls, and a narrow strip of inhabited land surrounded the moat. Beyond that was another river, the main channel of the Perfume River along the southeastern wall, and a navigable branch of the Perfume River that surrounded the other three walls of the Citadel. A shallow canal cut through the heart of the Citadel, winding a crooked course from the middle of the southwestern wall to the middle of the northeastern wall. A pair of culverts connected the interior city canal with the canals outside. In more peaceful times boats traveled from the Perfume River into the city but now barbed wire blocked both culverts. The southeastern section of the Citadel contained the Imperial Palace, a walled and moat-ringed inner compound covering nearly a square kilometer that had housed the royal family between 1802 and 1945.1

Above: View of the Hue Citadel on the northern bank of the Perfume River.
Below: Detail of a MACV pictomap showing the southern section of Hue with custom annotations added by the author.
The smaller and newer part of Hue lay on the south side of the Perfume River, a bustling residential and business community that contained numerous public buildings including the prestigious Hue University, the province headquarters and its associated jail, the main hospital, and the treasury. Southern Hue, half the size of the Citadel, was also known as the Triangle because it resembled an irregular triangle bounded on the south by the Phu Cam canal, on the east by a stream known as the Phat Lac, and on the northwest by the Perfume River. A pair of bridges offered the only ground line of communication between the two halves of Hue. The Nguyen Hoang Bridge spanned the Perfume River near the eastern corner of the Citadel. The traffic on Highway 1, the main north-south road in I Corps, entered the Triangle by crossing the Phu Cam canal at the An Cuu Bridge, continued north across the Nguyen Hoang Bridge, curved around the western side of the Citadel, and then headed north again, passing over the small An Hoa Bridge which crossed the narrow river just beyond the northwestern corner of the Citadel. Fifteen hundred metres to the west of the Nguyen Hoang Bridge was the disused Bach Ho Railroad Bridge which a person on foot might cross, though at some peril.

Despite Hue’s size and importance the city had relatively few defenders within its limits. On the eve of Tet, the greater metropolitan area contained less than a thousand South Vietnamese troops on active duty. Some of the garrison was on leave to celebrate Tet, either at their homes in the city or elsewhere in neighbouring districts. The headquarters of the South Vietnamese 1st Infantry Division, commanded by
Brig. Gen. Ngo Quang Truong, made its home in the walled Mang Ca compound in the northern corner of the Citadel, which featured a mini-citadel just beyond the main walls called the Tran Binh Dai to which the Mang Ca defenders might retreat in an emergency, and which overlooked a dock facility on the edge of the Perfume River. Apart from General Truong’s headquarters staff and a handful of support units, the only combat units in the Citadel were the division’s 36-man Reconnaissance Platoon and its reaction force, the elite Hac Bao (Black Panther) Company. General Truong’s other reserve force, a troop of M41 light tanks, was laagered on Highway 1 two kilometres south of the Triangle. In an emergency, he could also call on two South Vietnamese airborne battalions and a troop of armoured personnel carriers that operated ten kilometres to the north of the city at a Highway 1 outpost called PK-17.2

The American presence in the city was minimal, with only 200 or so troops on assignment there at any given time. Approximately one hundred US Army advisers and administrative personnel as well as a few Marine guards were headquartered in a lightly defended compound a block and a half south of the Perfume River, on the east side of Highway 1 just across from the university. A rotating group of staff personnel from the compound were stationed at General Truong’s headquarters day and night. Other US and Australian advisers were out in the countryside accompanying South Vietnamese units.

The closest regular US combat units were stationed to the southeast of Hue. A battalion from the 101st Airborne Division currently attached to Maj. Gen. John J. Tolson’s 1st Cavalry Division defended LZ El Paso, seven kilometres southeast of the Citadel via Highway 1. Elements of the 1st and the 5th Marine Infantry Regiments operated from Phu Bai, fifteen kilometres southeast of the Citadel, under the control of Task Force X-Ray, a brigade-size component of the 1st Marine Division. Task Force X-Ray had the dual mission of protecting the C-130 airfield and adjoining logistical base at Phu Bai, as well as preserving the line of communication on the fifty-kilometre stretch of Highway 1 between Phu Bai and the Hai Van Pass, just north of Da Nang. Each day, truck convoys departed from the offloading and storage facilities of US Navy Force Logistics Supply Group-A in Da Nang, traveled twenty kilometres up and through the winding Hai Van Pass, and then on to Phu Bai and LZ El Paso where they deposited the supplies needed by Task Force X-Ray and the 1st Cavalry Division. A different set of truck companies based at LZ El Paso made daily trips up Highway 1 as far as Quang Tri City to deliver supplies to the forward bases of the 1st Cavalry Division.

General Truong was eager to see General Tolson’s division, which had just moved into northern I Corps during the last few weeks, get situated and properly supplied as soon as possible. There were signs that the 6th PAVN Regiment and the 12th Sapper Battalion, units which operated from the mountains northwest of Hue, intended to attack the capital. What Truong did not know was that the enemy had recently shifted several more regiments and support units into the area and formed a new tactical headquarters, the Hue City Front, to control them. Among the new arrivals was the 7th Battalion of the 29th Regiment, 325C PAVN Division, which had recently been operating near Khe Sanh. The 5th PAVN Regiment came down from Base Area 101 and the 4th PAVN Regiment came up from the southern part of Thua Thien Province. Other reinforcements included an artillery battalion armed with 122-mm. rockets, two sapper battalions, two 82-mm. mortar companies, two 75-mm. recoilless rifle companies, and two 12.7-mm. heavy machine gun companies. Counting the Viet Cong units that operated near the capital, the enemy had gathered an attack force equivalent to at least fourteen battalions.³

The Hue City Front divided its command into two wings. The southern group consisted of the 804th, 815th, and 818th Battalions of the 4th Regiment, the 1st and 2nd Sapper Battalion, and several heavy weapons companies. The northern wing consisted of the 800th, 802nd, and 806th Battalions of the 6th Regiment, the 12th

³ Trinh, Tri-Thien-Hue Theater, 21-2.
Sapper Battalion, the 416th Battalion of the 5th Regiment, the 7th Battalion of the 29th Regiment, and a pair of heavy weapons companies. The enemy units left their mountains camps on the evening of 29 January and began marching toward the city.

General Truong was unaware of their approach, but the wave of Communist attacks which hit almost a dozen towns in II Corps and southern I Corps on the night of 29-30 January 1968 convinced him that his own city was in danger. He canceled holiday leave and instructed the Regional and Popular Forces units near Hue to remain on twenty-four-hour alert. Truong instructed his staff to sleep inside the Mang Ca compound for the next few days and sent half of his Black Panther Company across the river to defend the provincial headquarters. The general also dispatched his Reconnaissance Platoon four kilometres up the Perfume River, knowing that enemy units were likely to march along its course to find their way to the city at night.4

General Truong received his first warning sign at 2200 on 30 January when Regional Forces troops reported seeing enemy soldiers sneaking past the An Hoa hamlet near the northwestern tip of the Citadel. Pursued by gunfire, the shadowy figures disappeared back into the night. Two hours later, Truong’s Reconnaissance Platoon reported that several enemy battalions were marching past their concealed position to the west of Hue, heading toward the Citadel. Truong ordered his scouts to return to the Citadel at once; he would need every soldier he could get to ward off the coming assault.5

At 0333 on 31 January, a Viet Cong signal flare burst over Hue. Enemy agents from the Hue City Unit, dressed like regular civilians but carrying automatic rifles and pistols, emerged from safe houses in the Citadel that their network had been using as secret operating bases for the last several years. Some cut the telephone lines that led into General Truong’s headquarters. Others killed the South Vietnamese troops standing watch at one of the southwestern gates and then opened its doors for the 800th Battalion, the 802nd Battalion, and the 12th Sapper Battalion that were concealed in the farmlands nearby. After rushing through the southwestern gate, the 800th Battalion veered north to attack the Tay Loc Airfield while the remaining units plunged east into the heart of the city.6

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Meanwhile, a company from the 806th Battalion seized the An Hoa Bridge which spanned the moat near the western tip of the Citadel. A team of forty sappers—the shadowy force briefly glimpsed earlier that night—scaled the northwestern wall of the Citadel and then captured a gate so a second company could enter the city. The combined force then headed east to attack General Truong’s headquarters. The remaining two companies from the 806th Battalion occupied a cemetery about a kilometre to the north to block Highway 1. The remaining elements of the northern attack wing—the 416th Battalion of the 5th Regiment, and the 7th Battalion of the 29th Regiment—overran the hamlet of Thon La Chu, several kilometres to the west of the Citadel, which then became the enemy’s main logistical waypoint for troops and supplies coming from the western hills to reinforce the 6th PAVN Regiment in the Citadel.

On the south side of the Perfume River, the attack force spearheaded by the 804th, 815th, and 818th Battalions of the 4th Regiment flooded into the Triangle, overrunning most of the allied military and government installations apart from the US MACV compound and the South Vietnamese provincial headquarters. The enemy did not press his attack against the MACV compound, which was not one of his main targets, concentrating most of his troops in the western half of the Triangle in order to seize the South Vietnamese administrative buildings, his primary objective. The defenders at the provincial headquarters managed to hold out for a day before being overwhelmed. By that point, most of the Citadel had also fallen into enemy hands apart from the Mang Ca compound and the Tay Loc Airfield headquarters, both of which were partly protected by canals which allowed their defenders to concentrate their strength.
Though the enemy seemed to be on the verge of total victory when daylight came on the morning of 31 January, he made several key errors at this point which allowed the allies to go on the counter-attack right away. Most critical of all was his failure to destroy the An Cuu Bridge which spanned the Phu Cam canal into southern Hue. By failing to destroy this bridge, allied reinforcements based at Phu Bai and other locations on Highway 1 to the south of Hue would be able to enter the Triangle with tanks, armoured personnel carriers, and trucks loaded with troops and supplies. The enemy’s failure to destroy the An Cuu Bridge remains an unsolved mystery, though the fog of war likely contributed to the error. The 4th PAVN Regiment’s main effort was directed against the western side of the Triangle, and its battalion and regimental headquarters quickly lost touch with many of their subordinate units once the battle had been joined. If the North Vietnamese sapper team ordered to destroy the An Cuu Bridge had been killed before completing their mission, or had destroyed the wrong bridge (there were at least seven spanning the Phu Cam canal), the regimental headquarters might not have learned that something had gone wrong until it was too late.

Likewise, the enemy committed a serious error on the north side of the Perfume River by failing to attack or at least besiege the Tran Binh Dai mini-fortress, an extension of the Mang Ca compound, that jutted out beyond the northeastern corner of the Citadel. A battalion from the 6th PAVN Regiment tried to penetrate the Mang Ca compound from inside the Citadel, but could only attack the one side of General Truong’s headquarters not protected by water. All attacks failed. Meanwhile, the Tran Binh Dai fortress and its adjacent dock facilities on the Perfume River received some sniper fire but otherwise faced no real danger. The twin failures to destroy the An Cuu Bridge and isolate the Tran Binh Dai gave the allies the bit of luck they so desperately needed.

As soon as the fighting broke out on the morning of 31 January, the MACV advisory group notified the Marine headquarters at Phu Bai and asked for help. The commander of Task Force X-Ray, Brig. Gen. Foster C. LaHue, agreed to send a reduced company to reinforce the advisory compound. He had little else to spare. All of his outposts from the Hai Van Pass to Phu Bai were under attack, and enemy sapper teams had mined or cratered a number of locations on that fifty-kilometre stretch of Highway 1. The road to Da Nang was closed, and General LaHue saw his first priority as restoring that line of communication so truck convoys could once again start delivering supplies to Task Force X-Ray and the 1st Cavalry Division. At that stage, neither the marine command nor anyone else at III Marine Amphibious Force appreciated the extent of the crisis in Hue. Several days would pass before he and other U.S. commanders outside of the city understood the monumental scope
of the enemy effort there. As a result, the marines sent to reinforce Hue would be venturing into the unknown.7

At 0830, a reduced company from the 3rd Marine Division boarded trucks at Phu Bai and, along with two US Army trucks armed with quad .50-calibre machine guns, headed north toward Hue. En route, the task force encountered four Marine M48 tanks pulled up on the shoulder of Highway 1. Their crews explained that they had been headed for the Navy loading ramp just north of the MACV advisory compound when they had been informed that Hue was under attack. The tankers agreed to join the task force as it continued up Highway 1.

The column crossed the An Cuu Bridge without incident, heading north into the Triangle until it reached a spot where the buildings gave way to rice fields on either side for a distance of five hundred metres. Anything crossing that exposed section of highway would be a conspicuous target and there was only room enough for two vehicles to travel side by side. A vehicle disabled or destroyed by enemy fire might end up blocking the entire road. Fearing his men would be butchered in the back of the trucks before they reached the advisory compound, the Marine officer in charge of the column radioed Phu Bai for reinforcements.

A second Marine rifle company joined the convoy a short time later, and with the US tanks in the lead, the entire column headed north onto the exposed causeway. As expected, the task force came under heavy fire, but the volume of suppressive fire poured back by the Marine tanks and Army gun trucks, plus two Marine rifle companies, allowed the column to inch forward without taking serious casualties. Four hours later, the tail end of the column managed to reach the MACV compound. It was clear to them, at least, that the enemy in Hue was much stronger and more determined than anyone at Task Force X-Ray headquarters had suspected.

Knowing that General Truong’s headquarters was in peril, General LaHue ordered the Marine task force to cross the river and fight its way to the Mang Ca compound. The American M48 tanks were too heavy for the bridge, however, so two Marine infantry platoons went forward instead. As soon as the Americans appeared on the bridge, the walls of the Citadel erupted with enemy machine gun and small arms fire. Several marines fell dead or wounded, and when the others reached the far side they discovered that the fishing shacks and shanty homes that lined the river bank were filled with North Vietnamese snipers. With a third of their number now dead

7 Unless otherwise noted, the following section is based on Historical Study 2-68, Operation Hue City, 31st Mil Hist Det, Aug 68, Historians files, CMH; AAR, The Battle of Hue, 45th Mil Hist Det; AAR, NVA/VC Tet Offensive: Hue, 1st Inf Div Adv Det, Adv Team 3.
or wounded, the two platoons doubled back across the bridge and returned to the advisory compound carrying all of their fallen. That evening, the marines and US Army advisers spent a mostly sleepless night in the compound while General LaHue and the III Marine Amphibious Force headquarters tried to piece together what was happening in Hue.8

Meanwhile, General Truong was using the lifeline provided by the Tran Dinh Dai fortress and the intact bridge that lay in its shadow to bring reinforcements into the Mang Ca compound. Shortly after 0900, the South Vietnamese 3rd Troop, 7th Cavalry, and the South Vietnamese 7th Airborne Battalion rolled out of PK-17 and headed south on Highway 1. When the mechanised column got to within around 500 metres of the northwestern corner of the Citadel, soldiers from the 806th Battalion who had concealed themselves among the tombstones of a graveyard to either side of Highway 1 opened fire with a torrent of rocket propelled grenades and automatic weapons fire. The initial fusillade destroyed two of the twelve M113 armoured personnel carriers and brought the column to a halt.9

The commander of the South Vietnamese task force reviewed his options. His troops were beyond friendly artillery range and the worsening weather ruled out the use of air strikes, but he was under orders to reach General Truong’s headquarters as quickly as possible. Finding no alternative, the airborne commander opted for a frontal assault. The armoured personnel carriers tried to suppress the enemy with their .50-calibre machine guns as the South Vietnamese paratroopers charged into a withering storm of fire. Almost half were killed or wounded in that desperate advance. The survivors fought their way to the middle of the cemetery and then hunkered down, unable to advance or retreat. The South Vietnamese battalion commander radioed for reinforcements, and the I Corps headquarters released the 2nd Airborne Battalion which was waiting in reserve at PK-17. Coming down Highway 1, the 2nd Battalion swung east and then executed a flanking attack against the 806th Battalion. The manoeuvre relieved some of the pressure on the 7th Airborne Battalion but failed to dislodge the North Vietnamese battalion from the southern part of the cemetery.

The exchange of gunfire tapered off as darkness crept over the cemetery. The South Vietnamese soldiers spent a cold and miserable night shivering among the headstones but when they awoke the next morning, 1 February, they discovered that the 806th Battalion had abandoned the graveyard and pulled back into the Citadel.

8 Son, The Tet Offensive, 1-2.
9 DoD Intel Rpt no. 6027541968, 16 Sep 68, sub: After Action Report, 40.
Around noon, several Hac Bao soldiers met up with the South Vietnamese task force and led it east cross-country to the bridge at the Tran Binh Dai, allowing the column to enter General Truong’s besieged headquarters through the rear gate of the Mang Ca compound.10

By the morning of 1 February, the battle for Hue was only beginning—indeed, it would last for another four weeks, becoming the longest and bloodiest engagement of the Tet Offensive—but the momentum had shifted decisively in favour of the allies. Once the MACV compound and the Mang Ca compound were no longer in danger of being overrun, and with both able to receive troops and supplies via Highway 1 and the boats using the Perfume River, the allied counterattack would gradually gain strength, pushing out from these enclaves and joined by units from the 1st Cavalry Division which attacked and eventually cut the North Vietnamese supply line that passed through Thon La Chu, west of the city. While it is fitting that the battle for Hue be remembered for the bitter, street-to-street fighting that exacted such a heavy toll on the combatants and civilians residents alike, the battle would likely have gone on far longer and been more costly if not for the Communist’s failure to utilise the rivers and canals of Hue more strongly to their advantage.

10 Ibid., 42.
Counterinsurgency Doctrines:
Principles and Practical Examples from
Iraq and Afghanistan

Bill Ardolino

The study of counterinsurgency doctrine (COIN) became a renewed focus of
academics and the US and allied militaries during the recent wars in Afghanistan
and Iraq. The broad-based application of the doctrine and a surge of US forces were
key factors in the improvement of Iraq’s security during 2006-2008,¹ and COIN
later achieved notable, though less dramatic gains in Afghanistan, particularly in the
southern portion of the country.²

When applied with appropriate methodology, a sufficient force structure, and
requisite strategic patience, counterinsurgency doctrine can achieve significant
security progress. But COIN also possesses several requisite and limiting factors,
and it is imperative for political and military leaders to understand its promise and
limitations as the current conflicts with the Islamic State and other international
jihadist insurgent groups escalate, notably in Syria, Iraq, and Afghanistan.

Counterinsurgency is obviously any military attempt to defeat an insurgency,
through a variety of possible tactics and strategies. ‘Counterinsurgency doctrine’ as
defined in this paper, and as exemplified by the US Army and Marine Corps manual
on counterinsurgency updated in December 2006, is a modern interpretation of
this effort that, specifically taking into consideration political, social, and media
environments, attempts to defeat an insurgency via combined efforts comprising

¹ Stephen D. Biddle, Jeffrey A. Friedman, Jacob Shapiro, ‘Testing the Surge: Why Did Violence
Decline in Iraq in 2007?’, International Security (Summer 2012).
both traditional military and civil components. Security, civil affairs, institution-building, humanitarian, and other elements work in concert to defeat an asymmetric insurgency by attempting to conquer the ‘human terrain’ and build local government and security capacities rather than attempting to merely defeat an opposing conventional military force or take physical terrain.

A simpler distillation of the doctrine is that it is an effort to combat the enemy while winning the favour of a critical majority of the local populace, which will in turn reject the insurgents and deny them the ability to operate within their midst. It is often associated with the platitudinous ideal of ‘winning [the] hearts and minds’ of local civilians. A more realistic distillation of the doctrine, most notably illustrated by the political realities that drove the Anbar tribal ‘Awakening’ in Iraq, is that it’s an attempt to destroy an insurgency while angering the local population a great deal less than the insurgents do.

There are basic principles—at personal, tactical, and strategic levels—that are crucial to the successful execution of COIN. Notably, these components work synergistically, and their whole has an effect greater than the sum of its parts. When the effort reaches a critical mass, it can change the nature of the battlefield and choke the life out of an insurgency. Because of this collaborative effect, the doctrine must be attempted with a focus on these principles and most or all of its components in place at once and in force, or not attempted at all. The piecemeal application of COIN is insufficient for success and can be counterproductive.

And while most of the general principles of counterinsurgency remain the same when executed in any environment (e.g. urban vs rural), there are differences; notably in the force structure required for the different settings, the ability of insurgents to blend with the population and infrastructure, and the second-and-third order effects of mistakes made by counterinsurgents.

\textbf{Principle: Enable your true counterinsurgents}

Not everyone who fights an insurgency is good at it. Individuals, especially young military men who are primarily trained to function as conventional warriors and encouraged to have initiative and aggressiveness, can find it frustrating to fight

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asymmetric opponents who plant improvised explosive devices, deploy snipers, and execute ambushes from hundreds of metres away before running from a stand-up fight. The relative lack of opportunity to decisively close with and engage the enemy, particularly when insurgent attacks result in death or grievous injuries to comrades, can exasperate counterinsurgents and lead to mistakes.

The best counterinsurgents are individuals who can function in this environment without losing patience or sight of the strategic goal to defeat the insurgency by winning the cooperation of the local populace. They are typically men and women who possess specific personal traits that include emotional maturity, local language skills, basic cultural awareness and curiosity, empathy, and good interpersonal skills. Ideally, good counterinsurgents are also very good at employing violence when necessary. And the COIN superstars are those with the ability to bring all of these skills to bear and quickly escalate to kill insurgents or deescalate to stay a trigger finger in quickly moving combat situations.

Practical Examples

On the morning of 09 January 2007, a squad of Marines from third platoon, Alpha Company 1/24, entered the village of Albu Aifan on Fallujah’s restive southern peninsula. Their mission was to conduct a presence patrol and a ‘key leader engagement’ with sheikhs of the village’s eponymously named subtribe of the larger Albu Issa tribe. Days earlier, the company had made a tentative alliance with the tribe’s Paramount Sheikh and his ambitious nephew, Sheikh Aifan Sadoun al Issawi. Both sides were testing the nature of the relationship. Shortly after the squad’s arrival, gunfire erupted just outside the village. A team of four Marines who were closest to the sound moved toward the disturbance on foot, and almost immediately a sedan sped around a corner. A young Iraqi sitting on top of the passenger side door brandished an AK-47.

The sergeant at the head of the small column had ‘positive ID’ on a weapon and had been briefed on ‘al Qaeda drive-by shooting teams’ in the area. He made the decision (which was both rational and legal under the rules of engagement at the time) to shoot. Immediately after he fired, the car skidded to a halt. And almost as

5 Author interviews with more than one hundred Marines, including Alpha Company 1/24 and 3/24, the Fallujah Police Transition Team in January and September 2007, and other units, conducted between 2006-2012.

quickly, the young sergeant realised that he had shot the wrong guy. If the car was full of al Qaeda insurgents the driver would have tried to speed off, rather than hit the brakes. The Marine had likely shot an armed member of the tribal militia that had just allied with the Americans.7

Chaos ensued. The men in the car got out, crying and yelling, and their wounded friend fell from the passenger side door. Civilians from seemingly every corner of the village poured into the street, grieving and voicing their anger with the four Marines, who huddled close to each other for protection. They were soon surrounded. The crowd’s anger grew, and some of the Iraqis were armed. The Marines’ response would determine the extent of the day’s tragedy, their survival, and the survival of the fragile tribal alliance.8

Fortunately, none of the four Marines—a sergeant, a corporal, and two lance corporals—panicked. They defaulted to their crowd control training: projecting authority and disarming as many Iraqis as they could. Pivotaly, despite their fear, no one squeezed off a round. And the situation was kept to a slow boil long enough for a corpsman to provide aid to the mortally wounded militiaman, followed by the arrival of Sheikh Aifan, who spoke to the crowd and defused the burgeoning riot.9

This scenario illustrates the possibility of mistakes, and the necessity of quick thinking and restraint in the fluid environment of a counterinsurgency, as well as the outsized impact decisions by individuals can have on an overall campaign. Confused targeting and the tragic death of the militiaman did not spiral into a larger tragedy because four young Marines were well-trained, and did not lose their heads and default to aggression in a terrifying situation.

Crucially, the nascent alliance between the Marines and the Albu Aifan subtribe was preserved. This cooperative security agreement became the most important accomplishment of Alpha 1/24’s deployment and soon established itself as a key factor in securing Fallujah. Thus, the course of the war in Fallujah was affected by the fluid decisions of four enlisted Marines on 9 January 2007, and they ultimately chose well enough.

7 Author interviews with Dockter, Paredes, Tha’er Khalid Aifan, and Williams.
8 Author interviews with Cambpell, Dockter, Greco, HM2 Ruben Muñoz, Paredes, Lance Cpl. Dickie Prince, aCJ’ Wadhah Sahib, and Williams.
Former Marine Lance Corporal Jared Kimmey was another example of a ‘strategic corporal’, defined here as a soldier who can have outsized responsibility and impact relative to his rank during a counterinsurgency. By most accounts, including his own, Kimmey was not the best ‘garrison Marine’, having problems adhering to some of the Corps’ rote discipline and grooming standards. But when he deployed to Fallujah’s restive southern peninsula in 2006, his teammates came to recognise and employ him as a counterinsurgent resource.

The reasons for his success were straightforward. Crucially, he was considered effective and cool-headed under fire. But beyond that, Kimmey possesses a personality that gave him a natural aptitude for COIN. He was described as friendly and culturally curious, with good interpersonal skills, and he became a relatively proficient Arabic speaker. This combination of traits made him a valuable COIN asset who served as a liaison with Iraqi civilians, helped defuse tense crowd control situations, and developed valuable local sources that provided actionable intelligence on the insurgency.

The focus on a junior Marine who had good language and interpersonal skills might seem anecdotal during an academic treatment of military doctrine. But effective COIN is unusually shaped by the personalities of those attempting to implement the doctrine, and individuals sharing these simple traits can have a dramatic impact on winning the human terrain. It is a primary responsibility of leadership at every level in a counterinsurgency to identify and empower individuals who possess these and similar abilities, either through the official chain of command or through less traditional, ad hoc means.

Within the inflexible hierarchy of a military chain of command, enabling good counterinsurgents can be difficult and even problematic when individuals (notably officers) are not easily replaced. The simplest and obvious strategy in recognising and enabling good counterinsurgents is one that governs any military operation: leaders must place variably led units within the chain of command in positions to exploit their talents and minimise their weaknesses. For example, a US Marine company commander in Fallujah during 2006-2007 deployed his platoon commanders who

12 Ibid.
took to the doctrine at the forefront of census patrols, detainment operations, and local leader outreach efforts, while less naturally adept or ready platoons conducted other essential functions (such as serving as a Quick Reaction Force (QRF) and route and Forward Operating Base (FOB) security).\(^{13}\)

Beyond the chain of command, an adaptable leader will create ad hoc positions and responsibilities suited to the talents of junior enlisted personnel and other individuals who display counterinsurgency talent, but don't necessarily possess the official rank to utilise these abilities in traditional leadership roles. Another example from Fallujah involved tasking Marines with computer and analytical skills to a Company intelligence cell responsible for aggregating intelligence, working with detainees and their Human Intelligence Exploitation Team interrogators and organising census and other data into an electronic database that mapped the population and insurgency in the area. While this effort showed only modest gains at the beginning of the deployment, it became a crucial component once other aspects of the COIN effort—especially an eventual alliance with local tribal leaders—fell into place. The aggregation of information, including census and geographical data combined with local human intelligence, granted unit leadership an understanding of the Area of Operations (AO), the identities and tribal affiliations of insurgents, and their tactics and methods of movement.\(^{14}\)

In addition, platoon-and-squad level Marines with good language and interpersonal skills were assigned as ‘scribes’, with the responsibility of interacting with local civilians and recording information as they performed a basic census of local residents on Fallujah’s peninsula. As the face of COIN operations and a key liaison with the civilian population, it is important for leadership to identify and assign individuals with natural aptitude for this task.\(^{15}\)

There are a host of other examples of great COIN operatives and their actions in Fallujah, from a corpsman who helped calm a riotous crowd by treating an injured civilian, to a civil affairs team that dramatically improved the atmospherics in a city neighbourhood by rebuilding a culturally important cemetery wall, but the overall lesson remains the same. Identify the individuals who are good at the doctrine, and empower through both traditional and creative means.


\(^{14}\) Author interviews with Cpl. Joshua Clayton, Howe, and Whisnant.

\(^{15}\) Author interview with Hoffmann, Greco, Lance Cpl. Guadalupe Ponce, Sgt. Joel Zavalavargas, and Whisnant.
Principle: Restrain Bad Decisions and the People who Make Them

The inverse of enabling those who are good at counterinsurgency is appropriately training and restraining those who are not only not good at the doctrine, but actively bad at executing it. Individuals who consistently make mistakes or even occasionally make a huge one not only don’t help in a counterinsurgency, but they can actively destroy or severely disable the overall effort. An unscientific, but illustrative ratio: for every 10 things a counterinsurgent force does to positively influence the population—from guarding local elections, to restoring utilities, to delivering food supplies—the majority of those efforts will go under- or unappreciated in the local consciousness, while the balance can be easily wiped out by one mistake—which usually involves killing the wrong people.

Unnecessary and counterproductive civilian casualties stoke insurgent support and have the potential to alienate sources of intelligence who are key to identifying and unraveling insurgent organisations. In an urban insurgency, this effect is magnified given the tight confines and greater concentration of civilians. Recognising the limitations of certain weapons systems is important, for example. Artillery becomes exponentially less useful in an urban setting, and one errant air strike on an apartment building in the middle of a city can have second and third order effects that will not only result in tragedy, but can derail an entire campaign.16

It is perhaps intuitive to suppose that a plurality of individuals making rash decisions comes from the junior enlisted ranks. Young men who are primed and trained to be aggressive warriors sometimes miss the big picture and are most often in harm’s way, with their fingers on the trigger. But people who are bad at counterinsurgency inhabit all levels of the chain of command, including the highest levels of military and political leadership. All should be trained, ordered, or dissuaded from making bad decisions to the extent possible.

Practical examples

In retrospect, some enlisted Marines who operated in the Fallujah area expressed regret about the treatment of civilians and potential insurgents during their deployment. Men who had been frustrated at asymmetric attacks that killed or wounded their friends sometimes defaulted to aggressive tactics, with one Marine matter-of-factly

stating that ‘sometimes we were a little hard on them’, specifically referring to rough physical treatment of suspected insurgents or the destruction of private property during raids.\footnote{Author interviews with various US Marines (names withheld due to agreement).}

While shoving individuals or breaking furniture may not be the worst of the many terrible things that happen during the course of a war, the contexts of counterinsurgency and Fallujah in particular are important. By one officer’s estimate, intelligence on detainees during the early portion of a 2006 deployment to the area was only accurate about 30 per cent of the time.\footnote{Author interview with Greco.} Thus, 70 per cent of raids had the potential to needlessly anger individuals who were innocent (or relatively innocent), turning them away from a potential alliance with US forces and actually creating new insurgents or passive supporters of the insurgency. This possibility was especially relevant in a tribal culture like Fallujah that demands revenge (or restitution) for insults to honour and the imposition of shame.\footnote{Hussein Hassan, ‘Iraq: Tribal Structure, Social, and Political Activities’, \textit{Congressional Research Service Report for Congress}, Library of Congress, Washington, DC, 15 March 2007, 1-4; Lin Todd et al., ‘Iraq Tribal Study: Al-Anbar Governorate—The Albu Fahd Tribe, the Albu Mahal Tribe and the Albu Issa Tribe (n.p.: Global Resources Group and Global Risk, 2006), 2-39, 2-46–2-51.}

Thus, the utility of no-knock (hard knock) raids needs to be weighed in the context of the accuracy of the intelligence that generates them, the local culture, the specific threat posed by the target, and the resulting benefit or harm they can cause during a COIN operation. As one expert US Marine counterinsurgent summarised years after his deployment, ‘Sometimes we accomplished more by knocking on doors rather than kicking them in.’\footnote{Author interview with CW05 James Roussell.}

The concept of collective punishment is another example of an action that is directly at odds with the successful application of COIN. A civil affairs officer who operated in Fallujah during 2006-2007 cited an incident where members of a unit operating near the town of Ferris proposed cutting off the water supply to the city after a spate of attacks from the area. The plan was rationally rejected in the face of opposition, which included feedback from civil affairs personnel who pointed out that it would cause a humanitarian crisis.\footnote{Author interview with Cpt. Jodie Sweezey.}

Arguably, counterinsurgency executed in modern political and media environments sits at the opposite end of a continuum bookended by total war doctrine (as exemplified by allied strategic bombing to break the will of a population
to resist during World War II, or the military philosophy of General William Tecumseh Sherman during the American Civil War). The farther any military effort strays toward the middle of this continuum, while ostensibly trying to pursue either counterinsurgency doctrine or total war, the likelier any effort is to fail and often be counterproductive.

An example that illustrates the perils of overly aggressive action at the highest levels of the chain of command was seen in the aftermath of the killing and mutilation of four security contractors in Fallujah on 31 March 2004. When images of the contractors’ charred bodies hanging from the Old Bridge at the edge of downtown were broadcast on news outlets throughout the world, the Bush administration advocated an overwhelming response to the incident. The US military leadership in Baghdad interpreted this directive as a broad-based offensive into the city to eliminate the insurgency. US Marine leadership responsible for the AO raised objections to this course of action, arguing for a more targeted military response to apprehend or kill the individuals responsible for the atrocity. But these objections were overruled. The result was the ironically titled ‘Operation Vigilant Resolve,’ later known as the ‘First Battle of Fallujah,’ a large-scale offensive into the city in April of that year.

When the Marines surrounded and pushed into Fallujah, they met heavy resistance and a number of casualties were sustained on both sides. As the battle progressed, coverage from the international and particularly Arab media emphasised civilian casualties. Some reports of this nature were correct, while some analysts assessed that certain news outlets presented exaggerated claims. Regardless of the exact nature of the casualties, the operation generated intense political pressure on the Bush administration and the US military to stop the operation. Crucially, a number of Iraqi politicians, some of whom had approved the offensive in concept, called on the US to cease its attack. US forces subsequently declared a ceasefire on 19 April 2004, followed by a withdrawal from the city on 1 May 2004, after failing to achieve objectives.

24 Dick Camp, Operation Phantom Fury: The Assault and Capture of Fallujah, Iraq (n.p.: Zenith Press, 2009), 79–80; ‘Complex Environments: Battle of Fallujah I, April 2004,’ report by the U.S. Army National Ground Intelligence Center, 31 March 2006, 6, 13-14; Bing West, No True Glory: A Frontline Account of the Battle for Fallujah (New York: Bantam, 2005), 90-3; ‘In the absence of countervailing visual evidence presented by authoritative sources, Al Jazeera shaped the world’s understanding of Fallujah without having to counter the scrutiny of informed skeptics. The resulting political pressures constrained military actions … against Fallujah.’
This sequence of events during and after the First Battle of Fallujah represents an excellent example of poor choices and counterproductive efforts during a counterinsurgency campaign:

- The ambitious operation failed to achieve the objective of destroying or diminishing the insurgency in Fallujah.
- The nature of the offensive, during which a large portion of the city’s population fled, inflamed local sentiment.
- International media and political response reflected negatively on US forces and affected the conduct of the war.
- And finally, and perhaps most significantly in the case of the Fallujan insurgency, the abortive declaration of a ceasefire and the failure of US and Iraqi forces to achieve their objectives caused insurgents to perceive and publicise the battle as a defeat for the US and victory for the insurgency. As a result, Fallujah became a symbol of resistance, described by one former insurgent as ‘the home of the heroes who fought the Americans’, and subsequently a magnet for nationalist insurgents from throughout Anbar province and salafist-jihadists regionally and worldwide.26

Rather than diminishing resistance in Fallujah, Operation Vigilant Resolve only helped metastasise insurgency, notably increasing the influence of its radical salafist-jihadist components. The aftereffects of the battle in turn necessitated the much bloodier Operation Phantom Fury (‘The Second Battle of Fallujah’) later that year, illustrating that overly aggressive decisions (followed by an indecisive prosecution of them) can have paradoxical effects on an insurgency.

**Principle: Kill and capture the right people. And keep the latter imprisoned.**

De-emphasised in much of the literature on counterinsurgency doctrine (including the first two principles in this paper) is the essential truth that fighting an insurgency remains a form of warfare, and judiciously but strongly applied violence is a key component of success. Given the necessity of restrained rules of engagement to avoid alienating the civilian population, the research focus on the softer side of modern COIN is understandable; nevertheless, failing to deploy sufficient force against insurgent organisations can spell failure for a campaign, whereas the inverse creates benefits beyond the simple number of insurgents who are killed or imprisoned.

26 Author interview with Col. Faisal Ismail Hussein al Zobaie.
The maxim that you can’t kill or capture your way to victory over a modern insurgency is generally true in isolation, as well as in the context of the specific doctrine—overly liberal rules of engagement and widespread detention can and have alienated civilian populations and created multiple new insurgents for every enemy taken off of the battlefield—but a sufficient amount of offence remains necessary.\textsuperscript{27}

Simply put, killing or capturing a critical mass of insurgents yields the obvious dividends. It diminishes the insurgent organisations’ manpower, restricts their ability to operate with impunity, creates pressure on their organisations, which can place them at a tactical disadvantage, and it can limit the spectacular nature of their attacks. But another benefit to potent offensive operations against insurgents is less obvious or well-understood: it is beneficial to convince the local population that a counterinsurgent force is an effective power and a potential security partner.

**Practical Examples**

A less-publicised factor in the counterinsurgency campaign that rapidly improved security in Iraq during 2007 was the deployment of special operations cells in various areas that exclusively focused on training elite local security forces and running nightly raids to capture or kill insurgents. While the tribal Awakening, surge of forces, and overall COIN strategy deservedly get the greatest amount of credit for improvement in security, these targeted kill or capture efforts put enormous pressure on the insurgency and took a number of opponents off the battlefield without generating sufficient local backlash to undermine the overall effort.\textsuperscript{28}

Another example of why a potent offence remains integral to COIN is the necessity of persuading both local civilians and indigenous security forces that counterinsurgents are a serious, competent power. A great deal of media coverage and analysis has focused on complaints, many of them legitimate, about US-led efforts in Iraq and Afghanistan, including mass detentions during early phases of the conflicts, liberal rules of engagement causing civilian casualties, and the humanitarian abuses at Abu Ghraib prison, for examples.\textsuperscript{29} Less appreciated are different forms of complaint from Iraqis, notably potential tribal allies in Iraq's Anbar province: that US forces failed to kill or capture enough of or the right insurgents during operations, that US

\textsuperscript{27} Col. Craig A. Collier, ‘Perspective: Two Cheers for Lethal Operations’, *Armed Forces Journal*, 1 August 2010.


\textsuperscript{29} ‘Public Opinion in Iraq — First Poll following Abu Ghraib Revelations’, Independent Institute for Administration and Civil Society Studies (Conducted 14-23 May 2004, Published 16 June 2004).
interrogation and detention methods were too soft, and—perhaps one of the most relevant gripes—that once the Americans detained suspected insurgents, including hard-core radicals, they often released them, enabling them to take revenge on members of the local population who were seen as collaborators.\footnote{Author interviews with Cpt. Joseph Lizaragga, Roussell, and Col. Faisal; Jeffrey Azarva, ‘Is U.S. Detention Policy in Iraq Working?’ \textit{Middle East Quarterly} XVI:1 (Winter 2009), 5-14; Terrance McCoy, ‘Camp Bucca: The US prison that became the birthplace of ISIS’1’, \textit{The Independent}, 4 November 2014.} Understandably, this disincentivised Iraqis from providing intelligence to counterinsurgents.\footnote{Author interviews with Maj. Jason Brezler, Greco, Hoffmann, Maj. Brian Lippo, Sheikh Aifan, Col. Faisal, ‘Mohammed’ (a Fallujan police officer; interview conducted in confidentiality and the name withheld by mutual agreement), Sheikh Mishael Abdullah Owdeh, ‘Sam’ (an Iraqi interpreter working with the Marines; interview conducted in confidentiality and the name withheld by mutual agreement), Roussell, Maj. Tad Scott, and Whisnant; ‘Report: Abu Sadoon 12 26 06’ (document in the author’s possession); Gary W. Montgomery and Timothy S. McWilliams (eds), \textit{Al Anbar Awakening, vol. 2, Iraqi Perspectives: From Insurgency to Counterinsurgency in Iraq, 2004-2008} (Quantico, VA: Marine Corps University, 2009), 89.}

Sheikh Aifan Sadoun al Issawi, the tribal leader near Fallujah who became a pivotal US ally, discussed this problem with Marines at the outset of their relationship (as summarised in a report authored by US personnel):

\[\text{[The sheikh]} \text{ turned the discussion to how a 3-6 month detainment undermines the entire process and doesn’t provide any hope or incentive for the average Iraqi to provide information on the insurgents.}\]

Paraphrased, many Iraqis wondered why they should provide information about insurgents to the Americans, when suspects would be released and wreak brutal revenge on suspected collaborators and, often, their families. Aifan added in another interview: ‘[T]he insurgents, if they had any suspicion that a guy had any relationship with the Americans, they cut off his head.’\footnote{‘Report: Abu Sadoon 12 26 06’}. In the end, civilians and local security forces do most of the heavy lifting involved in defeating an insurgency. Nevertheless, it is difficult to develop these local allies if they view the counterinsurgent force as ineffective or weak.

\textbf{Principle: The Primacy of Information. Cultivate it and share it.}

Possibly the most important commodity in any modern counterinsurgency, besides dubiously controllable political factors, is information. Developing intelligence and figuring out who is who while waging a conflict where enemies effortlessly blend
with civilian noncombatants is basically the only way to effectively militarily degrade a irregular insurgent force. The importance of intelligence and the ability to distinguish civilians from the enemy takes on even greater importance in an urban setting, where targeting needs to be more selective and there are simply more people and structures among which the enemy can hide.

There are a number of avenues to developing intelligence on an insurgency, its players, and its habits. The most basic methodology, and one that should represent one of the first orders of business for a force dedicated to waging a long-term counterinsurgency, is the conduct of a census of the population. As implemented by US and allied forces in Iraq and Afghanistan, the effort involves speaking to citizens during regular security patrols and gathering basic information on those who live in the area: names, occupations, family and tribal affiliations, and similar data.

A census does not typically yield immediate or dramatic results, but its importance is two-fold. First, it serves as a mechanism for basic interaction with the civilian population during security operations, facilitating the establishment of relationships with individuals who may decide to help counterinsurgent forces. Second, the raw information generated by a census has inherent value, both in the broad sense of understanding the atmospherics and demographics of an area of operations, as well as an exponential value developed when the information is stored, analysed, and combined with other, more specific methods of intelligence gathering, such as aerial reconnaissance, signals intelligence, detainee interrogations, and the brass ring of COIN operations: actionable, reliable, local, human intelligence.

A counterinsurgent force operating in unfamiliar territory, and especially within a foreign culture and language, will never be able to understand the area and differentiate insurgents from non-combatants and potential allies as well as the locals will. Thus, while winning the ‘human terrain’ is the stated goal of COIN, and success is the true aim, developing the cooperation of human intelligence sources is the unstated bridge between the two.


35 Author interviews with Clayton, Howe, Whisnant, and other personnel; Counterinsurgency, FM 3-24, MCWP 3-33.5.
Practical Examples

Alpha Company 1/24 Marines utilised various intelligence sources on Fallujah’s peninsula in 2006-2007 with each source complementing others. A sometimes tedious census conducted early in the deployment allowed Marines to gain a basic understanding of the area and its inhabitants, and the value of this effort exponentially grew after an infusion of intelligence from local allies developed during the deployment. For example, gathering data on family affiliations and the typical location of subtribes in certain villages allowed the Marines to surmise insurgent activity based on tribal affiliation. Though not a definitive correlation for each individual, the insurgency on the peninsula turned out to be strongly associated with a parallel intertribal war between competitive factions within the Albu Issa tribe; the official leadership of historically dominant subtribes such as the Albu Aifan tended to have become more interested in restoring the traditional tribal hierarchy than insurgency, whereas traditionally less powerful and wealthy subtribes (many based the southern end of the peninsula) tended to be affiliated with insurgency and run villages used as staging areas for rebel groups.

The collaborative effect of intelligence, and the crucial importance of reliable, local, human sources is also illustrated by other synergistic combinations. For example, when a local tribal ally phoned in a location on a vehicle containing insurgents around Fallujah, Marines would often vector aerial assets to achieve eyes on the target. Several options were employed after the acquisition of the vehicle: if the source of the tip was considered very reliable, the target was of a particularly high value, and the observers could obtain ‘positive identification’ (PID), counterinsurgents sometimes opted for a gun run or missile strike from armed aircraft. Oftentimes, however, the Marines opted to track the movements of the insurgents, mapping each location visited by the vehicle. These locations mapped out new nodes—both physical and often familial—of an insurgent network. In turn, these areas were subsequently visited by ground forces, which often discovered additional physical intelligence or weapons caches, or they detained additional insurgents, who provided even more information during interrogation.36

The preceding example highlights the snowball effect of intelligence gathering, as well as why it is often much more effective to capture targets rather than simply kill them. Intelligence of almost all varieties often begets the obtainment of more

36 Author interviews with Clayton, Howe, Roussell, Whisnant, and other personnel, including intelligence specialists granted anonymity by mutual agreement.
intelligence, which in turn can improve security, which in turn gathers more intelligence as counterinsurgency progress acquires the cooperation of more human intelligence sources. And once the number of sources reaches a critical mass, such as that experienced after the Marines on Fallujah’s peninsula developed alliances with the leadership of a key tribe, the effect can be quick and exponential.\(^{37}\)

It is also important for counterinsurgents to share intelligence effectively among relevant units operating in the same AO. For example, the conventional unit operating on Fallujah’s peninsula attempted to integrate intelligence, including their custom database, with data at higher levels in the chain of command. They were partially unsuccessful, specifically rebuffed on the idea of integrating databases due to technical issues and concerns about information technology security.\(^{38}\) The practical result of failure to share information was that the efforts of conventional units were sometimes at odds other units with responsibilities that overlapped into the area.\(^{39}\)

Specifically, special operations teams who were conducting snatch and grab operations of high value insurgent targets sometimes detained family members or close allies of the local sheikhs whom conventional counterinsurgents were trying to coax into a valuable alliance. Marine officers would subsequently field an angry phone call from a tribal leader who asked the American why ‘he’ had detained his uncle, brother, or friend, and the Marine, often unaware of the raid conducted by special operations forces, had no ready answer.\(^{40}\) The compartmentalisation of intelligence and failure to communicate across unit leadership didn’t outweigh the eventual progress made against the insurgency in Fallujah, but it could have. And it’s an avoidable breakdown in communication that should be considered by COIN planners.

**Principle: Go big**

Counterinsurgency doctrine relies on a minimum force structure to execute it properly, and that structure tends to be large.\(^{41}\) COIN is often a lengthy effort that requires a huge investment of personnel and resources, diverging sharply from the

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\(^{37}\) Ibid.

\(^{38}\) Author interview with Clayton.

\(^{39}\) Author interviews with Clayton, Howe, Roussell, Whisnant, and other personnel, including intelligence specialists granted anonymity by mutual agreement.

\(^{40}\) Ibid.

'light footprint' doctrine that was sometimes associated with former US Defense Secretary Donald Rumsfeld and other planners of the 2003 invasion of Iraq.42

The need for adequate forces is two-fold:

Given that COIN combines a variety of tasks—from reconstruction and humanitarian aid to training local security forces and traditional combat operations—a wide range of military specialities, ideally with assistance from civilian governmental organisations and the private sector, will be necessary to achieve these functions.43

Urban counterinsurgency in Fallujah required engineers and contractors to assist with the construction and repair of sewer lines, an electricity grid, and a water treatment facility.44 Suburban and rural counterinsurgency efforts in Iraq and Afghanistan have involved wooing farmers with agricultural education and seed programs, as well as having veterinarians treat local livestock and educating local ranchers about the best ways to keep animals healthy. In both settings lawyers have arbitrated damage claims from civilians and nursed along local and national judicial systems.45 Fundamentally, force structure needs to be big, and also varied, to accomplish the wide variety of military and civil functions in any given environment.

The second reason effective COIN requires a large force is counterintuitively conventional. Though the jargon of counterinsurgency doctrine novelty emphasises winning the ‘human terrain’ by gaining the cooperation of the civilian population, to do so, a counterinsurgent force needs to project into the population and interact with civilians on a regular basis. The avenue to accomplishing this goal remains having sufficient personnel to clear and then hold physical terrain.

Counterinsurgents must have the force structure to establish and maintain a presence in a target area and regularly interact with, protect, and develop relationships with the population. In addition, COIN forces need to dominate the transportation infrastructure in their area of operations in order to deny insurgents the ability to move freely, stage attacks, resupply, and conduct intimidation operations. In short,

45 Author interviews with 1st Sgt. Ken Baum, Lt. Andrew Docksey, and Whisnant.
counterinsurgents must live among the people in or on top of population centres, and they need to control the roadways, waterways, and other methods of transit used by insurgents to conduct their operations. In urban, rural, and in-between settings, the ability to do so is manpower intensive, though it has specifically different executions.46

Practical examples

A successful example of adequately resourced COIN was conducted in Fallujah by the US Marines, the Iraqi police, and the Iraqi Army during ‘Operation Aljah’ in the spring of 2007. The Marines subdivided the city into manageably-sized neighbourhoods, rolled into one in force, fought and kicked out the insurgents, and blocked off the neighborhood with roadblocks and concrete barriers.

Once basic security was established and the freedom of insurgents to move in and out of the area was limited, civilians were exposed to a battery of counterinsurgency components: a local police precinct was established; humanitarian supplies were delivered; information operation campaigns soliciting local cooperation were conducted; infrastructure concerns were addressed; local leaders were engaged; and day labourers were hired to stimulate the micro economy and drain a fraction of the insurgency’s casual labour pool.47

Once an individual neighbourhood was cleared, as less kinetic COIN components were ongoing, another neighbourhood was taken and blocked off, followed by others. Each ‘swarm’ of counterinsurgents sectioned off a manageable chunk of the city in which US and Iraqi forces could conduct the full spectrum of counterinsurgency. The net effect of this operation was to incrementally choke the life out of the insurgency within Fallujah, and deny the insurgents the mobility to stage commuter attacks and spectacular suicide bombings.48

The success of this campaign and a similar effort conducted in Anbar’s provincial capital of Ramadi relied on having enough personnel to clear neighbourhoods, execute full-spectrum COIN, and leave behind a security presence in each section of the city to cement gains.


47 Author interviews with Cpt. Mark Cameron, ‘Fallujan police volunteers 1, 2, and 3’ (granted anonymity by request), ‘Leo’ (a Fallujan interpreter granted anonymity by request), Reid, Sermarini, Taylor, and Townsley.

48 Ibid.
In contrast, deploying insufficient forces while attempting COIN is ineffective, as exemplified by US efforts in rural Khost province, Afghanistan, in 2011. Dispersion of counterinsurgent forces and tactics are different in a rural setting, but they still rely on the basic principles of controlling the avenues of movement and projecting into the population centres to develop positive relationships with local civilians that contrast with the perception of insurgents. Counterinsurgents operating in Khost circa 2011, and specifically the province’s Sabari district, did not have enough people to meet these requirements. The ‘surge’ of US forces announced by President Barack Obama on 1 December 2009 had been centred in the southern portion of the country, and thus US personnel in the district were concentrated in a Combat Outpost that conducted joint patrols with Afghan partners outside the wire before coming home to rest.49

While troops in Sabari attempted components of counterinsurgency, such as offers of agricultural assistance, attempts to empower the government, and a focus on trying to ally with local tribal leaders, they often patrolled villages that had little familiarity or working relationship with US soldiers and Afghan government representatives. Civilians sometimes projected attitudes of apathy, impatience, or thinly-veiled hostility toward Americans in villages where Taliban, Haqqani Network, and/or al Qaeda affiliates held enormous sway. Attempts at using COIN are superfluous without enough contact and security to genuinely engage civilians. Simply put, offering local farmers agricultural education and alternative seed programs are pointless in a village where counterinsurgents have no durable relationship with civilians, and the insurgency holds sway through local loyalties and threats of violent death. Successful COIN requires enough people to project into the population centres to decisively change this dynamic over time, something not evident in Sabari district in 2011.50

Principle: Go Long

A final principle of successful counterinsurgency, which resides at the strategic level and reflects the decisions of the most senior political and military leaders, is the need for strategic patience when attempting COIN doctrine. In addition to requiring large investments in training and manpower, counterinsurgency requires the up-front,


significant investment in time necessary to both realise initial security gains and attempt to maintain them (through soft power and minimum security involvement) once they are achieved.

The success of COIN can rely on local political factors that often remain out of the direct control of counterinsurgency forces; most notably, the degree of local dissatisfaction with an insurgency and the potential legitimacy of the government.\(^{51}\) Thus, even COIN that is perfectly executed at the tactical level maintains the possibility of failure and otherwise can take years to show tangible gains. And some degree of political and military engagement must be continued after initial security progress is realised, to head off the type of basic political instability under which insurgencies spark and flourish.\(^{52}\)

The most obvious cautionary examples illustrating a lack of strategic patience involve US and allied involvement in Iraq and Afghanistan.

The security improvement that changed Iraq from a chaotic sectarian conflict to a much more stable, if shaky environment was both real and dramatic. By late 2008, security incidents occurred at a fraction of the darkest days of 2007, and the extent to which Iraqi civilians—represented by both tribes and unaffiliated Iraqis—had turned on salafist-jihadist insurgents and sectarian militias was animated and heartfelt.\(^{53}\) Underlying these improvements, however, remained a marked distrust of the central government based on its efficacy and the perception (and lesser, but significant reality) of its sectarian interests.\(^{54}\) As Iraqis struggled to implement a democratic form of governance, the same sectarian, financial, and survival impulses that often made sense throughout Iraq’s history were not easily abandoned, and the nascent government required continued outside assistance to have a shot at both establishing widespread trust in a new system of government and the maintenance of basic security gains.


53 Biddle, Friedman, Shapiro, ‘Testing the Surge: Why Did Violence Decline in Iraq in 2007?’, 1; Author interviews with Iraqi tribal leaders, militiamen, soldiers, cops, and civilians conducted between 2007-2010, including Sheikh Aifan, Col. Faisal, Sheikh Ma’an, Tha’er, and multiple security volunteers, policeman, and mukhtars who were granted confidentiality by mutual agreement.

54 Author interviews with Iraqi tribal leaders, militiamen, soldiers, cops, and civilians conducted between 2007-2010.
Thus, while there is no guarantee that continued US and international involvement in Iraq would have guaranteed a perfect or even better outcome than recent events, it remained a necessary condition for the possibility of success. At minimum, US and/or international military commitment was required to continue counterterrorism operations against decimated salafist-jihadist insurgent organisations such as al Qaeda in Iraq, as well as guarantee Iraq’s territorial sovereignty (e.g., the sanctity of Iraqi airspace, which a fledgling Iraqi Air Force was unable to enforce).\textsuperscript{55} In addition, basic, robust political engagement from the US and international community was required to help stabilise Iraq’s fragile political process.\textsuperscript{56} The most important role of such involvement would have been for international advisers to continue to serve as a (relatively) neutral arbiter of Iraqi politics, prevent the growth in influence by Tehran that has now relegated the central government of Iraq to status as an Iranian client state, and guarantee the fairness and transparency of future elections, the peaceful transfer of power, and the judicial process.\textsuperscript{57}

The need for minimal engagement and the consequences for the hasty US withdrawal from Iraq are most dramatically illustrated by the actions of former Prime Minister Nouri al Maliki immediately after the departure of US forces. The day US forces officially left Iraq, Maliki ordered the arrest of Tareq al-Hashemi, the country’s Sunni vice-president. In the months and years that followed, the Maliki regime arrested additional prominent Sunnis, including parliamentarian Ahmed al-Alwani and the bodyguards of former finance minister Rafi al-Issawi, and moved with a heavy hand against mostly peaceful Sunni protests against sectarianism while executing an information campaign that depicted the broad-based Sunni protest movement as one compromised by al Qaeda.\textsuperscript{58}

While sectarian distrust and manoeuvring was never averted during US involvement in Iraq, aggressive engagement by the Bush administration conducted by political, military, and diplomatic leaders forestalled or improved upon many of the worst abuses. The lack of continuity of US policy on Iraq—in fact, its complete reversal—instituted by the Obama administration essentially guaranteed that Iraqi politics would revert to the most basic and accustomed sectarian and survival


57 Filkens, ‘What We Left Behind: An increasingly authoritarian leader, a return of sectarian violence, and a nation worried for its future’.

58 Ibid.
impulses, and squandered hard-won relationships that would now be of help in the renewed US battle against al Qaeda in Iraq’s successor, the Islamic State.59

The most puzzling and short-sighted example of the impact of this lack of strategic continuity is the fact that representatives of the US government failed to maintain contact with their natural and valuable allies against the Islamic State—the Sunni tribal sheikhs that had joined with the Americans to fight the jihadist group’s progenitor in 2006.

“‘There is no contact [with US officials] right now,’” [Sheikh Amhed Abu Risha, president of the Iraqi Awakening Council] said in September of 2012. “‘They don’t visit at all. Ever since the United States withdrew, we haven’t gotten anyone to visit.’”60

Those same, shamefully neglected allies now fight for basic survival against the Islamic State in a freshly lost Anbar province, and remain the West’s slim, homegrown hope of rolling back the tide of resurgent salafist-jihadist insurgents in western Iraq.

Afghanistan provides other lessons about the utility of counterinsurgency and its limitations, and the requirement for strategic patience, from slightly different perspectives. First, the US political and military leadership may have internalised the wrong lessons from the relatively quick success of COIN in Iraq, drawing the conclusion that the given strategy, properly executed, would result in quick gains over an 18-month period.61 This assumption is problematic for two reasons.

Notably, the success of COIN, especially when waged by a foreign military force, is specifically contingent on local political factors which are often hard to recognise but quickly shape the battlefield when they take effect (e.g. Iraq’s Anbar tribal Awakening).62 Second, Afghanistan is not the same as Iraq. Factors such as the country’s geography, its history of warfare, its comparative tribal heterogeneity, the existence of an insurgent redoubt in Pakistan, and the lack of centralised government authority make Afghanistan a much different, and in many ways more challenging environment to attempt COIN.

59 Piranha Boghani, ‘In Their Own Words: Sunnis on Their Treatment in Maliki’s Iraq’, Frontline (PBS), 28 October 2014.
60 Eli Lake, ‘Iraqi Sheik to Obama: We Miss You!’, The Daily Beast, 6 September 2012.
61 President Barack Obama, Remarks by the President in Address to the Nation on the Way Forward in Afghanistan and Pakistan, Speech presented on 1 December 2009 at the US Military Academy, West Point, NY.
Beyond that, the surge of forces and implementation of counterinsurgency doctrine announced by President Barack Obama in December 2009 had fundamental, fatal flaws that misunderstood the nature of COIN.

First, the surge and doctrine were announced at a force structure that was less than what US military leaders requested, which in turn was probably insufficient to the task. This resulted in an effort relegated to the Afghan south that attempted to strategically pressure or break the back of the Taliban on its home turf, but still enabled jihadist groups to continue their efforts in the remainder of the country. Coupled with the reality that sequential US administrations failed to achieve a political solution to the Pakistani government and military’s tacit approval of insurgent groups using portions of Pakistan as a staging area, the localised COIN effort and insufficient structure was an abortive approach.63

Second, the surge of forces was announced with a public caveat almost certainly fatal to its success: a stated timeline, after which US forces would begin to withdraw, regardless of conditions on the ground. This deadline unhelpfully telegraphed a date for insurgent planners to circle on their calendars, up until which they could lie low and following which they could assert themselves—which they are now doing, in formerly improved areas such as Helmand, Kandahar, and Kunduz.64 The hasty timeline also fundamentally misunderstood the limitations of counterinsurgency doctrine. COIN is not easily war-gamed or otherwise prognosticated given a certain set of resources and an approved strategy. While military planners might be able to relatively accurately predict a scenario in which the US fights a conventional battle against a number of militaries from other nation states, irregular insurgencies are never easy to predict. It can take a number of years to achieve security progress due to unmanageable political factors, regardless of the potency of counterinsurgent forces.65

Thus, the Obama administration’s inadequate surge and questionable employment of counterinsurgency doctrine generated the impression of seeking a quick fix to ‘the necessary war’ of Afghanistan, while never wholly investing in the success of that effort. Political and military leaders either intentionally or unintentionally confused COIN tactics with COIN strategy, relying on the former while discounting the latter.

64 The LWJ Editors, ‘Taliban controls or contests 70 districts in Afghanistan’, *The Long War Journal*, 16 October 2015.
Conclusion

Counterinsurgency doctrine can be effective when employed judiciously, with competence, and within the right political circumstances, but it does not produce miracles or results within a politically expedient timeframe.

There is a popular narrative, with no small amount of historical justification (e.g., Afghanistan, Algeria, Vietnam), that claims it is difficult or nearly impossible for counterinsurgent forces to defeat an insurgency on foreign soil. This narrative is not a maxim, however. Contraindicating it is the widespread, if transitory success by US forces attempting to secure Iraq. The surge and COIN worked in the context of an animated and dramatic ‘Awakening’ of Iraqi citizens who rejected the brutality and repression of salafist-jihadist insurgents.

But many of the lessons from Iraq are specific to the nature of that conflict, and COIN should not be viewed as a clear template for success. Political and military leaders contemplating whether to fight an insurgency, and whether or not to employ the doctrine when they do, should consider both the politics of a specific region, as well as their nation’s commitment to the effort. While COIN can work, there is little evidence suggesting that a Western democracy has the patience or political capital and leadership necessary to win a counterinsurgency in anything less than circumstances that might be considered existential to a nation, such as in response to an asymmetric attack utilising a weapon of mass destruction, or the threat posed by a failed state on a democratic country’s border.

Thus, those considering a conflict that could result in insurgency, and weighing the use of COIN in turn, should honestly evaluate whether or not they are prepared and able to dedicate the requisite training, resources, political capital, and time to such an effort. Half-hearted attempts at the doctrine are likely to fail, and they are simply not worth the loss of treasure, prestige, limbs, and lives.

Whether his halt be short or long, in wartime the map is always ready to his hand, in carriage or in tent, in camp or by the watch fire … Through all countries, for the whole duration of his life, the map follows him, pierced with coloured pins, illuminated at night by twenty or thirty candles, and a pair of compasses lying on it. This is the altar before which he offers up his prayers. It is the real home of the man who has no home.1

What is possible will depend first on geography, secondly on transportation in the widest sense, and thirdly on administration. Really very simple issues, but geography I think comes first.2

The increasing importance of terrain features and, thus, maps to mechanized military operations, has made the impact of erroneous or out of date maps potentially disastrous. Cultural features such as roads and the extent of the built-up area, may change dramatically between map survey and map printing. On a battlefield, bridges disappear, dams are breached and buildings reduced to a rubble at a speed faster than the changes can be posted to the best of maps.3

A condensed version of this paper, specific to the Second World War, was originally published as ‘Know Your Ground: Geographic Intelligence and Military Planning in the Second World War’, *Canadian Military Journal* 14:3 (2014), at http://www.journal.forces.gc.ca/vol14/no3/page53-eng.asp.


Introduction

There has always been a need for the soldier, sailor or pilot to know his terrain, sea or airspace. This knowledge is often a contributing factor to whether one lives or dies, wins or is defeated. For armies and navies, the mapping of the world around them has been a tradition for millennia. Knowledge has been collected by means of reconnaissance, to better a commander’s understanding the terrain or seas over which he must travel or fight. Knowledge of terrain is one of the few forms of intelligence that is inherently both tactical and strategic in nature. The accuracy and thoroughness of geographical intelligence and its degree of presence in the planning phases can significantly affect the outcome of both tactical and strategic operations.

The Atlantic Ocean is an example of how a geographical feature had to be considered at both the strategic and tactical levels, which required considerable planning and execution on both levels during the Battle of the Atlantic. The heavy reliance of Britain on resources from overseas allies was a strategic consideration for the British, since without a steady supply of men and materiel the war would likely be lost. The Germans realised this as well, and any major disruption or destruction of the shipping would assist in meeting their strategic aim of defeating the British.

At the tactical level during the Battle of the Atlantic, the Germans used U-boats and signals intelligence to disrupt the supply convoys to Britain. At the height of Germany’s naval success, U-boats gathered in the mid-Atlantic to hunt convoys in wolf packs, out of reach of the long-range patrol aircraft. To counter the U-boat tactics, the Allies used a combination of convoys, escorts, signals intelligence and increasingly developed technology such as airborne radar to combat German ships and U-boats.4

In the First World War, the combination of the new technology provided by aircraft and cameras provided an immediate and valuable source of intelligence for generals and their planners. The Western (European) Front was mainly static with trench warfare, and the Allies learned to rely on aerial photography reconnaissance to meet their growing intelligence needs. Additional geographic intelligence was provided by geologists for water supply and trench warfare. The Levant had wider spaces and mobile forces through most of the war, spurring a high demand for maps, as most of the territory was poorly mapped.

The Second World War and its global reach required a scale of effort to gather geographic intelligence and provide appropriate intelligence products to the military that was beyond imagination. The expanse of the Second World War also meant that many soldiers were introduced to new terrain and climatic conditions, which could differ significantly from those to which they were accustomed. Understanding these new factors and having the appropriate equipment was crucial to victory, or sometimes just bare survival in the most hostile of environments. By 1939 most generals were well schooled in the use of intelligence, aerial reconnaissance, aerial photography, and accurate maps of appropriate scales. However, there were new challenges of unfamiliar terrain and climates, which led to new demands for geographic intelligence on an unprecedented scale for major events such as amphibious landings.

This paper will explore the growth of geographic intelligence and how it was used by military planners and commanders in two world wars with a brief look at Normandy as a case study. In this paper, the term ‘geographic intelligence’ will refer not only to information concerning the physical world, but also how it was used to accurately locate both enemy and friendly forces for planning purposes.

**Geography at the Strategic Level**

The very word ‘strategy’ is not the same to the soldier, sailor or airman. The reason for this is has to do with the environment in which the concept is set. The sailor or airman thinks in terms of controlling the entirety of air and sea space in a conflict zone, while the soldier thinks in terms of theatres or campaigns. ‘Terrain’ as a word does not have deep meaning to the non-soldier, but to the soldier it is everything. It is the environment upon which he operates. For example, strategists, airmen and astronauts are used to visualising continents and oceans. Sailors look for safe ports, treacherous waters, and weather conditions. Soldiers search for the details in the terrain to be crossed or how it can be best used to advantage in a battle, ambush or defence. Geography also affects combat styles: the supporting roles of the highly technical air force and navy versus the traditional role of the army, which is to take and hold terrain.

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According to Colin S. Gray, geography is also inherent when considering following strategic factors:

- The very identity of combatants, whose status as belligerents stems noticeably from the relative location and scope of their politically organised ‘space’ which has shaped their strategic history. Israel, a Jewish state surrounded by Arab states, is perpetually preparing for an attack, while Canada sits relatively complacently, protected by three oceans, and the proximity of the USAF and the USN;

- The strategic and military-cultural characteristics of polities, influenced by the variably continental, or insular, situation of their homelands. When invaded during the past two centuries, Russia has traditionally retreated, using a scorched earth policy, buying time to prepare for their own offensive. The United Kingdome became a sea power due to invasion threats from the continent;

- The armed forces are organised largely by environment for combat (land, sea, air, and the new environments of space and cyber), with equipment specialised for tactical performance in unique geographies. US Marines are specialists in amphibious landings and small wars. Some navies are littoral specialists, others seek to rule the oceans; while armies have the more traditional take-and-hold land role. Space and cyber are new environments which have only recently been addressed by military forces. However, all environments require continually increasing technological capabilities and knowledge;

- The logistic enabler is supply and movement through geographically different kinds of ‘space’. Afghanistan, as a recent example, does not have a seaport, thus requiring all supplies and personnel to arrive either by aircraft or by overland route (train or road) through Pakistan or the longer overland route from Europe; and

- The geography and climatic factors within which armed forces must act will affect the speed of those actions. Desert, tundra and jungle with a lack of well-engineered roads will create different challenges for transporting heavy vehicles, as will the lack of a landing strip or port, denying a wider range of transport options. Or hostile nations may refuse passage, requiring the armed forces to take longer, less practical routes.9

9 Ibid., 171-2.
Based on the above factors, geography also influences the means used and manner of war fighting:

- it points towards the information to be gathered: where are the objectives, where is the opposition, where are the obstacles and channels of movement;
- it reveals if the commitment of force is within the feasibility of logistics. Possibilities for action are limited by where, how quickly and by what means the supplies of men, material and firepower can be deployed; and
- it indicates where to commit what force, where to move and deploy, where to attack/defend, advance/retreat, where to place routes, bridges, landings and defences.10

Without considering the above factors, imagination and ambition can blind one to an appreciation of what is, and what is not, practicable in the conduct of war. What the human mind proposes, geography denies: generals will attempt missions based on the belief that what they need will be readily available, but geography will have the last word on logistics if one seeks to cross the desert in the mistaken belief that sustenance is easily found or available in the quantities required by an army. Geography therefore drives and shapes the technological choices that dominate tactics, logistics, institutions, and military cultures.11

**Geology as Intelligence in the First World War**

The effective linking of geologists and intelligence within the British Army only began in the First World War for two reasons: water and defensive works. Because the armies were locked in near-static battlefield conditions, the troop concentrations had greatly increased the local population in the front-line areas of Belgium and northern France. The provision of adequate supplies of potable water became a priority, and even more water was required for the transport horses and mules. Most of geologist William King’s early work as a staff officer with the Chief Engineer of the British Expeditionary Force (BEF) consisted of compiling water supply maps for the German-occupied areas of Belgium and northern France.12

Another essential use of geologists was for mining, one of oldest applications of engineering in war, and which was employed on a vast and unprecedented scale on the Western Front from 1915 on. Major Tannat David, a geologist with the Mining Battalion of the Australian Corps, was initially the Geological Adviser to First, Second, and Third Armies in 1916. He was then posted to the Inspector of Mines office at BEF General Headquarters (GHQ). Through test bores and the collation of geological data, David provided detailed information on the extent and depth of the strata most suitable for mining. In 1917, when the front shifted to being held by firepower, and not manpower, the tunnelling companies were diverted to construct dugouts to protect soldiers from bombardment. David and King produced a completely new foundation of geological references, identifying soils and the underlying strata, and compiling the first scientific water-table maps in Europe. These maps enabled many British trenches and dugouts to be excavated or re-laid before winter rain and rising water levels made them uninhabitable. Their coloured maps and vertical sections showed where quicksand prevailed and where trenches and tunnels might be safely dug. They were eventually able to persuade GHQ to seek reports from their geological staff before undertaking a new operation or siting artillery concentrations.

Overall, geology had a subtle but deep influence on the operations of the Western Front in three ways. First, geologists located military resources such as potable water and aggregates for construction. Locating potable water near the front reduced the transport of water from rear areas in containers, reducing costs in time and effort. Aggregates, mostly from northern France and Brittany, were required for new roads and concrete emplacements. Valuable mineral resources such as coal and iron ores were mostly surveyed by civilian geologists.

Second, military engineers and geologists conducted site investigations for trenches, defensive works and dugouts, and military mining. There was little detailed site investigation completed for trenches, but the investigations for the deeper dugouts were more extensive, particularly in the reserve areas for headquarters and medical staff. Ensuring trenches and mines were appropriately sited reduced the likelihood of standing water and resulting medical issues such as trench foot, as well as helping ensure the structural integrity of mines by using the appropriate materials.

13 Ibid., 113.
14 Ibid., 113-15.
15 Ibid., 195-7.
16 Ibid., 199-200.
17 Ibid., 205.
Finally, geologists assisted with the tactical considerations of topography and best use of ground in offence and defence.\textsuperscript{18} Topographic maps at the 1:10 000 and 1:20 000 scales were used extensively for plotting offensive actions. Ground suitability surveys (trafficability or goings maps) for manoeuvring troops and tanks during offensive actions were also prepared. Maps, often prepared from aerial photography, also showed the nature of the ground following shell ruptures, and shell holes were classified as to whether they would have permanent standing water, standing water due to rainfall, or naturally drain.\textsuperscript{19}

\textbf{Aerial Reconnaissance, Aerial Photography and Cartography on the Western Front}

In the early months of the war, both sides soon became entrenched and the front became relatively static, with minimal gains or losses of ground. The armies quickly started using military aviation for aerial reconnaissance in the early days of the war. As the value of the information provided by the new discipline grew, it became more widely used from 1915 onwards. Photographs taken during artillery spotting missions assisted in tracing camouflaged artillery positions and locating other targets. They were also useful for verifying the accuracy and results of bombardments, including checking the levels of damage and identifying camouflaged positions.\textsuperscript{20}

Visibility thus became intelligence’s perceived key to the tactical deadlock, since targets had to be seen and identified before any weaponry could be effective. One factor which enabled early successes in hiding targets from ground observers was the fact that both sides were deprived of vision through combinations of smoke, gas or fog.\textsuperscript{21} An unanticipated problem facing the pilots in the early days of the war was their unfamiliarity with the terrain over which they were flying, which often resulted in lost pilots.\textsuperscript{22}

\textsuperscript{18} Ibid., 193.
\textsuperscript{19} Ibid., 209. See also Terrence Finnegan, \textit{Shooting the Front: Allied Aerial Reconnaissance in the First World War} (Stroud, Gloucestershire: The History Press, 2011), 44.
\textsuperscript{21} Occleshaw, \textit{Armour Against Fate,} 36-7.
\textsuperscript{22} Finnegan, \textit{Shooting the Front}, 30.
The increasing defensive strength of the Western Front meant that if there was to be any hope of success in offensive operations, the attacking troops needed accurate maps of enemy defenses to help identify any potential weak points, including the positions of artillery, ammunition stores, and the transport infrastructure. Every target was nearly impossible to map from the front line, as the key targets were usually located miles behind the front. Both sides therefore needed to find a way to collect information that could either be added to existing maps or produce entirely new maps. Since ranging shots usually revealed the introduction of new guns and the potential threat of a forthcoming attack, the need for secrecy changed the ways in which the guns acquired their targets. The positions of both artillery and their targets needed to be determined precisely by surveying, which led to the adoption of reference grids and battery boards.\(^{23}\)

The growth of trench warfare also meant a shift in knowledge was needed. While the enemy’s whereabouts remained important, it had to be considered within a broader context. Operational intelligence came to concentrate on enemy’s Order of Battle (ORBAT), as the commander and his staff needed to know precisely which enemy they faced. Was the enemy new, a relief or starting an offensive; what happened to the division relieved; was it on its own or were there others? As the war continued, there was a deeper significance to this information due to the growing crisis in manpower.\(^{24}\) Aerial reconnaissance provided the ability to locate targets and provide information on troop movements behind the front lines, in addition to the small details picked up by nighttime scouting parties venturing into the no-man’s land between the front lines. The combination of information contributed to indications of enemy movements and their ORBAT.

Although passive balloon-borne observation had been in use for several decades, the first big breakthrough for active aerial reconnaissance came in the Marne campaign of 1914. Captain E.W. Furse of the Royal Flying Corps (RFC) was on a routine patrol on 31 August 1914, and located a cavalry corps, identified as the spearhead of German General von Kluck’s First Army. Further reconnaissance was sent out and provided confirmation. As von Kluck’s army was drawing away from German Second Army, von Kluck was forced to cross the Allied front. Subsequent RFC reconnaissance on 3 September 1914 confirmed that von Kluck had made the


\(^{24}\) Occleshaw, *Armour Against Fate*, 37-8.
turn to cross, enabling French General de Maunoury to attack von Kluck's flanks. The BEF took the advantage and pressed into the gap between the two German armies, forcing both into retirement.25

The Battle of Neuve Chapelle in March 1915 was the first battle planned using intelligence based on aerial photography. General Haig’s senior intelligence officer, Brigadier-General John Charteris, played a major role in the British Expeditionary Force’s acceptance of aerial photography by acknowledging it as a significant resource. The aerial photographs were used to prepare maps of the German trenches to a depth of 700-1500 yards at a scale of 1:5000, with 1500 copies distributed to each corps. For the first time in the history of the British military, the British Army went into action with a total picture of the hidden intricacies of the enemy defences. British bombing parties were able to make their way without loss of time to their separate objectives, proving the value of the intelligence source.26 However, Charteris’s early acceptance of aerial reconnaissance and photography was still not the standard throughout the general staff.27 Despite this lack of acceptance, the ever-increasing demand for the most current information meant more and more resources were allocated to the development and use of aerial reconnaissance and photography.

During the last two years of the war, a great deal of the German survey effort was concerned with accurate surveys of their own rear positions and back areas.28 However, it was different at the front, since even as late as April 1917, the Germans were still using enlarged copies of the outdated French 1:80,000 map. As a result, they regularly shelled the wrong positions. While the British were able to correctly locate 93% of the German battery positions, the Germans had not located even one third of the British batteries correctly. One German map indicated only 10% of the British heavy battery positions correctly.29 The British barrage for the first massed tank attack at Cambrai in November 1917 opened with no prior registration, and was also the first completely predicted barrage in history, due entirely to survey work. The German counterattack at Cambrai similarly demonstrated the benefit of survey surprise.30

25 Ibid., 56-7. For a more detailed account of how aerial reconnaissance played a role in engagement, see Finnegan’s Shooting the Front, 33-7.
26 Finnegan, Shooting the Front, 54. Additional detail is provided of other successes, including how an artillery barrage was employed to help the infantry advance, as well as the introduction of the daily intelligence summary.
27 Occleshaw, Armour Against Fate, 54-5.
29 Ibid., 129.
30 Ibid.
Through the war, the Germans were the most technically advanced in optics, and initially ahead in air survey and precision photogrammetry. Both the French and the Germans were ahead of the British in the use of artillery boards, gridded fire-control maps, and flash-spotting. The French and Germans were first with sound-ranging apparatus but the British developed it to its most efficient, obtaining a greater number of accurate locations. The British were the first to open a battle with a predicted barrage at Cambrai, but both the Germans and British failed at projections and grids. All three armies developed similar organisations and methods to deal with geographic intelligence, which suggests that the problems were clear and solutions obvious, but there were differences in how the solutions were adopted.31

Air superiority was crucial throughout the war, both for the ability to obtain information as well as the ability to deny the enemy the same. Air inferiority meant that photographic reconnaissance did not provide as quickly as required the photographs necessary for plotting the positions of trenches and battery positions used by the enemy. General von Below, First Army Commander at the Somme in 1917, complained that the lack of information, long-range reconnaissance, artillery observation and photography, due to German inferiority in the air, severely impeded the First Army’s defence and effectiveness: ‘the German artillery fought with blindfolded eyes’.32 General Ludendorff, when preparing for the spring offensive of 1918, was fully aware of the importance of using camouflage and aerial reconnaissance as counter-intelligence measures.33

Aerial Reconnaissance, Aerial Photography and Cartography in the Levant (Palestine, Mesopotamia, Syria, and the Sinai)

Unlike the Western Front, the armies in the Levant did not have the benefit, nor the luxury, of operating in territory that had been previously mapped in detail, let alone mapped at a useful scale. Actual mapping in the Levant by the British started as early as 1841.34 By 1914, there were small scale topographic maps of the Sinai and Palestine, but they were inadequate for modern warfare. Mesopotamia was in even poorer shape, with only 1:250 000 topographic maps, which were inconsistent in quality and the amount of detail shown.35

31 Ibid., 132.
32 Ibid., 129.
33 Finnegan, Shooting the Front, 98.
35 Ibid., 144.
During the same era, British scholars conducted historical and archaeological research in eastern Anatolia and Syria, building up a detailed knowledge of topography of those regions, much of which was provided to the Royal Geographic Society (RGS). Lieutenant-Colonel Francis Maunsell, one of many British or Indian Army officers who travelled through the Levant, provided a report which contained information about travel times of the Hejaz railway in the Sinai and a list of important stations with their sidings, loading facilities and capacities. Maunsell also managed to obtain a copy of the contoured survey of the 1:100 000 map from Ma’an to Medina.36

The finished product of pre-war collection efforts were handbooks covering specific geographical regions of Turkish Arabia, compiled by the RGS and printed by the Naval Intelligence Division in 1915. The handbooks were specific wartime creations, with the sole purpose of equipping military officers, intelligence analysts, and diplomatic personnel with as much useful information as possible. They were divided by region, covering Arabia, the Hejaz, Mesopotamia, Aden and Yemen.37

At the outbreak of war with the Ottomans, it was believed that the recent 1:125 000 mapping for the northern Sinai and Negev would be adequate, as it had been accepted as being the most suitable scale for mobile operations during the Anglo-Boer War. In addition, the Suez Canal area had been mapped prior to the war at 1:50 000 by the Survey of Egypt.38 However, these existing maps proved inadequate for the kind of war the British army was forced to fight: rapid, mobile, with a requirement for accurate, timely assessments of enemy forces and defences, and great accuracy for artillery.39

In January 1915, Colonel Coote Hedley, head of the Geographical Section of the General Staff (GSGS), ordered 1:1 million scale sheets for the whole of Ottoman Empire from the RGS. The RGS created these maps based on the notes and observations of explorers, scholars and officers. Hedley was determined that a lack of good maps, a major problem during the Anglo-Boer War, was not going to hamper British action this time. The immense amount of survey work done by the British before 1914 became the geographic intelligence foundation for the conventional wartime operations against the Ottoman Empire and intelligence operations in Arabia.40

37 Ibid., 273.
38 Collier and Inkpen, ‘Mapping Palestine and Mesopotamia’, 147.
39 Ibid., 153.
40 Hamm, ‘British Intelligence and Turkish Arabia’, 219-20.
Unlike the Western Front, Palestine and Arabia had wide open spaces, dispersed enemy forces and the presence of cavalry and mounted units in Egypt, all of which were conducive to long-distance reconnaissance and raids. Reconnaissance in Egypt and Palestine was done with a combination of long distance mounted troops with reconnaissance planes for security and intelligence. Topographic information was collected mainly for examining the supply and potability of water in addition to its primary task of determining the enemy’s ability to concentrate troops and re-attack the canal. Ground reconnaissance in 1915 Sinai was limited, but throughout the war it remained the basic means of gathering information about the enemy and terrain at the tactical level. Its efficient use freed the lower echelons to an extent from their reliance on intelligence from higher headquarters, which did not always arrive in time or in sufficient detail.41

While France and Belgium had existing and adequate mapping which could be updated and corrected, in the Near and Middle East surveyors had to start virtually from scratch due to the inadequacy of existing maps.42 Photogrammetry therefore developed into the primary means for cartographic and operational mapping of territory outside British control. It proved to be of enormous value in pinpointing the precise locations of enemy posts, roads, water pipes and railways. The rapid advance of the Egyptian Expeditionary Force (EEF) beyond the frontier in August 1916 precluded the conducting of systematic field surveys, increasing the dependence on aerial photos. Terrain intelligence was focussed mainly on the routes and water sources gleaned from aerial photographs, aerial observation, the questioning of local inhabitants, and a thorough examination of captured enemy maps.43

By mid-late 1916, survey reports included information on ground characteristics, routes, vegetation, water sources and the local population. It was confirmed how the reports enhanced the picture of the terrain: ‘We found that the country was even more difficult than we had imagined and that it was quite clear that if we held this region on, advance…would be extremely difficult for the enemy …’44

Aerial photography also occupied a growing place in the verification of information from agents and in the preparation of sketches, which gave a common language for intelligence collectors and clients. Intelligence staff gradually learned

41 Ibid., 194.
42 Collier and Inkpen, ‘Mapping Palestine and Mesopotamia’, 145, 149.
44 Ibid., 195.
that photographs provided a more accurate and detailed means of recording and conveying a given situation than an observer’s eyes.45 Through 1916 and into early 1917, aerial photography in the Levant had three main aims: identify tactical targets; map the urban areas of Palestine; and prepare photo maps of specific targets. The whole photography concept was target-oriented, and intended for intelligence officers and air observers rather than cartographers.46

After the First Battle of Gaza (March 1917), the front on the Gaza-Beersheba line was stabilised, and aerial photography became increasingly important as a source of reconnaissance data and for mapping.47 By the Second Battle of Gaza in April 1917, aeroplanes were providing most of the tactical intelligence.48 However, there was a cognitive gap between the British underestimation of the (actual) enemy strength and their assessment of the Ottoman tendency to avoid large engagements and retreat at the sound of the first shot, and the discouraging reality of a stiff resistance and counterattacks which could endanger them.49

The end of the Second Battle of Gaza saw the beginning of trench warfare in the Levant, through to the Third Battle of Gaza in November 1917. Flash spotting was introduced, but it was not sustained due to the shortages of staff and stores. Sound ranging sections arrived in September 1917 and were deployed between the Mediterranean coast and El Mendur, south of Gaza.50 With this, general intelligence collection improved during this period, and improved even more when Allenby’s forces entered Palestine and were engaged with Ottoman formations. Wireless intercepts and aerial photography were particularly effective in this theatre in monitoring Ottoman and German troop movements, due to a meagre Ottoman static communication infrastructure and to the open territory.51 By January 1918, systematic photography was firmly preferred over visual identification, as it allowed for rechecking and it facilitated the accurate transfer of reference points from photograph to map, making for efficient, accurate artillery without the need for ranging shots.52

45 Ibid., 188.
46 Ibid., 199.
49 Ibid., 213.
50 Collier and Inkpen, ‘Mapping Palestine and Mesopotamia’, 149.
52 Sheffy, *British Military Intelligence in the Palestine Campaign*, 305-07.
The Levant was where aerial photography and cartography truly merged for the provision of rapid and accurate mapping. For example, a traditionally prepared map of Baghdad at 1:5280 took 10-12 weeks, while the same map using photography, mosaicking and drawing took only 18 days. Aerial photography also mitigated the difficulties in locating enemy trenches on maps containing only limited details.

More maps of towns situated beyond the front were made and published in 1917 and 1918. The Military Handbook on Palestine was distributed in June 1917, with maps made to various scales. Other maps included Jerusalem, Jaffa, Haifa and were copied from the Baedeker Handbook of Palestine and Syria, published before the war. As the handbooks did not include maps of Gaza, Beer-Sheba and Ramleh, the British had no other choice but to photograph these towns in order to complete the series of town maps of Palestine.

During the war, the Egyptian intelligence department and consular network (which ceased to exist) expanded into 16 intelligence bodies on five major fronts: Egypt and Palestine (including the Hijaz), Mesopotamia, Gallipoli, Salonika and the Mediterranean. Each department used wireless intelligence, exploited survey and mapping units, and employed available flying squadrons for visual and photo air-reconnaissance. The squadrons became the main intelligence source for enemy deployment and topographical intelligence, with aerial photography gradually replacing human air observation.

The synthesis of technology and intelligence became an integral part of command in the First World War. Planners and leaders increasingly endeavoured to ensure they had the best intelligence available, gleaned from a wide number of sources and on an increasingly wider range of subjects, to ensure the best possible chances of success. This experience created a mindset for the future leaders and planners of the Second World War, who, for the most part, were more demanding of their intelligence staff. The experiences of the Second World War would be underscored by the hard lessons of the First World War that leaders and fighters had learned. Now, more than ever, all aspects of the physical environment, from topography to geology, water tables and climatic conditions, would be critical.

55 Ibid., 39.
56 Yigal Sheffy, ‘British intelligence and the middle east, 1900–1918: how much do we know?’, Intelligence and National Security 17:1 (2002), 33-52, at 36-7. The first eight English and French planes of 1914 expanded into an armada of 450 planes by June 1918, out of a total of 2600 Royal Air Force (RAF) planes in all theatres.
Geographic and Environmental Factors in the Second World War

In the Second World War, the fighting became truly global in scope, and introduced soldiers to fighting in new climates and terrain. It was also much more mobile, not locked into trench warfare. Geologists, oceanographers, climatologists, cartographers, aerial photography, aerial reconnaissance, and other specialists all contributed to the ever changing demands for information and intelligence on new fields of battle by leaders and planners, many of whom could appreciate the value of geographic intelligence from their experiences in the previous World War.

In North Africa, soldiers had to deal with the intense sun, sand storms, sand dunes, and scarce resources which required a robust and flexible logistics network. To assist with operations, both British and German armies developed ‘goings’ maps, which indicated the difficulty for vehicle movements posed by certain ground conditions, as the road network was extremely limited, both in terms of network and quality. The lack of roads, water and petrol all were tactical and logistical nightmares, and one over which the British ultimately prevailed due to their increasing command of the air and sea. Allied air and sea superiority slowly but surely hindered German operations, primarily by restricting re-supply. The Eighth Army’s advance from El Alamein in 1942 owed much to hydro-geological studies in providing adequate supplies of potable water.

By contrast, the German army was sent into Africa unprepared, and had to rely on pamphlets such as *Military Geographical Descriptions for Libya, Northeast Africa, and Egypt*. Such pamphlets were published by the Military-Geographical Branch of the German High Command and contained limited information on cities, roads, oases, and included a general survey of the entire region. They could only be used as source of general orientation, which was nevertheless valuable primarily to higher command staff. Preparations for deployment into Africa were restricted to preparing soldiers for the desert and creating special units under the command of engineers to handle water supply problems. Water supply transportation was a serious challenge

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57 O’Sullivan, *The Geography of Warfare*, 30, and Major General Alfred Toppe, *Desert Warfare: German Experiences in World War II* (Fort Leavenworth, KS: Combat Studies Institute, August 1991), 2-3. This is an abridged version of *Desert Warfare: German Experiences in World War II*, a two-volume work originally published in 1952, and co-written with other German generals.


for the Germans as they had no tank trucks or tank trailers available. Water had to be transported in 20-litre cans, which was very tiresome and imposed an extra strain on the already stretched fuel supply services.\textsuperscript{60}

The winters on the Eastern Front were unexpectedly harsh for the German armies. The mechanisms of rifles, machine guns and artillery breech blocks became rigid, recoil liquid in artillery froze stiff and tempered steel cracked. Few German motor vehicles were serviceable, hampering the armies’ ability to manoeuvre. The 52nd Infantry Division needed 9 hours to advance 4 km, unopposed, in 1.5m of snow. The deep snow also reduced the effectiveness of small (less than 150 mm) mortar and artillery shells. Mines were unreliable under heavy snow or ice because pressure fuses would not function when covered with ice crust.\textsuperscript{61} However, the Soviet tanks, especially the T34, were effective in deep snow because of their wide tracks and high ground clearance, and were used to make paths for the Soviet soldiers.\textsuperscript{62}

Rivers were seen as both obstacles and a means of defence. Small, shallow streams in fields were not a significant challenge to tanks capable of managing rough terrain, but for larger streams and rivers both man and machine required bridges or ferries, which could act as either choke or ambush points. Depending on the construction of the bridge, large tanks or trucks were required to divert to stronger, larger bridges. The Germans, being on the defensive, were able to fortify their positions on the Rhine and did not give the bridges up easily.\textsuperscript{63}

At Arnhem, the Allies appear to have failed to understand fully the challenges of the riverine environment in which they would be operating, since their advance was stopped well before the river. The roads were high, very narrow and had only two lanes, flanked on both sides by deep drainage ditches. Vehicles were easy targets for the experienced German forces concealed in nearby forests, and their destruction frequently halted all progress on the narrow roads. Fields and orchards had intricate drainage networks which severely restricted both vehicle and troop movement, as did the swamps and marshes also located in the area. The plan to take the bridges at

\textsuperscript{60} Toppe, \textit{Desert Warfare}, 3-11.

\textsuperscript{61} Dr Allen F. Chew, ‘Fighting the Russians in Winter: Three Case Studies’, The Leavenworth Papers, No 5 (December 1981), 38.

\textsuperscript{62} Ibid., 33-8. The German Army suffered 100,000 cases of frostbite, 14,000 requiring amputation by 31 December 1941. By spring 1942, frostbite victims totalled over 250,000, more than 90% of those second and third degree cases; plus thousands of cases of pneumonia, influenza and trenchfoot. The deficiency of dead/permanently disabled/missing was 625,000 men, only a portion of whom were replaced.

\textsuperscript{63} Winters, \textit{Battling the Elements}, 141-62.
Arnhem called for a rapid approach by armoured forces to meet up with the advance airborne element, but the required high speed could not be sustained on the narrow roadways due to the actions of the unexpected German forces. The inability of the armoured forces to meet the timings and reinforce the airborne element contributed to the failure to take the bridges at Arnhem.64

Beaches created even more logistical and tactical nightmares for military planners. In amphibious warfare, the attackers must transfer from sea to ground, often requiring special assault craft suitable only for amphibious operations. If the beach is too steep or does not have the right material, tanks and other heavy vehicles may get stuck in place. The steep gravel beach at Dieppe and the volcanic sand beaches at Iwo Jima are good examples of this.65 Other important factors to be considered in selecting an appropriate landing site were any potential transportation networks and a sufficient area for staging stores, equipment and men.

In the Pacific, a long-term strategy was required to win the war against Japan. The Tarawa atoll in the Gilbert Islands, and Iwo Jima in the Japanese Volcano Islands, were key strategic islands required for the invasion of Japan. Admirals King, Nimitz and Spruance considered the Gilbert Islands a necessary part of any serious thrust at the Japanese empire, as they were Japan’s nearest base to the American supply routes from San Francisco to Hawaii and Australia. The key advantage to starting with the Gilbert Islands meant that planes leaving there could cover the Samoan area and deter forces from striking the neighbouring Marshall Islands. This was important since only the large land based planes provided a stable enough platform for quality air-photo reconnaissance. Admiral Spruance later commented that US could not attempt to capture any defended island without adequate aerial photographs.66

The invasion date for Tarawa was based on tidal information provided by British shipmasters who were familiar with the area, as well as charts initially drawn up by the US Navy in 1841. Favourable, but not optimal, high neap tides were projected for the morning of 29 November 1944, which would provide an estimated 1.5m of water over the coral reefs. As the landing craft draught required 1.2 m, it was thought that .3 m of water would be a safe margin. Instead, the first three waves of tracked vehicles barely made it over the coral, while succeeding waves of vehicles ended up being stuck on the coral, 450-900m from shore. The Marines had to wade ashore,

64 Ibid. It is not clearly identified in the source if it was a failure in intelligence or in planning, but there was reference to the planners failing to discuss their plans with the Dutch.
65 Ibid., 192-3.
66 Ibid., 221.
unprotected under heavy gunfire from the well-fortified Japanese. An unanticipated longshore current (parallel to the shore) also caused landing craft to drift far south after leaving their host ships.67

Iwo Jima was the key launching point for invading Japan. Strategically speaking, it was perfectly placed to allow the Americans to protect their bases in the Mariana Islands, cover attacking forces approaching the Japanese islands, and provide fighter escort for long-range air operations. It would serve the secondary purpose of taking out Japanese radar capable of warning the home islands of imminent attack. Finally, it was chosen over other islands in the area because it was the only one to meet requirements for suitable beaches and have sufficient adequate terrain for several airfields. However, aerial photography could not identify the full extent of Japanese defences. Mount Suribachi and the island’s plateau to the northeast were heavily fortified with commanding views of both beach landing sites. The lower slopes were armoured with well-prepared defensive positions, mutually supported by a honeycombed network of tunnels and caves, and was ‘one of the most elaborate and effective examples of terrain reinforcement ever accomplished.’68

Sources

National intelligence organisations had to labour hard to meet the growing intelligence and planning needs of their armies, navies and air forces. Each country varied in the use of its intelligence capabilities. For example, in Japan, the commanders disdained the intelligence officers, the Germans had adversarial relations within their forces and the Soviets forced every person, civilian and military, to provide intelligence. American intelligence agencies competed fiercely against each other for resources and validation. The Allies, although taking advantage of their intelligence staff, did not go to the same domestic extremes as the Soviets.69

Within the American Office of Naval Intelligence, researchers focussed on elements related to amphibious operations: defensive systems; landing beach characteristics from water approaches to land exits; hydrologic conditions; coastal topographic characteristics; weather and climactic properties; and political and economic forces.70 Sections such as the Research and Analysis Section of the Office of Strategic

68 Ibid., 228.
69 Background information from the following: David M. Glantz, Soviet Military Intelligence in War (London: Frank Cass, 1990); David Kahn, Hitler’s Spies: German Military Intelligence in World War II (New York: MacMillan, 1978); and Ken Kotani, Japanese Military Intelligence in World War II (Oxford: Osprey, 2009).
Services (OSS) were responsible for topographic maps, including the procurement of collections containing intelligence and reference foreign map coverage.\textsuperscript{71}

The Royal Air Force had information ranging from tides to geology, and provided photographs of installations and cities collected from various newspapers and periodicals.\textsuperscript{72} The Royal Navy had a wide collection of oceanographic and port information from its extensive history of sailing the world’s oceans, and had access to additional information from Allied merchant captains. Friendly neutrals may also have provided similar information.\textsuperscript{73}

Air and surface reconnaissance was vital for army, navy and air force. With increased Allied aerial reconnaissance, German U-boats and ships were successfully tracked and sunk during the Battle of the Atlantic. In Africa and on the Eastern Front, both sides used aerial reconnaissance to scout the terrain as well as to identify the strength and location of enemy forces. Ground reconnaissance parties with embedded engineers scouted out the terrain to find enemy defences as well as to find safe routes for tanks and other heavy vehicles. The Soviets were not always successful at ground reconnaissance in the early stages of the war, resulting in their tanks being stuck or mired down in tank-hostile terrain such as swamps.\textsuperscript{74}

Surface reconnaissance for the Normandy invasion was also carried out by means of midget submarines, operated by Combined Operations Beach Reconnaissance and Assault Pilotage Parties, and which carried specially trained volunteers close to the beaches. Their task was to swim ashore, and to covertly auger soft sediment and collect samples of stone as well as to make observations on obstacles to cross-beach movement and exit. On their return, beach samples were sent to the Geological Survey of Great Britain for analysis.\textsuperscript{75} Britain’s Special Operations Executive (SOE) was also


\textsuperscript{73} This is based on the history of the Royal Navy, which has sailed most of the world’s oceans. Naval captains, as well as Army officers, were required to provide sketches and other geographic information as part of their duties in foreign areas. The cooperation between the RN and the merchant navies is discussed in Beesley’s \textit{Very Special Intelligence}. Military attachés would have provided military and economic or industrial information where possible.


used to gather geographic information, in addition to its other covert activities. The identification of suitable coasts for amphibious landings under fire was essential for the invasion of Europe; the slope and load bearing capabilities of the beach above and below the water was critical for the effective landing of vehicles. To help in the beach analysis effort, SOE collected picture postcards and holiday snapshots, and landed men to take samples of beach sand and pebbles of the northwest coast of France. Aerial photography was used for mapping while oblique photos were used for beach-gradient determination and potential airfield sites in the potential invasion areas. By 6 June 1944, over 200 beaches had been photographed and their gradients determined.76

Aerial photography was one of the most useful and versatile tools for gathering geographic intelligence, since a single photograph could provide valuable information to a range of users and analysts. Aerial photographs provided bomber aircrews an opportunity to become familiar with their targets, better enabling them to minimise collateral damage.77 Oblique photographs, some taken by aircraft flying along the beaches at altitudes as low as 16m, were used to provide information on natural as well as man-made obstacles on beaches.78

Aerial photographs were also used to find Hitler's secret weapons programs, in one case by accident. In 1943, a Royal Air Force Mosquito which had failed in its Berlin photo reconnaissance mission because of cloud cover exposed its remaining film over the Baltic coast at Peenemunde. Interpreters detected an unfamiliar aircraft and model makers used one photo to make a model by measuring shadows to estimate its size. It was estimated that subsequent raids on Peenemunde delayed German V-weapon attacks on Britain by four to six months.79

A wide range of other intelligence was provided by defence attachés, émigrés, espionage, strategic intelligence, field reports, the swapping of information with other Allies, secret deals with foreign booksellers, and reports from foreign travellers such as businessmen, miners, and engineers. Much information came from open sources


published or purchased prior to the start of the war, such as the British Ordnance Survey maps, RGS resources, maps and memoirs published by the Geological Survey, Admiralty Charts, and their Allied equivalents. Captured enemy maps provided both topographical information on new territory gained and a glimpse into strength and intentions.

### Products

The geographic products provided to planners and operators can be broken down into four main categories. First, researchers partnered with other scientists and specialists to provide general or specific assessments and reports on regions of interest, topography, the economic impact of bombing raids, politics, culture and society. For example, economists assessed the damage done by bombing raids and made suggestions for new targets, such as the German synthetic fuel factories, the loss of which slowed both the Luftwaffe and Panzer tanks. Hydrologists and geologists provided estimates as to the amount of flooding that would be caused by the destruction of dams.

Aerial photography produced much of the raw data used by analysts, so the Central Interpretation Unit was established in Britain in 1940, and by 1942 had over three million photographs covering most of Europe. The major drawback to aerial photography, however, was its inability to penetrate camouflage or heavy foliage, particularly in the Asian and Pacific jungles. Nor could it produce the required details on beach hydrography, soil conditions, or beach exits.

The second product, deception, had an unlikely but successful outcome from the geographical intelligence sections. ‘Goings’ maps of potential mobility had been produced by the Royal Engineers for areas of North Africa, and altered versions were allowed to be captured by Afrika Korps. This succeeded at least once in directing a formation of German tanks into impossible ground.

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81 Barnes, ‘Geographical Intelligence’, 152-61.

82 Ibid., 154-7.


84 Williams, ‘Amphibious Scouts and Raiders’, 150.

The third product consisted of three dimensional models, which were useful tools for operators and planners alike, as they provided an all-direction comprehension of terrain.86 Models were initially made for commandos in Norway and Italy in 1940,87 and by 1942, direction was given that terrain models were to be employed in the planning and briefing of major operations. Assaults which combined different nations and forces were complex operations, requiring detailed and reliable intelligence that could effectively be passed on to those involved in planning and execution. The invasions planned for Sicily and Normandy dominated the work of the model makers, who also provided models for air attacks on civilian targets such as dams, factories, and oil refineries, as well as targets for South East Asia Command.88

For strategic planning, the models were small scale with little detail but had the vertical scale exaggerated to three to four times the plan scale. Models for aerial bombing usually had scales at 1:2500 – 1:5000, while those used for assault landings were of exceptionally high standard and detail since they would be used for the different planning requirements of the army, navy and air force. Low oblique photos of the detailed models were taken for recognition of landing points under artificial light to mimic varying light conditions.89 Overall, the individual effectiveness of terrain models and aerial photography were enhanced significantly when used in combination.90

Maps were the fourth main category of product, and were the most widely used and distributed. Although they cannot be objectively compared against the value of the other products, the importance of maps can certainly be assessed by their sheer quantity. As an example, during the D-Day landings on 6 June 1944, four sappers (combat engineers) landed with ten tons of maps.91

German geologists prepared a series of maps for command staffs for Operation Sea Lion, which were based on British 1 inch (1:63 360) Ordnance Survey maps published between 1921 and 1936. These maps were issued at the 1:250 000, 1:100

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86 See Pearson, 'Allied Military Model Making'. Three dimensional models are mentioned as having been used in the Second World War, but it appears they were not used as extensively as during the First World War.
87 Ibid., 228-9.
88 Ibid., 229-34.
89 Ibid., 232-6.
90 Ibid., 241.
91 Chasseaud, 'Mapping for D-Day', 178. During the following three months, the British and Canadians printed over three million maps, while the US Army’s Engineers printed three million maps in July and August 1944 alone.
000, and 1:50 000 scales, showing on separate sheets useful information such as terrain suitable for building, water supply, goings, coastal geomorphology, and construction materials.92

British Army Royal Engineers officers remotely generated water supply maps which guided the drilling of boreholes for water supply in continental Europe to British and Allied installations as part of the infrastructure necessary to facilitate the ensuing mobile campaign.93 Topographic maps provided information on terrain, facilities and transport networks, while specialist maps provided additional information to meet a specific need. Although usually based on proper surveyed maps, aerial photography was used for rapid updates, as was done during the First World War.

A little-known use of specialist maps was for escape and evade techniques. After the First World War, there was a significant change in official attitudes to prisoners of war (POWs). This was due to the valuable information the escaped prisoners brought back, as well as to the extent to which the enemy had to divert valuable resources in catching them.94 The British created MI9 in December 1939 to take full advantage of this change in attitude. MI9 existed to facilitate escape and return of British POWs, collect and disseminate information on techniques for escape and evasion, deny information to the enemy, and maintain POW morale.95 MI9 instilled the philosophy of escape and evasion to all services, and while doing so, produced and distributed silk maps for this purpose. MI9’s production of escape kits always included silk maps, and the RAF had specially designed flying boots with hollow heel compartments for compasses and fabric maps.96

Geographic Intelligence Case Study: Normandy, June 1944

The invasion of Europe required extensive planning and rehearsals to execute the projection of military power from the sea onto a hostile shore, and the invasion of Normandy made the most of geographic intelligence. As in any amphibious

94 The most famous example of the resources diverted to catching escaped prisoners is demonstrated in the movie The Great Escape, which was based on real events.
96 Ibid., 141-2.
landing, close coordination and precise timing was necessary among all participating air, sea, and land components. The physical features of landing sites were carefully considered in both planning and execution phases, including many easily overlooked subtle factors. One of these factors was the ease of exit from a beach. This had to be considered in terms of both slope and beach material support capacity, which were essential characteristics for both soldier and vehicle. Additionally, the inland landscape had to allow sufficient space for logistics staging and coordinating the assault forces. Port facilities and transportation networks were essential for moving troops and materiel off ships and inland.

For the main invasion, the Allies considered both Normandy and the Pas de Calais. Calais was close and had port facilities, if they could be secured before they were destroyed. However, Calais provided three avenues of approach for the Germans. On the other hand, Normandy met the invasion requirements. It was flanked to the east by swamps and the Seine River, and to the west by the Atlantic Ocean, leaving only one approach for the Germans. A port was also available at Cherbourg.97

Once Normandy was selected over Calais, the specific landing area was selected. The initial plan was to land on the beaches of the Cotentin peninsula with the immediate objective of capturing the port of Cherbourg, essential for re-supply. Air superiority and airfields in France to maintain air superiority were also essential. Geologists pointed out the fact that the Calvados plateau between Caen and Bayeux was much better suited for temporary airfields than the Cotentin peninsula. The appraisal of Normandy’s geology was one of the main factors leading to selection of beaches used near Caen.98

With the invasion area selected, amphibious scouts, SOE collected hydrographic information in the vicinity of potential beaches, assessed the conditions of beaches and their exits, and analysed the nature of terrain in rear of beaches. They collected information on the location and type of underwater obstacles, enemy defensive positions and, when possible, the location and size of enemy reserves. This information was required for many purposes: landing craft commanders had to know exactly what part of each beach to assign to their unloading, and what type of obstacles they had to deal with. Naval logistics sections had to know the exact tonnage to be loaded, since the trim of vessels varied according to beach conditions; thus they needed accurate knowledge of underwater gradients and beach composition.99 Infantry

97 Murray, 'Some Thoughts on War and Geography', 204.
98 Rose et al., ‘Specialist Maps Prepared by British Military Geologists’, 118.
99 Williams, 'Amphibious Scouts and Raiders', 150.
commanders needed to know what kind of obstacles and defences they would have to face, while tank and truck drivers wanted to know over what ground surfaces they were going to be driving.

The geological section in the Inter-Services Topographic Department studied the potential invasion beaches for a year prior to D-Day and predicted the soil conditions for possible airfield sites in Normandy. The section also provided water intelligence maps and studied coast cliffs and the nature of the floor of the English Channel for pipelines to supply fuel to Allies once the invasion was firmly established. The Normandy beaches were analysed in detail not only with regard to configuration and slope, but also to the distribution of peat, clay, sand and shingle; the analyses were based on published literature, aerial photographs, beach sediments and laboratory observations. Some of the laboratory observations were made on British beaches whose geology was deemed to be similar in particular respects to those of Normandy. Amongst beach trials of vehicles and equipment at Brancaster in Norfolk, the effects of peat as an obstacle to cross-beach mobility were assessed by landing large numbers of vehicles under different tidal conditions on different parts of the coast.

Planners benefited from their experience of the Dieppe raid in August 1942, North Africa in November 1942, and Sicily and Italy in 1943. Large scale maps were required for artillery work and target location; smaller scales were required for movement and air operations. British, Canadian and American geographers, geologists, engineers and cartographers were all involved in the two years of preparations.

The weather and oceanographic conditions were critical to the invasion. For tactical reasons, it was important that the landing take place at dawn during a low tide which would reveal beach obstacles and avoid a prolonged grounding of the landing craft necessary for transporting reinforcements and supplies. Five kilometres of visibility were required for effective naval gun support, accurate bombing and effective air cover, while a full moon was needed to enhance the planned large-scale

100 Rose, Geology and Warfare, 124.
102 Ibid., 124. Other preparations for D-Day included the study of the reaction of common French and Belgian road metals upon mine detectors; collaboration with military engineers on quarry resources; studies of sand bank changes on British beaches, as a guide to similar changes on invasion beaches; selection of a British beach simulating the invasion bridge head; vehicle trials and bombing results on British beaches; detailed studies of Loire and Seine rivers, for assault crossings; the selection of a British river comparable to the Seine, and tests of amphibious vehicles on it; provision of information on the submarine geology of the invasion ports; and the selection of portions of the British coast for training commando parties.
night-time airborne operations. Calm seas would lessen seasickness, disorganisation, and accidents, but light winds would help clear smoke and fog. These weather conditions should last at least 36 hours to provide sufficient time to land both forces and supplies. Three days of good weather post-invasion would allow for initial re-supply.\(^{104}\)

The weather parameters for a successful invasion were also based on the operating limits of the equipment to be used. Meteorologists sought details from planners on the weather factors which would defeat the invasion if not met: phases of moon favourable for parachute drops and glider landings, suitable beach tides, limited fog and mist. The focus was initially April or May to maximise temperate summer weather for offensive operations, but the date slipped for logistical reasons, mainly to accommodate the arrival of more landing craft, which helped facilitate the landings.\(^{105}\) The decision to increase the size of the invasion force and the need to conduct additional air operations also contributed to postponing the invasion.

Meteorologists had gathered considerable historical data on the weather in the English Channel, while current data was radioed in from Allied ships in the North Atlantic. As the Atlantic Ocean was no longer available for free hunting by German U-boats in early 1944, the Germans had few resources that could keep the German High Command up to date on weather conditions. The overall area for the forecast was critical as both the launch and landing areas had to have acceptable weather. The reliability of the forecasts was a problem as they were only good to about two days out, and ships needed two days to load all troops. Planners had determined the invasion required at least one good day to allow for two essentials assaults, at dawn and dusk. Although a storm front moved in during the original planned date of 4 June, meteorologists projected an opening for 6 June 1944, before a second weather front would severely limit air superiority. This recommendation was the critical go/no go for General Eisenhower.\(^{106}\) Due to their limited resources, and successful deception operations by the Allies, the Germans missed the one day window and let down their defensive guard, under the assumption that the invasion would be at Calais, and that the Allies would not launch their invasion under the expected poor weather conditions.\(^{107}\)

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\(^{104}\) Winters, *Battling the Elements*, 23.

\(^{105}\) Ibid., 25.

\(^{106}\) Ibid.

Maps were essential to all forces involved in the Normandy invasion, with over 300 million maps being printed throughout the campaign to V-E Day in May 1945. A wide variety of maps was produced, both for the initial amphibious assault and for the successive offensive operations. Map scales ranged from 1:5000 to 1:2 million, and showed a wide variety of information to meet the needs of the different forces involved. After the evacuation at Dunkirk in 1940, it was determined that 1:100 000 and smaller scales were needed to cater for rapid movement of armoured forces.\(^{108}\)

The air forces used 1:1 million and 1:2 million scales for air navigation. 1:500 000 and 1:250 000 topographic air maps were also provided for more precise navigation closer to the target. Oblique perspective target maps were prepared for Bomber Command, while special information maps were provided for operations and briefing staff in charge of controlling the air forces.\(^ {109}\) Airborne units were issued maps on two scales, 1:25 000 and 1:12 500. These maps were for night landings and dropping zones, designed and coloured to show the ground as it would appear from the air at night.\(^ {110}\)

The navy had special charts for beach approaches and naval gun support.\(^ {111}\) Beach maps at a scale of 1:5 000 were revised from the latest large-scale air photos and other material. They showed relevant information such as underwater obstacles, cliff heights, and the nature of the beach material.

The army was provided with maps showing beach gradients and obstacles, based on information from air reconnaissance and from Royal Marine frogmen. One such example included a panorama diagram illustrating the beach exit, with plans at small scales (1:3 000 to 1:18 000), large scale 1:600, and one or two profiles with vertical scale of 1:1200 and horizontal scale of 1:600 showing the geological cross section.\(^ {112}\) Tactical overprints on large-scale sheets showed all features of German defences such as batteries, pill boxes, and minefields. ‘Goings’ maps were also provided, showing the different terrains to assist forward movement. Army commanders also had maps showing town plans and through-ways. Road maps, gazetteers, guide books and relief models were supplemental to the intelligence products provided Artillery was challenged with inadequate angle-of-sight data, caused by a lack of reliable height control and poor relief-depiction from the original French maps.\(^ {113}\)

\(^{109}\) Ibid.
\(^{110}\) Ibid.,178.
\(^{111}\) Ibid.
\(^{112}\) Rose et al., ‘Specialist Maps Prepared by British Military Geologists’, 126.
Following the breakout, photo reconnaissance continued to provide invaluable intelligence on enemy force locations and strengths, transportation target-location and bomb damage assessment, and selection of suitable river-crossing sites.\textsuperscript{114} Airborne and armoured forces had difficulties with penetrating Normandy’s \textit{bocages}, which intelligence personnel failed to assess properly. The \textit{bocage} consisted of small fenced fields, surrounded with thick hedgerows, which reduced the progress of armour, vehicles and men to a crawl until a means was devised to push the hedgerows aside.\textsuperscript{115}

The geographical and topographical sections continued their work after the invasion began. They continued to produce water, soil and ‘goings’ maps for Belgium, northwest France, and west Germany as well as potential airfield conditions. Vehicle movement data was collected to provide a check upon the accuracy of ‘goings’ forecasts. Large rivers, such as the Rhine, were studied in detail, to assist in preparing for assault crossings and bridge building. A training area was selected on the River Meuse, with conditions as near as possible to those which would hold on the Rhine assault crossings.\textsuperscript{116}

\textbf{Conclusion}

On the Western Front in the First World War, the static requirements imposed by trench warfare required the expertise of the geologists to exploit resources and provide guidance in locating and building defensive works. But in both the European and Levant theatres, it was what was happening behind the enemy’s front lines that concerned those in command. While intelligence as a whole does not win battles or wars on its own, it can contribute significantly to the planning and execution process. Hints and clues of what was happening right on the front line could be gathered from careful reconnaissance missions, but the big movements – the movements of large reserves, the stockpiling of munitions and the comings and goings of railway traffic – happened miles behind the front. This meant using new and innovative means to gather information: aerial reconnaissance and photography. Terrence Finnegan suggests:

\textsuperscript{114} Ibid., 180.
\textsuperscript{115} O’Sullivan, \textit{The Geography of Warfare}, 20.
\textsuperscript{116} Rose et al., ‘Specialist Maps Prepared by British Military Geologists’, 120. On page 129, an unpublished report provides a quantitative value to geographic intelligence: ‘The value of detailed topographical and geological study in selecting airfield sites in the beach-head area was fully proved … Based on geological information provision was made for surfacing only 50% of the airfields in the British sector as against 75% in the US sector, where more clay was expected. This enabled the stores demand in the British sector to be reduced by over 400 tons a day for the first 30 days of invasion, when every ton was of great importance. Even with this 50% reduction, airfield stores made up nearly 25% of the total planned tonnage of Engineer stores.’
Aerial reconnaissance and photographic interpretation reinvented the way that modern battle was envisioned, planned and executed. They became the catalyst for expanding intelligence acquisition, exploitation and dissemination in the modern … Aerial reconnaissance soon became the primary information source behind most battlefield decisions and it provided a permanent photographic record of those decisions. Without it, the First World War would have depended less on artillery, the most destructive of the force arms, since targeting accuracy would have remained limited to the practices of the previous century. Furthermore, the evolving role of aeroplane aerial bombardment deep behind enemy lines never could have achieved a high degree of sophistication, since validation of damage inflicted would have been limited to whatever could be acquired through eyewitness reporting … Thanks to an aerial platform and a photographic medium, operational intelligence quickly evolved into a staple of the modern battlefield.¹¹⁷

Despite the increased dependence on aerial reconnaissance and photography, it must be remembered that they were not the only source of intelligence. Intelligence could be gathered through a multitude of other sources. Other sources, such as signals intelligence and human intelligence, assisted in the identification of enemy forces, movements and gave hints to enemy intentions, much of which could not be provided by aerial reconnaissance.

The most important contribution that these technical developments provided was the experience to the officers and soldiers who later served in the Second World War. Those who understood the value of geographic intelligence and aerial reconnaissance were ready and able to exploit it to its maximum potential.

When geographic intelligence was available and considered in planning military operations, from the strategic to the tactical, it minimised the likelihood of troops encountering impenetrable or unpassable terrain, amphibious assaults landing on impassable beaches, or airborne assaults dropping into water. Tank commanders worked with engineers to ensure the tanks would not get caught in hazardous terrain such as marshes, broken country or soft sand dunes. Meteorologists became critical to predicting weather suitable for invasions or bombing raids, or as in the case of the Germans' Ardennes breakout, weather suitable to hide a developing offence from enemy eyes.¹¹⁸

¹¹⁷ Finnegan, 13.
¹¹⁸ Background material, Winters, Battling the Elements.
The lack of preparation for hostile climates creates significant survival challenges which divert much needed resources away from the main mission of conducting war. An example is the failure of the Germans to provide appropriate clothing or equipment capable of dealing with the harsh conditions of the Russian winters or the North African deserts. And although the assault at Tarawa was eventually successful, miscalculating the tides was a costly mistake. The ambitious timetable and the failure to properly assess the riverine environment around Arnhem and Nijmegen was another significant error for the Allies.

The increased size and numbers of war machines, along with their rapidly developing technology, continue to require corresponding improvements in geographic intelligence. Today, the internet, military satellites and unmanned aerial vehicles (UAVs) are able to provide an abundance of information at a level of detail that could only be imagined just half a century ago. Satellites and UAVs are capable of providing a real time video feed to front line commanders and headquarters staff half a world away with equal ease. Video can be presented in several different modes, such as infra-red, ultra-violet, or other spectrums which can penetrate camouflage, vegetation or surface soil coverings. Common examples available are primarily archaeological or geological in nature, such as the penetration of the Saharan sands to reveal hidden waterways or ancient Egyptian ruins. Using the same methods, ancient temples have been found hidden by vegetation, in both Central America and South East Asia. On the military side, the global positioning system can provide assistance for the individual soldier, or all the way up to the theatre commander or above for the guidance of long-distance missiles.

Geographic intelligence must remain an essential part of military planning at all levels, from the tactical decision of how to assault an enemy’s position to determining how to get one’s forces to the right battlefield at the right time as part of an overall strategy for winning a war.
Overcoming Geography, but still Struggling with Terrain: Balikpapan, 1945

Garth Pratten

On 1 July 1945, following what one veteran later described as a ‘magnificent display of firepower’, troops of the 7th Australian Division landed on the shores of the eastern Borneo town of Balikpapan, now part of the province of East Kalimantan in Indonesia. It was the last major amphibious operation of the Second World War, the largest ever conducted under Australian command, and involved one of the longest direct projections of Australian force to secure a hostile shore. In a volume taking as its theme the relationship between strategy and geography, it is worth noting that Balikpapan is a little under 4000 kilometres from Kyushu, the most southerly of the Japanese home islands. Concurrent to the Australian landing at Balikpapan, United States forces were completing the mopping up of Japanese forces on Okinawa, just 550 kilometres from Japan. As Lieutenant General Frank Berryman, Chief of Staff of Australian Advanced Land Headquarters, noted in his diary immediately following the Okinawa landings, the US operations there had effectively bypassed the South-West Pacific theatre, and with it Borneo.  

Echoing the doubts implicit in Berryman’s assessment, the limited historiography of Balikpapan has been absorbed with the question of whether the objective was worth the Australian effort, and lives, necessary to capture it. This chapter will adopt a broader, slightly less parochial, approach and use the series of operations, Japanese and Allied, mounted against Balikpapan between 1942 and 1945 as focal points to examine the effect of geography on strategy and operations. What will become apparent is that the ability of a military force to overcome the constraints of geography rests upon its force projection capabilities and thus both strategy and operations are the art of the

1  Tom Kimber, interview, 28 March 1990, S00921, Australian War Memorial, Canberra (hereafter AWM).

2  Frank Berryman, diary, 1 April 1945, PR84/370, 1/5, AWM.
possible rather than the ideal. Further, the case study of Balikpapan will demonstrate
that no matter how much materiel preponderance a military force enjoys, the effects
of the basic building blocks of geography—terrain, vegetation, human development,
or the lack of it—can never be ignored.

**Balikpapan and Japanese Strategy**

Geostrategy has been variously defined, and, indeed as a concept can be quite
elastic. James Rogers and Luis Simón have posited that geostrategy concerns ‘the
exercise of power over particularly critical spaces on the Earth’s surface … aimed at
enhancing one’s security and prosperity … about shaping rather than being shaped’.
A geostrategy, they contend:

> is about securing access to certain trade routes, strategic bottlenecks,
     rivers, islands and seas. It requires an extensive military presence,
     normally coterminous with the opening of overseas military stations and
     the building of warships capable of deep oceanic power projection.³

Lim Joo-Jock offers a much more limited, although complementary definition.
For him geostrategy is the ‘sum of geographic factors that interact to influence or
to give advantage to one adversary, or intervene to modify strategic planning as
well as political and military venture [sic]’.⁴ By either measure, Japan’s occupation
of Balikpapan, 4000 kilometres from its sovereign territory, offers a case study of
geostrategy in operation. Without delving too deeply into the causes of the war in the
Asia-Pacific, historically, a strong element of Japanese geopolitical thinking was that
national strength and prosperity rested upon dominance of the East Asian mainland.
Japan’s aggressive pursuit of this policy in the 1930s embroiled it in an intractable war
in China. Subsequently, the weakening of the European colonial powers in the war
against Germany presented the opportunity to isolate the Chinese Nationalist forces
of Chang Kei-Shek from external support through further expansion into southeast
Asia, which also offered up additional resources and markets. The trade embargoes
imposed in 1940-1941 after Japan’s expansion into French Indo-China threatened to
strangle its economy thus jeopardising the successful conclusion of its war in China;
the control of the ‘Southern Resource Area’, principally Malaya and the Netherlands
East Indies (NEI), became vital; and Japan struck south in December 1941.

ideasoneurope.eu/2010/03/14/think-again-european-geostrategy/.

⁴ Lim Joo-Jock, *Geo-Strategy and the South China Sea Basin: Regional balance, maritime issues,
Oil brought the Japanese to Balikpapan. It was Japan’s most critical commodity; the embargoes had deprived it of 90 per cent of its supply of crude.\(^5\) A small fishing village before the discovery of oil inland at Sanga Sanga in 1897, by 1939 Balikpapan was the second most productive oil port in the NEI and reputedly the third largest refinery complex in the world. Its three refineries had an annual output of 1.8 million tons (6.5 million barrels), which constituted just under 20 per cent of the colony’s production. Its output included fuel oil, benzene, kerosene, lubricating oil, and paraffin wax.\(^6\) The wealth of the Sumatran fields, however, eclipsed those of Borneo and produced 60 per cent of NEI oil. The most productive fields were those around Palembang on the southeast coast.\(^7\)

Japan’s attack on Balikpapan came in the second stage of its southern offensive, one of three drives into the northern islands of the NEI launched in January 1942 to converge on the heavily-populated resource-rich island of Java. The principal striking force was land-based air power, and the operations were structured around the seizure of a succession of air bases to progressively extend an air envelope towards Java and its southern approaches.\(^8\) The three axes were defined as much by the maritime approaches as their objectives. The western-most drive struck via the South China Sea at southern Sumatra with Palembang as its ultimate objective; the eastern through the Celebes Sea at the Celebes, Ambon, and thence Timor with the aim of severing the Darwin-Surabaya air route; and the centre down the Makassar Strait along the east coast of Borneo to capture, successively Tarakan, Balikpapan, and Banjarmasin. Tarakan and Balikpapan were dual military and economic objectives as they were the sites of both oil facilities and airfields. Although spread across a vast operational area of approximately 2500 kilometres, the Japanese plan was to synchronise the attacks on the three axes to enable the covering forces to provide mutual support if required, and keep the Allied forces off balance and unable to concentrate against the Japanese advance.\(^9\)


After capturing Tarakan, the 56th Mixed Infantry Group (Sakaguchi Detachment) seized Balikpapan on 24–25 January 1942, taking advantage of the opportunities for manoeuvre offered by the littoral environment. The town and oil facilities were built close to Point Toekoeng from where the coastline ran north forming the shore of Balikpapan Bay, and east along the Makassar Strait. Balikpapan’s airfield was at Manggar, approximately 16 kilometres north-east of the town. Under the cover of darkness an ‘Assault Unit’ based around two infantry battalions landed on the beach at Manggar, while a battalion-strength ‘Surprise Attack Unit’ moved up Balikpapan Bay and into the Wain River to advance on Balikpapan from the north and attack the Royal Netherland Indies Army (Koninklijk Nederlands Indisch Leger—KNIL) garrison from the rear. The intent was for the two forces to converge simultaneously on Balikpapan but, although the airfield was captured by dawn on 24 January, KNIL demolition of bridges on the coast road slowed the advance of the Assault Unit and it did not enter Balikpapan until the following morning. In the meantime, the Surprise Attack Unit was beset by its own problems when one of its landing craft ran aground in the Wain River and it did not begin its advance south until the morning of 25 January. That afternoon it destroyed the KNIL garrison, withdrawing after destroying the oil facilities, north of Balikpapan.10

The operation was not without cost for the Japanese, however. Although the three axes drive towards Java was intended to prevent a concerted response by Allied forces, it ran the risk that they would be able to muster sufficient forces for damaging local raids; which is what they did at Balikpapan. An Allied air attack sunk one transport en route to Balikpapan and during the course of the landing operations another four were sent to the bottom by the actions of a Dutch submarine and four United States Navy (USN) destroyers.11 These losses were subsequently described as ‘unexpectedly serious’ but were not telling. The bulk of the landing forces had been off-loaded by the time of the naval action; the extent of the resources allocated to the advance allowed the losses to be absorbed; and the strength of overall Japanese position in the northern NEI was such that these attacks did not delay the progress of the operations by even a day.12 Japan, though, could not afford a succession of such losses. As H.P. Willmott has pointed out in his history of Japanese and Allied strategy, Balikpapan

11 The invasion of the Dutch East Indies, 357-8.
12 Willmott, Empires in the Balance, 291; Naval operations in the invasion of the Netherlands East Indies, 21-2; Balikpapan invasion operations record, 6.
demonstrated the vulnerability of transport shipping operating in areas where control of the sea and air was contested. It was the first of a long string of minor naval actions that would whittle away the shipping upon which the viability of Japan’s Southern Resource Area rested; shipping which Japan had little capacity to replace.13

Ashore at Balikpapan, the rushed and poorly targeted demolition efforts of the KNIL proved fruitless. The Japanese were able to quickly effect repairs and by 1943 Balikpapan’s facilities were contributing various petroleum products, including aviation fuel, to the Japanese war effort; production in that year peaked at 3.9 million barrels—just under a quarter of NEI output.14 Commensurate with Balikpapan’s economic value, its defences were strengthened by the Japanese naval garrison, the 22nd Base Force. Long-range coastal defence guns and anti-aircraft guns of various calibres were installed. The latter, supported by sound locating and radar equipment, were described by United States Army Air Force (USAAF) intelligence in 1944 as ‘the best balanced AA protection to be found in the Southwest Pacific Theater’.15 Balikpapan also continued to serve as a base for the projection of airpower and the Japanese constructed a second airfield at Sepinggang, approximately eight kilometres east of Balikpapan, in 1943.

### Allied Air Operations Against Balikpapan

Once the Southern Resource Area was captured, Japan’s continuing operations into New Guinea and the Solomon Islands provided security by pushing Allied air power out of reach. Up until United States forces closed on the Japanese home islands there was little opportunity for the type of sustained strategic bombing campaign being pursued in Europe. Potential targets were few, and scattered, and their distance from friendly territory insurmountable. The focus of air power in the South-West Pacific was thus essentially tactical—the support of offensive operations on both the sea and land.

The potential for striking at strategic targets, however, was never completely abandoned by the airmen within General Headquarters (GHQ) South-West Pacific Area. Although remembered as an innovator in the employment of attack aviation, and for having challenged the ‘strategic predispositions’ of other US Army aviators.

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in the South-West Pacific, General George Kenney, the commander of the Allied Air Forces, harboured strategic aspirations. In October 1942, just two months after taking up his command, he wrote to General Henry ‘Hap’ Arnold advancing his views on war strategy. In order to ‘prevent Japan from exploiting and utilizing the vital resources of the Netherlands East Indies and Malaya without which they would be unable to continue the war’, he advocated that the South-West Pacific be accorded second priority behind the war against Germany and all other Allied efforts stripped of resources. Unable to influence overall United States strategy, Kenney subsequently pursued his ideas with his existing resources. Across the next year his focus narrowed on Japan’s NEI oil infrastructure as potential war-winning targets and he went so far as to describe the oil facilities of Borneo and Sumatra as the ‘finest and most decisive set of targets for bombing anywhere in the world’.

The art of the possible seems to have shaped Kenney’s strategic calculations about NEI oil. The concentration of the oil fields in northern Borneo and eastern Sumatra placed most outside of the range of his aircraft. Balikpapan was the one exception; 1982 kilometres from Darwin, it stood on the very edge of the operational radius of B-24 Liberators based in the Northern Territory. In mid-August 1943 the 380th Bombardment Group, based at Batchelor, were launched on three marathon 17-hour raids against Balikpapan. Subsequent intelligence reporting seemed to confirm the significance of Balikpapan in the Japanese fuel chain. Within a fortnight of the raids the Japanese were said to be short of aviation fuel from Ambon to Wewak, and even as far afield as Palau and Truk.

Kenney seized on the potential offered by the soon-to-be introduced B-29 Superfortress—its range of 5000 kilometres would allow him to attack both Balikpapan and Palembang from northern Australia—and lobbied unsuccessfully for some to be allocated to his command. In the absence of the means to strike

20 Kenney to Arnold, 29 October 1943.
21 Falk, ‘General Kenney, the indirect approach, and the B-29s’, 150-5.
further afield, and spurred on by faulty intelligence, the significance of Balikpapan as a strategic target grew in Kenney's estimation. On 14 September 1944 he diarised his 'hunch' that the destruction of the Balikpapan facilities combined with the invasion of the Philippines would convince the Japanese leadership to end the war.\textsuperscript{22} This conviction led to the most concerted attack yet on Balikpapan between 30 September and 18 October 1944, utilising five bombardment groups of the Fifth and Thirteenth Air Forces. Although now mounted from islands off the coast of northwest New Guinea, the return flight to Balikpapan was still 4000 kilometres and providing the aircraft with the necessary endurance meant compromises on bomb loads and defensive armament. Unescorted and poorly coordinated, the first two raids suffered heavily and did little damage.\textsuperscript{23} With an unsustainable loss rate of 19.4 per cent, the second raid was the single most costly air operation conducted by GHQ South-West Pacific Area.\textsuperscript{24} An operational pause to revise tactics and rally morale, in addition to the provision of escort fighters, allowed the final three raids to best their opposition, destroy the bulk of the Japanese fighters at Balikpapan, and inflict considerable damage on the refineries.\textsuperscript{25}

Assessments of the extent of the damage inflicted on Balikpapan varied but were ultimately moot because the Allies' understanding of the Japanese fuel distribution system was flawed. Contrary to Kenney's information that Balikpapan produced up to 70 percent of Japan's aviation fuel, its navy-operated facilities concentrated on fuel oil for ships; aviation fuel constituted only 20 per cent of its output. Furthermore, highlighting the critical weakness of Japan's far-flung network of resources, Balikpapan's operators had reduced production by 40 per cent between January and April 1944 in response to Allied attacks, both submarines and aerial mining, on shipping. The Japanese were no longer prepared to risk tankers on voyages to this outpost at the edge of their defensive perimeter and there was no point in producing product that could not be removed.\textsuperscript{26} In place of Kenney's strategic shock, there was only a pragmatic cost-benefit analysis. Balikpapan's reduced output continued to support Japanese operations in the NEI but it was only of local, tactical significance.\textsuperscript{27}

\textsuperscript{22} Kenney, diary, 14 September 1944, cited in Griffith, 'MacArthur's Airman', 383.
\textsuperscript{23} A detailed account of these raids can be found in Bunnell, 'Knockout Blow?', 65-71.
\textsuperscript{24} Ibid., 70.
\textsuperscript{25} Ibid., 62-83; I Australian Corps Advanced Echelon Allied Translator and Interpreter Service interrogation report 0081, 5, AWM52, 1/4/1/69, AWM.
\textsuperscript{26} Bunnell, 'Knockout Blow', 86-7.
\textsuperscript{27} Falk, 'General Kenney, the indirect approach, and the B-29s', 154.
General MacArthur and the Oboe Operations

Balikpapan reappeared on GHQ South-West Pacific Area’s agenda in early 1945 as part of General Douglas MacArthur’s plan for the liberation of the southern Philippine Islands, Borneo and the NEI. In its original form the plan, codenamed ‘Princeton’, envisaged three sets of operations but in its third revision, renamed ‘Montclair’ and issued on 25 February 1945, these were regrouped into two: ‘Victor’ embracing the southern Philippines and ‘Oboe’ Borneo and the NEI.28 Given this chapter’s dual themes of the constraints of geography and the limitations of technology it is worth noting that the Oboe plan was shaped by the range of land based airpower and in terms of its geographic objectives was almost identical to the Japanese drive through the Celebes Sea and down the Makassar Strait in January 1942. Oboe 1 was to capture Tarakan to put tactical aviation in range of Balikpapan, the objective of Oboe 2. From Balikpapan aircraft could reach out to western Java, and their coverage would be extended by the capture of Banjarmasin in Oboe 3. Oboe 4 was to be the invasion of Java, via either Surabaya or Batavia depending upon the availability of aircraft carriers, Oboe 5 was an ill-defined operation into the eastern NEI, and Oboe 6 was the liberation of British north Borneo.

In order to focus effort and resources on operations against the Japanese home islands, Oboes 3–5 were scotched by the United States Joint Chiefs of Staff (JCS). A mishmash of imperatives propelled the remaining operations and together they had little strategic or operational coherence. The JCS prioritised Oboe 6 in order to secure Brunei Bay as an anchorage to which to tether the British Pacific Fleet and hasten the British assumption of responsibility for the South-West Pacific Area, leaving United States forces free to concentrate on the drive against the Japanese home islands.29 Tarakan was deemed necessary as a base for tactical air support, so Oboe 1 would precede it.30 With the demise of Java as an objective, Balikpapan lost its operational significance yet, through the duplicitous manipulation of both the JCS and the Australian Government, MacArthur also had Oboe 2 approved as a successor to Oboe 6.31

30 Stanley, Tarakan, 23-4.
31 Horner, High Command, 396, 406.
Historians have struggled to account conclusively for MacArthur’s insistence on capturing Balikpapan. In explanations offered geography-based military concerns jostle with the personal and political. Of the most commonly articulated theories, sidelining Australia’s forces seems just a little too Machiavellian as a complete explanation; seeking to satisfy, at least in part, an undertaking to Dutch officials to liberate their territory may have some substance. Commander of the US 8th Army, Lieutenant General Robert Eichelberger, maintained that MacArthur never quite abandoned the possibility of a landing on Java, despite the JCS disapproval. Even without an invasion of Java, Balikpapan’s airfields still offered the potential to extend the range of allied airpower beyond the frontiers of liberated territory, guarding its south-western flank. Finally, muddled thinking about Balikpapan’s oil also seems to have played a role with several US commanders, including MacArthur and Admiral Bill Halsey, commander of the US Third Fleet, writing of the significance of Borneo oil in fuelling the projection of the increasingly large and hungry force heading to Japan. The protection and restoration of oil resources was one of the stated aims of the Oboe series, and this was reiterated in the orders for Oboe 2. US Army-Navy Petroleum Board advice to the JCS estimated that the restoration of Borneo’s oil facilities would take over a year but this information may not have been passed to MacArthur who, in any case, had a tendency to back his own judgement over intelligence reports. If oil was a serious, if confused, objective of Oboe 2 it points to a significant disjunction between operational and strategic planning inside GHQ; the oil facilities Kenney had spent the past two years trying to destroy, were now to be preserved.

**Oboe 2 Force Projection and Sustainment**

The force eventually earmarked for Operation Oboe 2 was the 7th Australian Division under the command of Major General Edward ‘Teddy’ Milford. In early 1945 it was concentrated around Kairi, on the Atherton Tablelands in northern Queensland.

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35 ‘Staff Study Operation “Oboe-Two”’, 21 March 1945, 1, AWM54, 621/3/7, AWM; ‘1 Aust Corps Operation Instruction No 4: Oboe Two’, 13 May 1945, 2, AWM52, 1/4/1/63, AWM.

As mentioned previously, the constraints of geography can be overcome by force projection capacity and the move of the 7th Division for Oboe 2 demonstrated the capability, and limitations, of that available in the South-West Pacific in the first half of 1945. The movement plan for the Oboe operations called for the 7th Division to be shipped from the northern Queensland ports—Cairns and Townsville—to the island of Morotai in the Halmaheras, a distance of approximately 4500 kilometres. Morotai was not to be established as an Advanced Base and was merely intended as a staging area for the concentration of shipping and amphibious craft, the combat loading of stores, and the conduct of landing rehearsals, before the assault convoy steamed another 1400 kilometres to Balikpapan.

In early 1945 the Allies faced a global shortage of shipping, which was particularly critical in the maritime environment of the Asia-Pacific theatre. MacArthur requested permission to retain additional shipping from the JCS for the Oboe operations but, owing to a serious shipping deficit caused by the operations at Iwo Jima and Okinawa, this was rejected. Shipping for the Oboe operations had to be found from existing allocations, and its use scheduled around other operational requirements, most particularly the redeployment and concentration of US forces in preparation for Operations Olympic and Coronet (the landings, respectively, on Kyushu and Honshu). Shipping thus proved a significant determinant in scheduling and force structure for the Oboe operations and in the case of Tarakan Berryman even believed that MacArthur’s Assistant Chief-of-Staff—Operations, Major General Stephen Chamberlin, had GHQ intelligence revise its estimates to justify a reduction in the assault force to fit in allocated shipping.

Not only was shipping limited, but movements were confused and priorities poorly allocated. GHQ initially directed that Oboe 2 be carried out with only two infantry brigades but concerns about having a sufficient reserve of troops led Milford to request permission to employ his third. This was approved as long as only the combat elements of the brigade were used and no extra shipping was required to move them. The vessels needed to move the third brigade with the assault convoy were found by reducing the number of RAAF personnel in the follow-on forces by 7000.

38 Berryman to Morshhead, 3 April 1945, PR84/370, 2/12a, AWM.
39 James, The Years of MacArthur, 710–11; MacArthur to Marshall, 3 February 1945, and Forland to Landforces, 10 February 1945, 3DRL6643, 2/49, AWM; Berryman, diary, 5, 10-11 February 1945, PR84/379, 1/5, AWM.
40 Berryman, diary, 21 February 1945.
41 Dougherty, notes on Oboe 2 planning, 6, AWM52, 8/2/21/36, AWM; ‘Report on Operation Oboe Two’ (hereafter 7 Div. RoO), 28 September 1945, 3, AWM54, 621/7/1, AWM; ‘Notes on Conference HQ 1 Aust Corps 1100 Hrs 7 Jun Oboe Two’, 3, AWM52, 1/4/1/66, AWM.
When combined with the short notice provided to the 7th Division—Milford was not advised until late April for an attack in late June—shipping constraints proved a significant impediment to planning and battle procedure. Although Milford requested air transport be provided, his brigade planning teams had to move by sea. Planning on Morotai was not able to begin in earnest until the first week in June, with brigade orders required on 11 June, for embarkation starting a week later. USN planning timetables meant landing tables had to be estimated before tactical plans had been finalised.

The division deployed from Australia in a mixture of heavy and amphibious shipping, which disorganised the assembly of the force. The advanced parties of the 21st Brigade’s infantry battalions, for instance, shipped first but on relatively slow moving landing ships–tank (LST). This meant that the remainder of the battalions that left later on faster moving conventional troopships arrived at Morotai first and their commanding officers, who had travelled ahead with brigade headquarters, were left without staff to assist with planning. The voyage on the LSTs was particularly uncomfortable as they were not designed to carry embarked troops long distances and the voyage from north Queensland to Morotai took 19 days to complete. Some troops had no more than a few days ashore at Morotai before having to re-embark, which the Commander of the 18th Brigade, Brigadier Frederick Chilton, considered to be insufficient time for ‘hardening and acclimatization, or even adequately to carry out essential administration and briefing’.

The rush to Morotai was the closest that Oboe 2 came to a crisis. Discussing the shipping movements and their effect upon planning, Brigadier Iven Dougherty noted that ‘but for one or two fortunate happenings … we would not have been able to have had the operation ready to launch on July 1’. Berryman’s diary for 14 May 1945 reveals that the shipping restrictions meant there was little scope for delay. Although some units of the assault echelon were not complete with stores and personnel on Morotai until the day of their embarkation, landing rehearsals followed by the movement to Balikpapan occurred without major incident.

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42 Dougherty, notes on Oboe 2 planning, 6–12; ‘18 Aust Inf Bde—Report on Operations “Oboe Two”’ (hereafter 18 Bde RoO), 2, AWM54, 621/7/51, AWM.
44 Dougherty, notes on Oboe 2 planning, 6; Berryman, diary, 14 May 1945.
45 7 Div. RoO, 24; ‘1 Aust Corps report on operations Borneo Campaign’ (hereafter I Corps RoO), 15 September 1945, 42, AWM52, 1/4/1/74, AWM.
The longer term sustainment upon which successful force projection depends was planned to avoid operations ashore being restricted by shipping limitations. The 7th Division was responsible for its own sustainment for fifteen days after the landings. Split between the assault and follow-up echelons were 20 days’ supply of ammunition, scaled for intense operations, 15 days' supply of fuel, and 30 days' supply of all other stores. Additionally, two ‘floating reserves’ of 15 days’ ammunition and fuel, packed for selective discharge, were maintained. One accompanied the assault convoy and was available on the day of the landings, and the other remained ready to sail at Morotai. A further ‘force reserve’ of 30 days’ ammunition and general stores, adopted because of the long over-water lines of communication, was built-up at Balikpapan. Sustainment beyond the fifteenth day ashore was provided by bulk shipments of fuel from the US Army Services of Supply and automatic periodic shipments of ‘balanced packs’ of stores, assembled in accordance with historical usage rates, dispatched directly from Australia.46 The only significant failing of sustainment planning related to personnel. Insufficient reinforcements were initially shipped to Morotai for the Oboe series, and when enough were available to move onwards to Balikpapan no shipping was available; the 7th Division was not reinforced until after the operations had concluded.47

The scale of the effort involved in landing and maintaining the 7th Division at Balikpapan is evident in the basic force protection statistics. In the first twenty days of Oboe 2 36,291 personnel, 5562 vehicles and 32,127 tons of stores were landed at Balikpapan.48 The Balikpapan Attack Group comprised close to 300 vessels, which included the majority of the troop carriers as well as the naval combatants and their own logistical support.49 Another 32 vessels of ‘heavy’ logistic shipping, either merchant marine or US Coast Guard, carried additional personnel and stores.50 The most notable characteristic of this shipping was that very little of it was Australian. Of the heavy shipping only two vessels were Australian and of the attack group only six: the landing ships-infantry Manoora, Westralia and Kanimbla, the cruisers

47  I Corps RoO, 53.
48  ‘Appendix ‘P’ to 7 Aust Div Operational Report Oboe Two’, AWM54, 621/7/1, AWM.
49  ‘Commander Task Group 78.2, Commander Amphibious Group Eight, Seventh Fleet, Action Report—Balikpapan Operation’ (hereafter Amphibious Group Eight RoO), I-6-1-9, AWM54, 621/7/26, AWM.
50  ‘7 Aust Div Adm Order No 1: Maintenance project—Operation Oboe Two’, appendix ‘D’. Includes the shipping allocated to the periodic resupply from Australia, but excludes USASOS tankers for which figures were not available.
Shropshire and Hobart, and the smaller combatants Arunta, Gascoyne and Warrego.\(^5\)

This heavy dependence on United States’ support was not lost on Australian staff officers. The Administration Branch section of the I Australian Corps report on the Oboe operations noted:

> The outstanding lesson learnt in this Branch was the need for the shipping component of an amphibious operation to be provided from within the national resources and to be under the command of the operational commander from the preparatory to the final stages.\(^5\)

**Oboe 2 Tactical Decision Making**

Planning his capture of the objective area, the same materiel superiority that facilitated the movement of the 7th Division gave Milford flexibility in his approach to it. Balikpapan presented a challenge for an invading force. The town, port and oil facilities were built on a relatively narrow coastal flat overlooked by steep hills. As mentioned previously, Balikpapan’s airfields, one of Milford’s immediate objectives, were situated along the coast to the north-east—Sepinggang eight kilometres from the town and Manggar a similar distance further on. The strength of the Japanese garrison was estimated at up to 5500 troops, with another 3000 civilians who could potentially be pressed into military service, and 79 guns of calibres ranging from 20 to 127mm had been identified. The strongest Japanese positions were located in the hills above the town and oil refineries, but other defended localities were established around the two airfields and along the coastal road—nicknamed the Vasey Highway—that connected them with Balikpapan.\(^5\)

By this stage in the war Allied planners had access to an array of detailed geographic intelligence compiled by the Allied Geographical Section, which significantly informed the planning of Oboe 2.\(^5\) Such intelligence included detailed profiles of Balikpapan’s beaches, which subsequent experience proved generally accurate. The only beaches determined suitable for landing were those fronting the Dutch suburb of Klandasan, just east of Point Toekoeng and those on the far bank of the Manggar.

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52 I Corps RoO, 72.
53 ‘7 Aust Div Special Oboe Two Intelligence Review No. 2’, 4, 6, AWM52, 1/5/14/73, AWM.
Besar river opposite Manggar airfield. Those between Stalkoeda and the Manggar Besar were marginal and discounted due to reef obstructions and the difficulties of supply across them.\(^5^5\)

The principal decision that Milford and his staff thus had to make was whether to land at Manggar and then advance west, initially avoiding the Japanese bastion at Balikpapan, or to conduct an assault landing straight onto it. The terrain, and the advantages it bestowed on both the Australians and the Japanese, were key considerations. Having commanded the 5th Division as it winkled the Japanese out of bunkers and foxholes in the Lae–Salamaaua hinterland of New Guinea in August-September 1943, Milford was determined to fight on ground that allowed him to maximise the offensive potential of his force and he decided upon the Klandasan option. As he later recalled to Gavin Long:

> Why land up the coast and have to fight through jungle which suits the enemy when you can go straight in under heavy supporting fire, which the enemy can’t stand, in comparatively open and favourable country.\(^5^6\)

While a direct assault against Balikpapan, via the Klandasan beaches, was assessed as having the potential for higher casualties during the landing, it was hoped that the shock of an attack mounted with vigour against the centre of the Japanese defence would disorganise their command and control network and result in a quick victory, ultimately reducing casualties. Landing at Klandasan beach would also allow ‘the full power of the force’ to be quickly deployed on a two brigade front as opposed to the dispersal of the force caused by a landing at Manggar. This latter course of action would require one brigade to defend the beachhead, including the airfield, and the other to advance on a narrow front imposed by the coastal plain, confronting a series of river crossings and Japanese defences oriented to meet such a drive. Milford had little scope for delay as he had been ordered to capture both the airfields and the port quickly, the latter to reduce the risk of having the force dependent on supply over the beach for a prolonged period.\(^5^7\)

As subsequently noted by the 7th Division’s report on the operations, the Klandasan plan was ‘largely dependent on overwhelming fire support from sea and air’ that would systematically destroy the Japanese defences prior to the landing. It was

\(^5^5\)  7 Div. RoO, 1.

\(^5^6\)  Milford to Long, 15 September 1956, AWM93, 50/2/23/445, AWM.

\(^5^7\)  7 Div. RoO, 6-7.
a plan reliant on Allied materiel superiority that would have been impossible earlier in the war. Even though the Japanese position in the western NEI had deteriorated significantly by June 1945 a series of enabling operations was still required to take control of the air and sea around Balikpapan to permit the unimpeded movement of the attack force to its objective. Preparatory air attacks, focussed not just on Balikpapan but on Japanese airfields across the western NEI, commenced on 1 June. The saturation of Balikpapan’s maritime approaches with both Allied and Japanese mines, required a sustained minesweeping effort that began sixteen days before the landings. The vulnerable minesweepers had to be protected from Japanese coastal defence batteries, which entailed a naval covering force that added to the weight of preparatory fire being directed against targets ashore.

Illustrating how a failure to appreciate both geographic and climatic conditions can affect operations, the Oboe 2 air support plan had to modified in the light of the progress of Oboe 1. Originally, air support was to have been provided predominantly by squadrons of the RAAF’s 1st Tactical Air Force operating from the newly captured and improved airstrip at Tarakan. However, wet weather and the airstrip’s location on land prone to inundation meant that it had yet to be rendered operational. USAAF and RAAF Liberators operating from Morotai and the southern Philippines thus carried the lion’s share of the air support tasks. Additional support was called upon from tactical aircraft of the US 13th Air Force, also based in the southern Philippines, particularly to provide a combat air patrol (CAP) over the minesweepers and their covering force. The prevailing weather between the Philippines and Borneo further presented further difficulties as it frequently prevented the CAP aircraft taking up their assigned station. These events caused disquiet about air cover for the landings. United States’ materiel abundance addressed the vulnerability. Rear Admiral Albert Noble, USN, the commander of the Balikpapan Attack Group, requested naval air cover for the landings and was provided with support from three escort carriers.58

By the time the ‘Alligator’ amphibious tractors carrying the 7th Division’s first assault wave grounded and rattled out of the surf at 0855 on 1 July, the Balikpapan area had been devastated by 3000 tons of bombs, 7361 rockets, 38,052 rounds of naval gunfire, and 114,000 rounds of heavy automatic weapons fire.59 The 18th and 21st Brigades landed side by side, while the 25th Brigade waited offshore ready to


59 RAAF RoO, 7; Amphibious Group Eight RoO, I-4, I-12; Gary Waters, Oboe: Air operations over Borneo 1945 (Canberra: Air Power Studies Centre, 1995), 130.
land on call or once the beachhead was secure. The bombardment had the desired effect and little opposition was encountered on the beach. Australian reports are replete with accounts of Japanese prisoners being dug out of collapsed bunkers, extracted from various hiding places, or being captured while wandering dazed and wounded; indeed many fled days prior to the landings. The severity of the shock was just as well for the landings were marred by multiple tactical level mishaps including disorganisation on the beach due to misdirected landings, faulty communications equipment, bogged tanks, and troublesome liaison with the vessels providing naval gunfire support. As one report observed, a less cowed enemy would have made the Australians pay for these mistakes.

Strong leadership and thorough briefing also allowed the assaulting battalions to recover from these setbacks. Concerted efforts were made to convey the unprecedented level of intelligence available to the lowest ranks, through terrain models, the establishment of information centres at Morotai and the distribution of aerial photos down to section level. The Commanding Officer (CO) of the 2/10th Battalion, Lieutenant Colonel Tom Daly, later reflected, ‘when we hit the beach these fellows were better informed as to what they had to do than they had ever been before’. Milford had emphasised the ‘need to push on and gain ground’ to secure the beachhead—an imperative that was exemplified by the 2/10th’s capture of Hill 87, the first major prominence on a ridge that dominated the landing beaches. Denied most of his allocated fire support due to some of the problems mentioned previously, Daly seized the initiative and committed his men to an immediate assault, forestalling an attempt by the Japanese to emerge from cover and reoccupy their battered positions.

One member of the 2/27th Battalion later summed up 1 July’s action as ‘we got in there pronto and held the high ground’, and actions like those of the 2/10th prevented the Japanese from recovering their composure and contesting control of

60 Various interrogation reports contained in AWM52, 1/4/1/76, 1/5/14/76, 1/5/14/77, AWM.
62 18 Bde RoO, 3.
63 Daly, interview with Butler and Cantwell in Garth Pratten and Glyn Harper (eds), Still the Same: Reflections on active service from Bardia to Baidoa (Georges Heights: Army Doctrine Centre, 1996), 24; 1 Corps RoO, 64.
64 Garth Pratten, Australian Battalion Commanders in the Second World War (Melbourne: Cambridge University Press, 2009), 1-2, 244-5.
Balikpapan in any significant fashion.\textsuperscript{65} By the evening of 3 July the remnants of
the town and the oil facilities had been cleared, and Sepinggang airfield captured
without a fight. With the 25th Brigade brought ashore, Milford’s force was poised to
secure its prize by pushing out from the enlarged beachhead.

**Challenges of the Tactical Environment**

‘Having got the essential ground’, Milford explained to Long in an interview after
the campaign, ‘time became of less importance so to save cas[ualties] the idea was
to shell and manoeuvre him out of position rather than direct assault’.\textsuperscript{66} Milford’s
operations developed along two principal axes. On the left the 25th Brigade advanced
out of Balikpapan and north along the Samarinda Road, nicknamed the Milford
Highway, while on the right the 21st moved from Sepinggang to the second airfield
at Manggar. The philosophy underpinning Australian operations was to maximise
the use of indirect fire support and attack aviation to pave the way for infantry assault.
As the CO of the 2/14th Battalion, Lieutenant Colonel Phil Rhoden, later recalled,
operations unfolded with ‘unhurried, calculated and deadly precision’; a soldier of
the 2/33rd Battalion summed up the approach as ‘probe it-blast it-then occupy it’.\textsuperscript{67}
Although the Japanese fought hard for Manggar, in most instances along the Milford
Highway assaulting troops found their enemy gone once they closed with a position.
By 9 July the 21st Brigade had secured Manggar and the 25th’s advance had caused
the abandonment of a line of defended hills astride the Milford Highway, which was
known by the unlikely name of the Muffle-Jam position.

The Japanese commander, Vice Admiral Kamada Michiaki, however, had not
intended his troops to stand to the last at Muffle-Jam. He understood his enemy’s
strengths and his own and was drawing the Australians into terrain that he hoped
would allow him to start dictating the terms of the fight. Although Kamada had
hoped to prevent the establishment of a beachhead, in the middle of June he had
also made preparations to contain an attacking force further inland, drawing out
the operations, and preventing it from being employed elsewhere.\textsuperscript{68} The relatively
open nature of the terrain thus far had been to the 25th Brigade’s advantage but
beyond Muffle-Jam the jungle closed in, channelling the advance along the narrow

\textsuperscript{65} Simms, interview with Linn, 31 January 1990, S00789, AWM.
\textsuperscript{66} Milford, interview with Long, 15 August 1945, AWM67, 2/89, AWM.
\textsuperscript{67} William Crooks, *The Footsoldiers: The story of the 2/33rd Australian Infantry Battalion, A.I.F.*
\textsuperscript{68} ‘Japanese Military Operations—Interrogation of Japanese Commanders and Staffs’, 7-8, 18,
AWM54, 424/4/6, AWM; *Japanese Monograph No. 115: Borneo Area Naval Operations 1945* (Tokyo:
dirt track that the Milford Highway had now become. Manoeuvre and observation were limited, and, as a result, so was the employment of supporting arms.

It is telling that the most costly Australian action of the campaign occurred amongst this jungle terrain. On 10 July the 2/31st Battalion was leading the advance along the Milford Highway. Its leading elements had already been subject to what today would be referred to as complex ambushes—the detonation of daisy-chains of buried aerial bombs and marine depth charges, followed by engagement by machine guns from multiple firing points. Earlier in the day it had captured several features along the road, the last in a short but vicious fight that ended at bayonet point among well-camouflaged bunkers. Believing that the Japanese resistance had been broken, the 2/31st’s CO, Lieutenant Colonel Murray Robson, ordered another assault on the next feature—‘Coke’—by A Company. After a preparatory bombardment, 18 Platoon, supported by three Matilda tanks, would move out of the road cutting where the battalion’s forward elements now held firm, traverse a slight dip in the road, and then seize the slopes of Coke beyond.69 There was to be no delay for patrolling through the scrub on either side of the road, despite protests by both the Officer Commanding and Company Sergeant Major of A Company.70 The plan sacrificed security to momentum, showed a disregard for the terrain, and was based on faith in Australian firepower and the assumption that the enemy was broken. They were not.

At 1700 the preparatory barrage ceased. As Bob Curtis, an attached journalist, reported, ‘there was no movement on Coke Hill, nothing to disturb the low cloud of dust and smoke hanging over it’. The assaulting troops advanced: two engineers searching for mines, followed by 18 Platoon’s sections interspersed with the tanks. They had moved barely 100 metres when, as Curtis continued, ‘from both sides of the jungle screamed a cataract of lead’.71 18 Platoon rushed for their objective. Some made it to within 20 metres of a series of well-camouflaged positions dug under fallen trees, but many were shot down. Fire also fell on the battalion command post in the cutting. A Company’s other two platoons were ordered into the scrub on both sides of the road but made little headway. The tanks fired until their ammunition was expended. At 1750 the order to withdraw was given; 18 men were dead, 11 of whom had to be left lying on the road, and 23 were wounded.72

69 2/31 Battalion war diary, 10 July 1945, AWM52, 8/3/31/27, AWM.
70 Hearne, interview, 9 June 2015.
72 2/31 Battalion war diary, 10 July 1945.
The action had achieved Kamada’s aim. After the 2/31st’s mauling, the 25th Brigade’s operations reverted to more cautious patrolling and bombardment, feeling out the extent of the larger Japanese position. Gradually nibbled away, it was held until the threat of encirclement caused its abandonment on 18 July. The Australians knew there was another position waiting further along the highway and that, as Brigadier Ken Eather, the 25th Brigade’s commander, wrote, the Japanese would ‘scrap like the very devil’ if pushed. At this point, satisfied he had achieved his objectives, content he could maintain security with an active patrolling program, and convinced that pushing on towards Samarinda would just incur more casualties, Milford called a halt to the advance.

Although once the troops had left the beach Balikpapan was largely a conventional land operation, Milford could not ignore the tactical implications of the littoral environment. It became apparent very quickly after the landings that sufficient tonnage of stores could not be moved across the beach to maintain the force. Balikpapan port thus had to be opened. This necessity caused a stand-off between Milford and Noble that demonstrated the contraints of the operational environment had not been fully addressed in joint planning. To use the port, Balikpapan Bay needed to be swept for mines. Noble would not put vessels into its restricted waters to do so until Japanese guns identified on the Western shore had been secured. Milford offered to put a battalion across to do so but Noble refused to assist, even when a battery of field artillery was offered in direct support with a counter-battery task. Eventually, the western shore was secured by the 2/9th Battalion, crossing the harbour in US Army Alligators on 5 July. This was not the only instance at Balikpapan where readily available small craft would play a critical role.

Milford remained concerned by his riverine flank. Japanese small craft continued to ply the western waterways by night. Not only was there a threat of a raid against the port facilities but it was also assessed the Japanese were using the waterways to redeploy troops and supplies for an eventual withdrawal overland towards Banjarmasin. Thus, two battalions were ultimately committed to what Gavin Long described as a ‘unique river war’ using small boats to establish and maintain forward operating bases and conduct water-borne patrols up to 30 kilometres inland.

74 Milford, interview, 33.
75 Milford, interview, 34-5.
76 Dickens, Never Late, 348-50.


Conclusion

Writing to Long during the compilation of the Australian official history of the war, Chilton observed that ‘from a military point of view’ the main interest of Oboe 2 lay not so much in the details of the fighting ashore, but in the ‘nature and scale of the amphibious assault’:

One’s main impression was of the tremendous complexity of an operation of this kind and of the great resources which are necessary to carry it out, resources which only a major power can afford. For the first time in the experience of most of us, we saw a real demonstration of allied power.77

Returning to the concept of geo-strategy with which this chapter opened, what the operations at Balikpapan clearly demonstrate is that its application rests on the ability of technical means to overcome geography’s constraints. The constancy of these constraints was evident in the near-identical plans developed for operations around Balikpapan by Japanese and Allied commanders, channelled as they were through the same maritime approaches and forced to seek intermediate bases to overcome the limitations of land-based airpower. The course of these operations also supports the concept of ‘strategic space’—the ability not just to project power but to do so affordably—advanced by Patrick Porter elsewhere in this volume. Assessments of the expected opposition determined the relative size and complexity of the Japanese and Allied operations. In the Allied naval raid on the Japanese invasion force, the impediment caused to both Japanese sustainment operations and the Australian landings by mines, and the overwhelming force assembled to carry out Oboe Two with a minimum of casualties we glimpse ways in which force projection could be pushed beyond an affordable threshold and the barrier of geography reinstated.

In common with Chilton, the other brigadiers of the 7th Division were relatively benign in their assessments of the campaign ashore. Writing to his parents on 29 July, Eather remarked that the Balikpapan campaign had been a ‘short, sharp little show beautifully planned & carried out with dash and speed’.78 Dougherty similarly noted in his post operations report: ‘I hope that all young men in this division will remember the demonstration of the use of fire power, and its effect, given to them in “Exercise Balikpapan”’.79 Compared to the costly and under-resourced Papua campaign of 1942 in which all three had played a role, the price of victory at Balikpapan was considered relatively light in terms of Australian casualties: 229 killed and 634 wounded.

77  Chilton to Long, 23 October 1957, AWM93, 50/2/2322, AWM.
78  Eather, Desert Sands, 160.
Nonetheless, it is still worth considering the grimy tactical detail of the campaign alongside the tabulated statistics of force projection. While the Australians’ fire support was the decisive factor in many engagements there were still numerous small actions—patrol clashes, blind nocturnal mêlées with Japanese infiltrators, the storming of Hill 87, the ambush at Coke—that were vicious affairs fought at close quarters. They serve as a reminder that force projection, no matter what its scale, is predominantly an enabler for land combat. As has been shown in this chapter, terrain, vegetation, and climate, particularly when exploited by a calculating enemy, can escape the attention of geographic intelligence, frustrate the best-laid plans, and call-out hubris born of technical superiority. Then, with storms grounding the air cover, and the tanks bogged, the success of the entire endeavour will rest, as it always has, on the shoulders of a soldier, with a rifle, ready to close with the enemy.

Balikpapan ultimately demonstrates that the ability to conquer geography is pointless without coherent operational schemes to link tactical efforts with well-conceived strategic ends. By the time Milford called a halt to his division’s advance Balikpapan’s much vaunted oil facilities lay in ruins, having been neither protected nor conserved, and the oilfields that supplied them remained in Japanese hands beyond the Australian patrol line until the end of hostilities in August. Although Balikpapan’s wharves were sufficient for the discharge of Australian shipping, the port infrastructure was wrecked beyond repair by Allied bombing and Japanese demolition. RAAF Spitfires commenced operations from Sepinggang airfield in mid-July, but neither it nor Manggar proved suitable for expansion to operate heavy bombers as envisaged. Long walked the battlefields of Balikpapan in August 1945 and his subsequent reflections cast a tragic shadow over the assessments of Chilton, Dougherty and Eather, and the extraordinary effort that saw the 7th Division landed and maintained 6000 kilometres from the Australian mainland: ‘the wreckage that had been Balikpapan was of no value to anybody except the scrap-metal traders’.
One of my favorite books (and films) growing up was *On the Beach*.1 It depicted life for a group of people in Melbourne, Australia, following a nuclear exchange in the Northern Hemisphere. The brief but volatile war had poisoned the atmosphere with radiation, killing everyone living in the conflict zone, and the airborne poison was gradually creeping south and threatened to exterminate everyone.

A glimmer of hope appears when a Morse code radio signal message is picked up from the Seattle area in the United States. A submarine is dispatched to see if there are actual survivors from World War III. The submarine is a US nuclear vessel, with a US crew, now under voluntary control of the Australian military. The United States government had ceased to exist.

The crew journeyed northward, finding no signs of life and only bombed out cities. They arrived in Seattle and found the signal coming from an open window and a broken sash that was blowing in the wind. Occasionally, it would randomly strike a telegraph key. They found no survivors along the western coast of the continental United States and Canada, travelling as far north as Alaska. Some Americans aboard the submarine disembarked in the United States and left the ship. They wanted to die in their hometowns.

The crew also investigated a theory known as the Jorgenson affect, which hypothesised that radiation levels would start dropping off rather quickly due to ‘weather conditions’, presumably meaning that rains would eventually wash the radiation from the atmosphere. Sadly, they found no evidence of a decline in radiation levels to support the theory. They stopped in Hawaii on the return voyage, again finding no survivors. With despair, the remaining crew returns home.

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Back in Australia, people tried at first to go on with their normal lives. Over time, a growing sense of despair, and actual sickness, begins to overtake them. Some died taking government issued suicide pills. Others sought out dangerous behaviour, such as racecar driving or drinking to excess. They argued about whether to move up the fishing season. If not, they would all be dead by the time the season arrived. In the end, they all die in their own way.

A phrase from T.S. Eliot in *The Hollow Men* ended up on the inside cover of the Shute book, saying ‘the world will end not with a bang but with a whimper’. By noting this, I am not saying they we are all doomed by nuclear war or climate change. Nor do I imply a slow demise of humanity.

What I am saying is that like nuclear war, no part of the planet, including Australia, is too far away or too remote to be impervious to global trends. Like nuclear war, the impacts of climate change will be most severe outside of Australia’s territorial landmass. The country is much less directly threatened than elsewhere because it is surrounded by water that ameliorates warming to some extent and because the sea offers a physical buffer. It is a developed society with ample resources to adapt. This is not to say Australia will not be, and is not now, undergoing dramatic climate change. Changes in prevailing precipitation patterns are already producing sizeable droughts of concern. Maximum temperatures have in recent years shattered long-standing records. Whether these two trends are tied to climate or seasonal patterns such as El Nino is not entirely clear.

While Australia’s population is not expected to be severely impacted by climate change and will be able to adapt, other countries in their neighborhood will encounter quite different fates. In South and Southeast Asia and among small Island states in the Pacific, high populations, stagnating incomes, social unrest, and climate change will all impact Australian security interests. Australia may be asked to intervene or supply humanitarian assistance, or will be a destination for migrants from these and other countries.

Robert Sturrock and Peter Ferguson believe that Australia’s reality and image of isolation is evaporating: ‘so often marked by the “tyranny of distance” in our history, the view of Australia’s geographic position has shifted in the past decade.’ They see a nation that sits on the doorstep of the one of the greatest economic expansions in history that is underway in East, South, and Southeast Asia. In the midst of the possible boom era, is also a note of caution. ‘Missing from the assessment of

Australia's geography is an explicit understanding of the climate security challenge confronting our region and us. The problem of climate change for Australia, and the world, is in the time and the context for its unfolding.

**The Great Acceleration**

Starting around 1950, global indicators based on many socio-economic dimensions (population, highway miles, per cent urbanisation, telephone availability, satellites in orbit, airplanes in service, automobiles on the highways, etc.) began an exponential rise. These leaps in the human experience are leading to a phenomenon that some researchers refer to as the Great Acceleration. We live in a time of breathtaking advancement on many dimensions.

The Great Acceleration has improved the lives of many, but not for all. In spite of this progress, ‘equity issues remain stubbornly difficult to solve and are driving deleterious social outcomes across the planet’. To understand this unfolding future, it is important to look at trends of climate and of people to understand global trends in climate and socio-economy. It reveals both trends of improving quality of life and deteriorating social inequality.

It is not only the addition of more people that has made this period ahead extraordinary. It is also the increase in human interactivity on a wide variety of indicators. This period is now emerging but has been in the making at least back to 1700. The recent rise is exemplified on demographic, economic, and environmental dimensions. All show exponential growth (see Figure 1).

Population totals are on a rapid rise as is the percentage of people in urban areas. With respect to economy, real gross domestic product has quickly grown, as has foreign direct investment, primary energy use, and paper production (though some see a sharp drop-off due to computerisation). Environmental indicators also reveal similar substantial upticks, for fertilizer production, large dams, and water use.

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Trends in Climate Change

Many researchers, elected representatives, and governments are calling for a strategy to limit climate change to 2.0° C, a point where severe environmental, social, and economic stresses would likely ensue. When this might occur differs by climate forecast scenario.

The Intergovernmental Panel on Climate Change (IPCC) provides an analysis every four years showing consensus in climate forecasts. This Assessment Report (AR5 for 2013) uses scenarios that predict a future temperature rise that range from 1.0° C to 3.7° C by 2100. There are also estimates for final temperature stabilisation. All of these stabilisation dates, or when emission and absorption rates will be roughly equal, take place beyond the year 2100. The table below shows the range of increase under four Representative Concentration Pathways (RCP). The RCP is a possible scenario of future warming used by the IPCC (see Table 1).

There are four ways of assessing and comparing the temperature data under each scenario. First, the extent of temperature rise widely differs by RCP scenario. The most extreme estimate sees a temperature almost twice the 2.0º C level of catastrophe. Two scenarios assume it will be easily breached. One RCP shows a temperature rise of +1.0 ºC. At the other extreme, a high temperature is forecast of +3.7 ºC, or nearly four times as great. This diversity indicates a wide range of expectations.

Second, the rate of rise differs by RCP and when the 2.0º C threshold will be exceeded. About 2060, the choices among the differing pathways start to significantly diverge (see Figure 1). The trend lines show only about a 0.5º C difference in the 2060 forecasts between the RCP 2.6 and RCP 8.5 scenarios. After this point, the forecasts begin to show very different pathways.

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Climate impacts will reveal themselves in the medium-term period. About 2060, the 2.0°C threshold will be exceeded in the RCP 8.5 scenario. By 2100, RCP 6.0 will zoom well beyond this level, along with RCP 4.5 scenario. Half the simulations assume this barrier will likely be breached over the coming century and one other suggests it will occur in the 22nd century. All scenarios see the threshold eventually being surpassed.

Third, the extreme estimates extend from as low as 0.2°C or as high as 7.5°C. The range is the greatest in the high and low RCP scenarios. At the low end, the climate of the future is not so unlike that of today. At the high end, global temperature surges beyond most historical examples and have few comparisons.

Fourth, there is the point where temperature rise begins to level off and decline. The two higher temperature forecasts (RCPs 8.5 and 6.0) will increase at a relatively constant rate well past the year 2100. The lesser temperature forecasts start to level off by 2100 (RCPs 4.5 and 2.6). When temperatures level off is key to the long-term trends and minimising environmental damage. Most analysts agree that the earliest climate interdiction is the most cost-effective in terms of limiting future economic losses (see Figure 2).

Figure 2: The Range of the RCP Pathways.

<table>
<thead>
<tr>
<th>RCP</th>
<th>2100 Temperature*</th>
<th>Long Term Temperature Range</th>
<th>Range of 2100 Temperature Forecasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5</td>
<td>+3.7°C</td>
<td>Stabilises after 2250</td>
<td><img src="image" alt="Graph showing temperature forecasts" /></td>
</tr>
<tr>
<td>6.0</td>
<td>+2.2°C</td>
<td>Decreases between 2100 - 2250</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>+1.8°C</td>
<td>Decreases between 2100 - 2250</td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>+1.0°C</td>
<td>Decreases after 2100</td>
<td></td>
</tr>
</tbody>
</table>

* Increase in temperature forecast compared to 2000 data

8 Ibid.
Changes in precipitation out to the year 2100 will show a high degree of regional variation. While many areas will see less precipitation, others will see more. The drying areas are more pronounced on land areas than sea locations. Conversely, wetter locations occur in ocean areas. The extremes of more precipitation are much less than the extremes of greater aridity.

On land areas, there are two bands that stretch horizontally across the planet. One dry band is situated around the Tropic of Cancer and the other around the Tropic of Capricorn (see Figure 3).

Figure 3: Temperature in 2100 Compared to 2000 (AR4).

The highest degree of temperature change will occur around the Arctic Circle (60° north). The next highest area of temperature rise is around the Tropic of Cancer in the Northern Hemisphere. This phenomenon may be a factor because of the North American and Eurasian landmasses that crowd this part of the globe. Land tends to retain heat longer than sea areas. The hotter temperature will lie mostly within and north of the Equator. The increases for the Tropic of Capricorn and the Antarctic Circle are expected to be modest in comparison to the northern polar areas (see Table 2).

9 In terms of magnitude, the bands start at light yellow (0 to -0.25 mm per day), then yellow (-0.25 mm per day to -0.50 mm per day), and finally light brown (-0.50 mm per day to -0.75 mm per day).

For precipitation, there are also mixed results, especially by region. There are clear zones where both wetter and drier conditions will be encountered compared to past trends. Two bands follow clearly identifiable patterns. First, the Tropic of Cancer drying zone stretches from Mexico and Central America, across the Atlantic to the Mediterranean Sea, through Central Asia, and picks up again in the Pacific Ocean east of Japan and China. This band impacts mostly developed countries (see Figure 4).

Figure 4: Changes in Precipitation in 2100 Compared to 2000 (AR4).\textsuperscript{11}

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Table 2: Temperature Bands.

<table>
<thead>
<tr>
<th>Zonal Band</th>
<th>Temperature Change and Amount</th>
<th>Key Land Areas Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic Circle</td>
<td>Increase, High</td>
<td>Canada, United States, Russia</td>
</tr>
<tr>
<td>Tropic of Cancer</td>
<td>Increase, Moderate to high</td>
<td>Mexico, North Africa, the Middle East, Central Asia</td>
</tr>
<tr>
<td>Equator</td>
<td>Increase, Moderate</td>
<td>Congo, southern India, New Guinea</td>
</tr>
<tr>
<td>Tropic of Capricorn</td>
<td>Increase, Low</td>
<td>Brazil, Southern Africa, Australia</td>
</tr>
<tr>
<td>Antarctic Circle</td>
<td>Increase, Low</td>
<td>None, now</td>
</tr>
</tbody>
</table>
Second, the Tropic of Capricorn band starts in Brazil, crosses the Atlantic Ocean, spans Africa, extends all the way to Australia, and finally passes across the Pacific Ocean back to South America. This band includes mostly developing countries.

For wetter areas, there are three bands. One band centres on the equator, mostly across the Pacific and Indian Oceans. This will impact developing countries. A second band straddles the Arctic Circle, where more precipitation is expected, of concern to developed countries. A third band encircles the Antarctic, where an ongoing transition from snow to rain is also underway (see Table 3). This is also a province of special interest to developed countries.

Fourth, these climate forecasts assume a time horizon out to 2100. This time frame is purely an artefact of the limits of scientific forecasting reliability. The era of a warmer planet will stretch well off into the future. The IPCC report finds that it would take centuries to return climate to pre-Industrial levels.12 The enormity of the challenge is much greater than just the lifetimes of people today.

Table 3: Precipitation Bands.

<table>
<thead>
<tr>
<th>Zonal Band</th>
<th>Precipitation Change and Amount</th>
<th>Key Countries or Regions Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic Circle</td>
<td>Increase, Low</td>
<td>Canada, United States, Russia</td>
</tr>
<tr>
<td>Tropic of Cancer</td>
<td>Decrease, Low</td>
<td>Mexico, North Africa, the Middle East, Central Asia</td>
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</tr>
<tr>
<td>Antarctic Circle</td>
<td>Increase, Low</td>
<td>None, now</td>
</tr>
</tbody>
</table>

Even after hundreds of years and a fall in greenhouse concentrations, lower temperatures will lag much later. For RCP8.5, by year 3000 (700 years after emissions have ceased) global temperature only decreases by 1-2° C (relative to its peak value by 2300).13 This is in large part due to differing decay rates between greenhouse gases. For example, ‘about 20% of emitted CO2 is still in the atmosphere after 1000 years.’14

12 Ibid.
13 Ibid., 60.
14 Ibid., 77.
Shifts in Demography

New UN population forecasts include probabilistic assumptions to estimate growth. World population is expected to increase from 6.9 billion people in 2010 to 10.9 billion in 2100 (with a range of 9.6-12.3 billion). Of that total, about 1.3 billion will be from developed countries, while 9.6 billion will be from developing countries (using current definitions). There is of course a bias to this projection, since some of the countries in the developed category will ‘graduate’ during this time horizon. Some middle-income countries are expected to join the developed ranks well before 2100. Parts of East and Southeast Asia, and Latin America will make this transition to the developed cohort. Their population growth rates are already declining (see Figure 5).

Figure 5: Range of Population Forecasts.¹⁵

Note: The IS92 forecasts are both from the United Nation and the other two forecasts are from the International Institute for Applied System Analysis.

¹⁵ Ibid.
It is assumed that the world’s economy will continue to grow in the future at a rather modest pace of 2-3 per cent per year. This pace would eventually outstrip population growth, except for the fact that not everyone will share in the prosperity. Distributions of wealth suggest the world’s inequality is going to grow and has been increasing for half a century. The least developed countries, which are not likely to become developed even by 2100, will increase by almost four times in terms of share of global population.

Global inequality will be especially concentrated in Sub-Sahara and South Asia. These two regions had about one quarter of world population in 1950, by 2000 totaled one third, and by 2100 will be about one-half. For the poorest, the rise is even greater. The very least developed countries accounted for only 7.7 per cent of world population in 1950. By 2000, their share rose to almost 11 per cent and by 2040 will almost double to 17 per cent. By 2100, more than one-quarter of the world’s population will be the poorest people (see Table 4).

Table 4: Percentages of World Population by Development and Geography.\(^{16}\)

<table>
<thead>
<tr>
<th>Year/Regions</th>
<th>1950</th>
<th>2000</th>
<th>2020</th>
<th>2040</th>
<th>2060</th>
<th>2080</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Developed</td>
<td>7.7</td>
<td>10.8</td>
<td>13.6</td>
<td>17.1</td>
<td>20.8</td>
<td>24.3</td>
<td>27.0</td>
</tr>
<tr>
<td>Sub-Sahara and South Asia</td>
<td>26.6</td>
<td>34.1</td>
<td>38.6</td>
<td>43.4</td>
<td>48.3</td>
<td>52.5</td>
<td>55.5</td>
</tr>
</tbody>
</table>

The shifts in world population by 2100 are enormous in comparison to today. By 2100, Africa will challenge Asia as the world’s most populous continent with a population between 4 and 5 billion. Africa’s population will continue to grow beyond 2100 while Asia’s population will stagnate and then decline. Looking past 2100, Africa will inevitably overtake Asia and claim the largest share of world population. Sub-Sahara Africa drives the continent’s population rise. Sub-Sahara Africa alone will exceed Asia in population, perhaps by 2150.

Climate Factors in Conflict

The relation of climate to conflict is in fact a complicated process. How do we get from one to the other? This process is not a direct one but is quite indirect, and can be imagined like a series of dominoes falling. This section illustrates several pathways from climate to conflict and then identifies the two major types of climate conflict: hot and cold wars.

Pathways

There are three indirect pathways that lead from climate to conflict: they are indirect roads, one of many factors, and require a catalyst. The climate to conflict pathways, and the feedback, engender four assumptions.

First, climate must involve sustained trends, not simply single year anomalies, and it is a structural factor. A single year does not constitute a trend and may well be an outlier. Over time, however, sustained climate change will multiply in terms of impact. The link from climate to conflict is overwhelmingly indirect and has been referred to as a multiplier effect, a threat enhancer, a causal factor, and a trend accelerant, among others.

Second, climate is but one of many intervening variables when it comes to conflict. These other causes might include prior wars, ethnic or religious differences, economic or demographic pressures, and many other factors. ‘Only a very weak direct causal connection between climate change and violence has been empirically demonstrated. Indeed, there is a general consensus that environmental problems are usually only one of many complex factors implicated in violent conflict.’17

Third, there needs to be a conflict trigger. A structural problem may set the stage for a wildfire, but a match is needed to incite it. Many analysts note that North Africa and the Middle East had been in terrible drought for some years prior to the onset of the Arab Spring. Along with many other factors, in Tunisia it was the suicide of a vegetable seller that led to the uprising and overthrow of the government. Likewise, the Rwanda genocide was preceded by years of over-population, ethnic hostilities, and drying conditions linked to deforestation. The catastrophe was launched after a mysterious plane crash in which the country’s president was killed.

17 Peter Christoff and Robyn Eckersley, ‘No Island is an Island: Security in a Four Degree World’, in Christoff (ed.), Four Degrees of Warming, 196.
Three other factors have significant impact on the climate and conflict pathways. First, does the scarcity or the abundance of a resource cause resource conflict? The issue of resources is at the heart of cases of climate change and conflict. Rather than one or the other, I think it is both and more. The scarcity of food, for example, would be a driver of social dissonance or migration. On the other hand, making new cold area lands habitable might be a source of new economic growth and more stable communities and a destination for those migrants. Thus, there are both ‘pull’ and ‘push’ factors at work in migration and ‘full’ and ‘empty’ belly theories to account for aggression.

Second, migration is destabilising if it occurs on a large scale in a short period. Large flows of people due to climate change create conditions for conflict in two places. Their home communities are fractured and in their destination homes they are often unwelcome. There are four types of migration by destination where climate change might play a role.

(a) Most migration is actually internal or within climate stressed countries. This movement will increase the burden on already fragile governments.

(b) Second, there are population overflows to neighbouring countries. This is the case in developing countries characterised by porous borders.

(c) There are also difficult migrations that connect climate or poor stressed regions to the developed world. These routes are quite problematic not only in the origination and destination problems, but the security threats along the way.

(d) Last, there is a general pattern of rural to urban immigration that will especially feed trends in all the above areas. Lives in many urban areas are often no improvement in their economic or personal security. Combined with new technologies, climate change will hasten this migration.

Third, there will be differences in the timing of the pathways. Lags in behaviour can lead to underestimating impacts that might over the course of many years cause conflict. A severe drought that extends over several years would sap harvests but also gradually reduce assets of people in rural areas who are forced to sell land, property, and animals. It is over the long term they will suffer most as their assets are drawn down.

*Hot Wars and Cold Wars*

The pathways for conflict will differ according to regional differences. There is of course a complex of factors that lead to many climate and war classifications. To generalise however, we can organise the conflict pathways into hot and cold wars.
By this, I mean places already warm become warmer and places now cold become warmer (see Figure 6).

The two types of conflict reflect differing histories and geographies. Their distribution represents ‘tension belts’ or swathes of the planet where conflict may be particularly acute. The Hot Wars (the Old Tension Belt) cluster around the low latitudes and are not new areas of conflict, but a continuation of trends for hundreds if not thousands of years. The Cold Wars (the New Tension Belt) cluster around the high latitudes, especially in the northern hemisphere. These are new conflicts.

**Figure 6: Hot and Cold Wars.**

History and geography are major differences, but many other criteria shape how the Cold and Hot Wars fundamentally differ. The two tension belts can be compared on a variety of political, resource, demographic, and socio-economic dimensions (see Table 5). The table shows the sharp divide in issues facing peoples and governments in the two regions.
The two major measures of climate change, temperature and precipitation, offer differing drivers in the two conflicts. These two conflict types pose very different pathways to conflict, though they are admittedly related. In terms of national resources and power, the Hot War constitutes a contraction or power (due to a diminution of resources) and the Cold War an expansion (due to opening more resources).

Conflicts in the Hot War areas are long-term and in some instances have been underway for long periods. The length of conflict will highly differ in the two regions. Cold Wars will likely be much shorter in duration. In terms of migration, Hot Wars will act as push factors while Cold areas will be pull factors. In Hot Wars, the ability to adapt is limited and human security is low.

<table>
<thead>
<tr>
<th>Table 5: Hot and Cold War’s Dimensions.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimension</strong></td>
</tr>
<tr>
<td>Climate Driver</td>
</tr>
<tr>
<td>Power Impact</td>
</tr>
<tr>
<td>Conflict Duration</td>
</tr>
<tr>
<td>Migration Cause</td>
</tr>
<tr>
<td>Level of Development</td>
</tr>
<tr>
<td>Conflict Driver</td>
</tr>
<tr>
<td>Resources Impacted</td>
</tr>
<tr>
<td>Ability to Adapt</td>
</tr>
<tr>
<td>Human Security</td>
</tr>
</tbody>
</table>

An overlay of historical patterns in conflict onto a regional template of climate forecasts indicates some alarming areas of overlap. Data from the Stockholm International Peace Resources Institute (SIPRI) show that in the post-World War II era, there are several continuing and intense areas of conflict. Key areas of historical conflict show Southeast Asia especially, as well as East Africa, South Asia, the Middle East, and the Mediterranean Sea area (see Figure 7). These are often places where climate change will be highest.
Rings of Fire: Australia’s Climate and Security Interests

How will climate change and conflict impact Australia’s direct and indirect national interests over the next century? It depends on how one looks at the world. I suggest that it is best to analyse Australia’s interests as a series of expanding rings or zones that emanate from the homeland outward.

To assess this question it is necessary to define Australia and its vital regions. That assessment would cover five zones. This first zone includes the Australian landmass, offshore islands, and related undersea claims. The second zone includes three areas that are largely sea: Meganesia, Micronesia, and Polynesia. The third zone sits on the edge of the Asian continent, especially South and Southeast Asia. The fourth zone however looks south to claims on the Antarctica continent and regional rivalries there. Last, there are Australian interests due to global politics and polices that place them on the world stage (see Table 6).

The five zones have differing degrees of impact on Australia in both socio-economic and in climate terms. The highest impact areas will be in Asia and the Pacific Islands. These demands on Australia will still be some distance away in both place and time. A southward focus will come increasingly clear, especially in the islands near to Australia and in Antarctica.
Table 6: Australia’s Zones of Climate, People, and Security Interests

<table>
<thead>
<tr>
<th>Interest Zone</th>
<th>Future Socio-Economic Impact</th>
<th>Climate Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Adaptation Likely</td>
<td>Moderate</td>
</tr>
<tr>
<td>Meganesia, Micronesia, and Polynesia</td>
<td>Outside of Australia, serious sovereignty issues due to sea level rise</td>
<td>High</td>
</tr>
<tr>
<td>Asian South and Southeast</td>
<td>Immense migration push and pull factors</td>
<td>Moderate</td>
</tr>
<tr>
<td>Antarctica</td>
<td>Claims will proceed and permanent places will be established</td>
<td>High</td>
</tr>
<tr>
<td>Rest of World</td>
<td>Interests and treaties have a worldwide concern</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Australia’s Sovereign Areas

To put Australia’s security interests in perspective, it is useful to look at the country’s place on the globe (see Figure 8). Often thought to be ‘Far Away’, the country is becoming a focus on climate and conflict trends. Australia exists in a large neighbourhood that includes large parts of Asia, the southern Pacific Ocean and the eastern India Ocean, and Antarctica.

Figure 8: A Focus on Australia: the Homeland.
The first zone of security interest includes the land mass and offshore islands as well as related Territorial Waters, Exclusive Economic Zones, and claims to the Continental Shelf. This is a substantial area and larger in size than most countries. Australia's ocean territory covers 16 million km² or double the amount of its land area.\textsuperscript{18} 

Australia's climate impact on the homeland will be severe but within the bounds of adaptation. It will be in some ways a continuation of current trends. ‘Warming of less than 1° C has already forced major changes in food and insurance markets; in what, where and when we plant in Australian agriculture; in resources allocated to management of natural disasters; and in the cost of utilities supplying water and electricity.’\textsuperscript{19} 

Marine creatures are moving polewards and changing their seasonal behaviour patterns due to warming ocean waters.\textsuperscript{20} The western Pacific Ocean is among the ocean areas that are heating up the most. The migration of fish stocks away from where they are found today presents major challenges for future fishing regulation.\textsuperscript{21} With fish species moving towards the poles due to warming, the likelihood of intrusions by Asian fishing fleets into Australian territorial waters is bound to increase (see Figure 9).

\textit{Micronesia, Melanesia, and Polynesia}

The second zone of interest to Australia is Micronesia, Melanesia, and Polynesia. This area is mostly sea, very isolated, with populations that are not sustainable often by local conditions.

There will also be a greater attention on undersea resource rights at the bottom or underneath the ocean, including its claims to the Extended Continental Shelf (ECS). Australia and Papua New Guinea set one maritime boundary for fishery rights (in the water) and another for ocean bed resources (under the water).

Many Pacific Islands are at risk from sea level rise, such as Vanuatu and Kiribati. The president of Kiribati announced they had only 30-60 more years before they would be forced to leave. The country is already exploring a move to Fiji. The Maldives (in the Indian Ocean) and other island countries have already approached Australia for possible migration in the future (see Figure 10).


\textsuperscript{19} Ross Garnaut, ‘Compounding Social and Economic Impacts: the Limits to Adaptation’, in \textit{ibid.}, 141.

\textsuperscript{20} Hoegh-Guldberg, Poloczanska, and Richardson, ‘Australia’s Marine Resources in a Warm, Acid Ocean’, 92.

\textsuperscript{21} Ibid., 95.
Figure 9: Australian EEZ Claims.

Figure 10: Melanesia, Micronesia, and Polynesia.

Source: Kuhuroa, Creative Commons.
Sitting on the Edge of Asia

The third zone consists of the edges of the Asian continent, especially South and Southeast Asia, as well as some central Pacific Island states (see Figure 11). The huge populations of impact, their economic development, and resource needs will be matters of future interest. These fragile areas are subjects of discussion in the section that follows.

Figure 11: Australia’s Security Zones with a Northward Tilt.

By region, the types of impacts on Australia will widely vary. In South Asia, the demands for resources and the push of migrants will increase in importance to Australia. The growing economies and the growing populations will provide the simultaneous push for development and migration.

In Southeast Asia, the volume of fresh water in the major rivers that nourish the region, such as the Mekong or Irrawaddy, will see large declines. The melting of Himalaya Mountain glaciers will radically reduce summer flows. China is also building a series of dams to capture this water upstream that will also decrease supplies during critical periods of need for downstream countries.
A growing Chinese presence in the South China Sea, and around Pacific Island nations, will be an indirect impact on Australia’s security interests, but an important one. Resistance to China’s expansion through alignments with neighbours and with other international actors such as the United States will inevitably involve Australia.

We can examine worldwide consequences through two differing criteria: (1) general impacts and (2) hot spots. These consequences show many areas of overlap but also many instances with distinctive traits.

In terms of general consequences in the Asian sphere, there will be at least seven major impacts due to climate change that will have human consequences and that, in turn, have security influences. Some are direct environmental impacts while others are indirect socio-economic impacts. Each will produce unique dynamics regarding conflict. Events occurring in the Asia Pacific region especially could have an impact on Australia (see Table 7).  

Table 7: Climate Impacts on Asia-Pacific Region and Security Implications

<table>
<thead>
<tr>
<th>Climate Impact</th>
<th>Socio-Economic Affect</th>
<th>Conflict Dynamics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inundation of coastal areas</td>
<td>Migration, within country</td>
<td>Hostile immigrant reception</td>
</tr>
<tr>
<td>2. More extreme events</td>
<td>Abrupt social disruption</td>
<td>Refugee crisis</td>
</tr>
<tr>
<td>3. Less fresh water resources</td>
<td>Drop in agricultural income</td>
<td>Lagging incomes in developing countries</td>
</tr>
<tr>
<td>4. Food shortages</td>
<td>Urban unrest</td>
<td>Distribution dynamics</td>
</tr>
<tr>
<td>5. Increase in disease and mortality</td>
<td>Decay in wages</td>
<td>Poverty trap</td>
</tr>
<tr>
<td>6. Economic hardship and instability</td>
<td>Lack of jobs</td>
<td>Slowing of growth</td>
</tr>
<tr>
<td>7. Loss of ecosystems services</td>
<td>Loss of income sources</td>
<td>Fewer resources</td>
</tr>
</tbody>
</table>

There are also nearby countries with existing tendencies towards instability, including Papua New Guinea, several Pacific Islands, and Timor. These countries constitute direct national security interests to Australia. There has also been some episodic instability in Indonesia and the Philippines.

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22 Peter Christoff and Robyn Eckersley, ‘No Island is an Island: Security in a Four Degree World’, in Christoff (ed.), *Four Degrees of Warming*, 191.
Climate is creating conditions for continued instability, especially in Asia. Robert Sturrock and Peter Ferguson believe that ‘Asia is acutely vulnerable because of its exposure to climatic risks which significantly threaten densely populated, urbanised areas as well as economically productive agricultural regions.” The Asian Development Bank (ADB) designates the Asia-Pacific as the global area most prone to natural disasters both in terms of absolute number of disasters as well as populations affected.

There are also several hot spots of concern for Australia. First, there is China’s island-building project and its continued rise in power projection throughout the region. The project intends in part to provide air access and expand the habitable parts of the shoals, but also to raise island height to stay ahead of climate change that would otherwise submerge these low-lying areas. They are trying to keep a step ahead of sea level rise.

The second problem is geography: where seas will increase the most, where there are low-lying areas, and where there are high populations. ‘Globally the top five nations in coastal low lying areas, classified by population, are all in Asia: Bangladesh, China, Vietnam, India and Indonesia.”

The third problem is that climate change will lessen resources in some places. “The geopolitics of East Asia will be increasingly concerned with addressing this resource scarcity nexus.” Some countries, such as India, Pakistan, Bangladesh and China are enormous resource importers, while large parts of Southeast Asia, Indonesia, and Australia are resource exporters to these markets.

**Antarctica**

The fourth zone looks south to claims on the Antarctica continent and regional rivalries there. For reasons of both climate and of resource demands, this area will come into increasing focus for national interests.

The Madrid Protocol on the Antarctic prohibits most types of economic activity. It limits activity relating to accessing mineral resources, other than scientific research, under Article 7 of the 1991 Protocol on Environmental Protection to the Antarctic.

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23  Sturrock and Ferguson, *The Longest Conflict*, 16.
25  Sturrock and Ferguson, *The Longest Conflict*, 16.
26  Ibid.,17.
Treaty. This agreement authorises scientific research but limits commercial economic activity save for tourism. The protocol is reviewable in 2048.

Australia’s claim to the Australian Antarctic Territory (AAT) is the largest of any country. The AAT covers around 42 per cent of the continent. Most of the area is now frozen, but in total it constitutes about three-quarters the size of mainland Australia. Wholly within the Australian claim is a declared sovereign sliver by France.

‘Some countries base their claims in Antarctica on explorer discoveries while others on the claim of geographic proximity. France, the United Kingdom, and Norway, based claims on early explorers (see Figure 9). In the 1950s, Argentina and Chile justified their claims on the basis that the Antarctica Peninsula was an extension of the Andes and, subsequently, geographically constituted a continuation of their recognised territory.’ Other countries do not claim territory but reserve the right to do so, including Russia, the United States, and China, all of whom have a major presence in Antarctica. In 2015, Russia updated their maritime doctrine and added the Antarctic as a region of strategic interest for Russia.

In 2011, the Lowy Institute released a report that urged Australia to be vigilant in advancing its Antarctic claim. The treaty that bans resource extraction expires in 2041 and at that time other countries may press their own claims. The continent is thought to be rich in coal, manganese, iron, and uranium, and large oil reserves. The report cited a lack of icebreakers and ski planes needed to enforce and even monitor Australia’s claims. When the current understanding on claims in Antarctica expires, the need and desire for access to economic resources will certainly be an enticing political target (see Figure 12).

Australia also claims a related Exclusive Economic Zone (EEZ) extending 200 miles out from the mainland claims, as well as any associated Extended Continental Shelf (ECS). The United Kingdom, New Zealand, France and Norway all support the move. These however are all countries that affirm jurisdiction over parts of Antarctica. Japan opposes Australia’s claims and any limits on Japanese fishing in Antarctic waters.

28 Ibid.
Figure 12: Australia’s Antarctica Claims.

Figure 13: Australia’s Homeland and Antarctic EEZ Claims.
Australia’s EEZ, including Antarctic claims, gives a bigger picture as to the country’s offshore resources (see Figure 13). These continental and island claims constitute considerable areas of sovereignty over which little control of sovereignty exists.

*Global Interests*

Migration will be worldwide phenomenon and Australia may be part of peacekeeping exercises anywhere in the world. These responses may be due to events that are climatic in nature (slow- and fast-moving humanitarian disasters), as well as politically motivated events where climate is a contributing factor.

Internal and external migration due to climate change might range from 200 million to 1 billion, according to the International Organization for Migration. There are Australian interests due to global politics, treaties, and polices that place them on the world stage. This is particularly true in places throughout the Middle East (such as Iraq and Syria) and Sub-Saharan Africa (such as Nigeria and Kenya). The former may be driven by political events, while the latter may be the result of humanitarian crises (see Figure 14).

*Figure 14: Global Conflict Hotspots.*

A report by a German think tank listed nine potential global hot spots and each had some link to climate change. Four hot spots were nearby in Asia: East Asia, South Asia, Central Asia, and Middle Asia. Three threatened areas were in Africa, including North, Central, and South Africa. Last, two regions were in the Americas, including central South America and the Caribbean Sea area.

**Conclusion: Australia's Interests in the Climate-People-Conflict Nexus**

The climate and people intersection will incrementally become an increasing fixture in Australia’s security interests. At the same time, the concept of security will be evolving from a collective to an individual one. This shift must also shape Australia’s outlook. There will be a new emerging framework of human security. That refocus will be on the well-being of people and their communities and less focused on the state.

Windows for action on the climate, and on the social conditions that underlie them, are closing. The underlying causes for climate change, human demographic and economic behaviour, continue to increase and delaying is no longer a feasible path. Yet there is little support for investigating the social roots of climate change. There is no parallel level of intellectual or material support as there was for investigation into the physical basis of the problem. This condition may be due to hard science bias, but also perhaps a fear of the political ramifications in the findings.

We have imagined Australia’s security, climate, and demographic challenges in a series of rings. These rings emanate from the continent, to nearby Pacific Islands, countries in South and Southeast Asia, Australian claims in the Antarctic, and events further way but relevant to Australia and its international obligations (see Table 8).

The areas nearest to Australia are the main focus of security interests. The outer zones however will illustrate differing interests at differing times in the future. In the near to medium term, interests will lie in in the immediate areas and Asia where change is unfolding rapidly. To the medium to long term, the gaze of security will also look southward towards Antarctica and eastward to Africa.

The zones of interest to Australia reveal differing recommendations for response. These responses, like the events themselves, will vary according to time. Issues in low-lying Pacific Islands and sea level rise will occur in the next 20-40 years. Issues in Antarctica will occur in the latter half of the century. Recommendations for policy going ahead, and beyond political cycles, will show a magnification of climate and demography for Australia. These trends will act to erase the ‘far way’ concept of Australia in world matters (see Table 9).
Table 8: Australia’s Interests in an Era of Climate and People Change.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Policy Challenge</th>
<th>Policy Impact</th>
<th>Likelihood of Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Australia Mainland</td>
<td>Temperature rise and droughts</td>
<td>Acceptance of Refugees</td>
<td>High</td>
</tr>
<tr>
<td>2. Australia EEZ and Continental Shelf</td>
<td>Claims and resources</td>
<td>Enforcing claims on sea resources</td>
<td>High</td>
</tr>
<tr>
<td>3. Micronesia, Melanesia, and Polynesia</td>
<td>Humanitarian Aid</td>
<td>Acceptance of Refugees</td>
<td>High</td>
</tr>
<tr>
<td>4. South and South East Asia</td>
<td>Sea level rise, temp, increase, and droughts</td>
<td>Peacekeeping, reacting to global hot spots</td>
<td>Medium</td>
</tr>
<tr>
<td>5. Antarctica</td>
<td>Warming</td>
<td>Claims to land and EEZ</td>
<td>High</td>
</tr>
<tr>
<td>6. Global Affairs</td>
<td>Devotion of Resources</td>
<td>Peacekeeping, reacting to global hot spots</td>
<td>Low generally, and Medium, depending on place</td>
</tr>
</tbody>
</table>

Table 9: Recommendations Regarding Australia’s Interests in an era of Climate and People change

<table>
<thead>
<tr>
<th>Zone</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Australia Mainland</td>
<td>Support global for amelioration and adaptation to climate and people change.</td>
</tr>
<tr>
<td>2. EEZ and Continental Shelf</td>
<td>Increase resources that can protect and project from these claimed areas.</td>
</tr>
<tr>
<td>3. Zealandia and Pacific Islands*</td>
<td>Develop robust programs of humanitarian aid and security; cooperation with New Zealand and Pacific Island governments.</td>
</tr>
<tr>
<td>4. South and South East Asia</td>
<td>Support for Southeast Asia governments that are seeing a large influx of migrants and from Chinese claims in the South China Seas.</td>
</tr>
<tr>
<td>5. Antarctica</td>
<td>Addressing the possibility of claiming Wilkes Land as part of Australia, its EZ, and related islands.</td>
</tr>
<tr>
<td>6. Global Affairs</td>
<td>Devotion of resources according to a variety of treaties.</td>
</tr>
</tbody>
</table>
The increasing entanglement of Australian security interests in climate and people will expand well beyond 2100. There will no doubt be a greater pull of international entanglements, and also a push of people waiting to flee from untenable situations to more secure ones. Australia will be a pull area and climate and demography will provide them with a surplus of applicants. It will be important to distinguish between policies that seek to accommodate new migrants with skill needs important to the country and those that are desperate for a new life.

A recent report from the US Department of Defense to the US Congress summarised recent efforts to address climate and security by geographic region. The report found a particular focus on responding to extreme events, with differing degrees of climate involvement, especially with short-term priorities. This perspective assumed cooperation between Australia, New Zealand, the United States, and the United Kingdom. How might this cooperation advance in terms of research? The USPACOM (the US military group responsible for the Pacific Ocean region) suggested a focus in developing visual data tools to better understand the layered threats that climate change and conflict poses.

USPACOM is developing a visual display tool that seeks to overlay historic disaster event data, climate and weather data, population and geographic data, Country Book information, resource scarcity data, and all hazards-related activities in the region into a comprehensive tool that will not only provide planners with historic and needs-based data to inform plans.30

Australia’s remoteness is now a thing of the past. It is in many ways becoming a front-line state when it comes to trends in climate and demography. In response to the twin crises, Australia could loosen its immigration requirements to accommodate such changes. Without looser immigration policies, by 2100 Australia might rise to be a nation of over 100 million, or more. Assimilating that many migrants however will pose many other challengers. A tougher immigration policy will keep that population well under 50 million. There will be people wanting to re-locate there. Whether Australia can and wants to absorb so many people remains a critical question in assessing the consequences of climate change and conflict.

Gone with Winds: A Quantitative Analysis of Battlefield Locations and Climate Shifts in Imperial China

David D. Zhang and Pei Qing

Introduction

The long-term change of battlefield locations between agriculturalists and pastoralists reflects the long-term cyclic patterns of China’s geopolitical shifts. Around this topic, it has attracted great interest from scholars and the public, but to date there has been no satisfactory explanation for the alternating occupancy patterns of the country’s pastoral and agrarian polities. As civilizations have developed, societies have undergone many significant geopolitical shifts. The fall and rise of empires and the shrinkage and expansion of imperial territory in the Old World resulted in the shifting geopolitical power and cyclic patterns of history.  

Many schools of thought in the Western social sciences, especially political science, have theorised the causes of territorial changes and shifts in political power throughout history.  

The territorial changes were basically caused by wars between different geopolitical powers in Chinese history. The shifts of battlefield locations reflect the changes of geopolitical boundary and territory. Therefore, the research on change of battlefield locations in historical China is under great interests in academia. However, the topic has rarely been quantitatively analyzed, and the relationship between natural change and battlefield locations has never been examined. In the past few years, the role

of climate change in leading human crisis (wars, epidemics and famines) in China, Europe and the world in historical time has been quantitatively proven at different temporal scales.5,6,7,8,9

Since the first emperor (221BC), nomadic tribes in the northern marginal areas of China (pastoralists) often launched massive attacks on China’s agricultural heartland, where they established empires for hundreds of years. The Han people in China’s heartland usually overthrew these empires after two to three hundred years and established agriculturalist empires. Lee first conceived of three such multi-centennial change to indicate geopolitical cycles in imperial China as shown in Figure 1.10 All of them were characterised by similar patterns of warfare, national development, and cultural change. Each cycle began with the launch of a major agrarian dynasty accompanied by the northward expansion of territories at the expense of pastoralist polities (a Yang period). Then, the pastoralist empires invaded southward and took over the agriculturalist empires at the expense of agricultural polities (a Yin period). In order to explain the cycles of nomadic invasion, the retreat or the expansion, Lee conjectured that the power of nature was the answer behind the above mechanism.11

Although some scholars have found strong statistical relationships between climate change, war, population, and dynastic cycles in Eurasia and the world by using high-resolution temperature reconstructions and fine-grained historical datasets,12,13 they cannot explain such multi-centennial Yin-Yang cycles with statistical proofs.

11 Ibid., 10.
12 Ibid., 5.
13 Ibid., 8.
Figure 1: Three multi-centennial cycles in the change of battlefield locations in imperial China. Source Lee (1937).
Furthermore, the change of battlefield locations in both north-south and east-west have not been investigated and compared, particularly in a quantitative perspective. Although our recent research have used the size of agricultural empires, the boundary latitudes of the pastoral and agricultural empires and the battle latitude to investigate the geopolitical change in imperial China under climate change and verified that macro-precipitation variations controlled geopolitical cycles of China, we did not include the longitudinal information of battle locations into the research. In addition, as one of direct indicators of geopolitical conflicts, the shifts of longitudinal locations (east-west) of battles need to be linked to and compared with the latitudinal changes under the impact of climate change in a long term and large spatial scale. Without the scrutiny on the role of climate change and sufficient statistical evidences, spatial and temporal patterns of change of battlefield locations cannot be fully explained in this regard, not to mention the geopolitical relationship. Last, precipitation in China is closely affected by the Asian monsoon. However, through the impacts of precipitation change, there are not studies discussing the linkages between Asian monsoon and change of battle locations. Such point will be also discussed in the study as the first attempt especially in a perspective of quantitative analysis.

In China, the temperature and precipitation generally decreases from the south to the north. During the imperial period, pastoralists and agriculturalists were nurtured by two different ecosystems separated by the Great Wall, which was built by the agriculturalists along a natural divide between the ecosystems, serving as the political boundary between the two polities during the Qin (221–207 BC), Han (202 BC–220 AD), Sui (581–619 AD) and Ming (1368–1644 AD) dynasties. The agriculturalists cultivated land with wheat and millet in dry-cold northern China (Wheat/millet China) and rice in wet-warm southern China (Rice China), while the pastoralists reared animals in the semi-arid and arid areas further north (Pastoral China) as shown in Figure 2. In Pastoral and Wheat/millet China, bio-productivity was primarily controlled by precipitation. While in Rice China a multi-cropping


15 Qing Pei, and David D. Zhang, ‘Long-Term Relationship between Climate Change and Nomadic Migration in Historical China’, *Ecology and Society* 19 (2014), 68.


system was sustained by temperature. When the humidity increased, a substantial portion of the pastoral area north of the Great Wall became arable land again. As a long traditional understanding, climate in China expressed itself explicitly in landscapes, modes of human occupancy, and livelihoods, which has had far-reaching and persistent historical consequences since the 1940s as revealed by Chang.

Figure 2: Three eco-agricultural zones in China.

To prove the above long existing hypothesis and fill the existing research gaps, following the research methods in our recent research, we aim to justify whether the variations of climate changed the agro-ecological landscape and people's livelihood in China, and consequently led to the shifts of war locations and then the alteration of the human occupancy modes (by pastoralist or agriculturalist). The quantitative analysis will be adopted mainly to explore the possible cause and effect relationship between climate change and battlefield locations. As it is generally held that the alternating dominance of pastoralist and agriculturalist empires during the imperial period often materialised in the aggression wars, thus the interaction between climate, political movement (war), and change of battlefield locations in Chinese history should be examined. Overall, the findings and conclusions in the study are mainly drawn based on the statistical results. Furthermore, the study will insist on the large spatial and long term scale which is an essential methodological issue in the geographical research.

**Materials and Methods**

In this section, the information on materials and methods used in the study are introduced. We first introduce what kinds of climatic and geopolitical indicators should be included. Then, all of the data series and their associations were tested by correlation, regression, Granger causality and wavelet analyses, covering different levels of quantitative association to obtain explicit and precise results.

In general, in order to scrutinise the relationship between climate change and battlefield locations in imperial China, high-resolution China-wide paleo-climate data is needed, especially for the quantitative exploration. We used a multi-proxy precipitation series for China since 300 BC (PRECIPITATION, Fig. 3A), which was recently reconstructed in our research (Zhang et al. 2015). For ancient temperature change, a China-wide and multi-proxy temperature reconstruction spanning AD 1–1990\(^21\) (TEMPERATURE, Fig. 3G) was adopted for quantitative analysis. The study retrieved the latitudes (BLA, Fig. 3B) and longitudes (BLO, Fig. 3F) of all 2737 battles between the agriculturalists and pastoralists from 200 BC to AD 1911 from an authoritative compendium about Chinese warfare\(^22\) to illustrate the annual variability of the geopolitical boundary. The number of the battles (BN, Fig. 3C) was also included as a reflection of the frequency of the armed conflicts between the

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two polities. The wars were further divided into southward aggression war by the pastoralists (SAW, Fig. 3D) and the northward aggression war by the agriculturalists (NAW, Fig. 3E) to show which polity’s actions were more determined by climate change and more pertinent to the spatial extent of Chinese empires.

Datasets for geopolitical variables and battlefield locations (BLA, BN, SAW, NAW and BLO)

In the two volumes Chinese Military History, holistic records of Chinese wars since 1000BC were collected. Almost all of them have detailed descriptions of duration, engaged parties and battle locations. In fact, there might be more than one battle in a war. Therefore, in the study, all 2737 battles with precise locality and engaged both pastoralists and agriculturalists were adopted for calculating southward aggression wars (SAW), northward aggression wars (NAW), battle numbers (BN). In the meantime, we also could locate battle latitude (BLA) and battle longitude (BLO) based on the information of battle location in the book.

SAW and NAW occurred in administrative regions of Chinese empires. SAW were launched by pastoral minorities to invade south (including southeast and southwest), that is agricultural area. NAW were launched by agricultural empire to aggress the north (including northeast and northwest) nomadic minorities’ territory. Only the wars decided by emperors of agricultural empires are counted into the NAW series.

BN occurred in administrative regions of Chinese empires as well. No matter the battle was launched by pastoral or famers; it will be picked up only if the battle happened between pastoral and famers. For a particular period of history, the Southern and Northern Dynasties, the records adopted in the analysis are those battles between pastoral races and Southern Dynasties; the latter were established by Han People who relied on agricultural production.

If there are several battles (more than one) in one year, the battle latitude (BLA) and battle longitude (BLO) will be calculated as the average value of all battlefield latitudes or longitudes between nomadic people and agriculturalists.

The SAW, NAW, BLA, BLO and BN basically have annual resolution and are the sum of all battle numbers in one year for whole study period. The missing year is linear interpolated.

23 Ibid., 22.
Figure 3: Long-term climate change and the change of battlefield location in imperial China.

A. Reconstructed precipitation index of China, 300 BC – AD 2000; B. Change of BLA, 200 BC – AD 1911; C. Change of BN, 200 BC – AD 1911; D. Change of SAW, 200 BC – AD 1867; E. Change of NAW, 133 BC – AD 1675; F. Change of BLO, 200 BC – AD 1911; and G. TEMPERATURE, AD 1–1990. The bold lines represent the 300-year smoothed data; the grey shading represents Yin periods.
Verification of causal linkages: Granger causality analysis

The Granger Causality Analysis (GCA) is an effective method to build causal relationships.24,25 Granger’s definition of probabilistic causality assumes two basic principles: (1) the cause must precede the effect in time, and (2) the causal series should contain special information, which could better imply and forecast the series being caused.26 These principles are consistent with our study on the criteria of cause and effect, which is proven by an auto-regressive format.27

Before GCA, the Augmented Dickey-Fuller (ADF) test was first used for the stationarity checking of the variables. Moreover, differencing was used on both series to achieve the stationary property.28,29 After the ADF test on the stationarity status of each data series, the lag length should be selected for the GCA. We set the same lag for both variables to keep the same conditions for the test in the model.30 However, how to set the lags for analysis is another question. Hsiao clearly criticised the arbitrary selection of lag in the causality analysis, as the statistical results are often sensitive to lag length.31,32 Therefore Akaike’s information criterion (AIC)33 will be adopted to determine the appropriate lag length.

Verification of causal linkages: Wavelet analysis

Wavelet analysis is a powerful tool that overcomes the problems of non-stationarity in data series by performing a local time-scale decomposition of the signal.\textsuperscript{34} It uncovers the characteristics of data series with joint time and frequency domains,\textsuperscript{35,36} but is rarely used in social science research.

The wavelet transform decomposes signals using dilated and translated functions, which are called ‘mother wavelets’. There are several considerations in making the choice of a wavelet. The Morlet wavelet is very well localised in scales/frequencies with high frequency resolution and relatively low time resolution.\textsuperscript{37} Therefore, for identifying the frequency of changes in the geo-political cycles in China, Morlet wavelet is selected in this study as the mother wavelet, which has been regarded as an efficient means of detecting and analysing curves.\textsuperscript{38} In this study, we selected Morlet wavelet as the mother wavelet, which is well localised in scales and in high-frequency resolution when compared with other mother wavelets, like a Mexican hat.\textsuperscript{39} Morlet wavelet is regarded as an efficient means of detecting and analysing curves.\textsuperscript{40} In the context of ecological study, the Morlet wavelet and Mexican hat came to similar conclusions concerning the features of the wavelets.\textsuperscript{41}

Based on the section of Morlet wavelet as mother wavelet, the wavelet analysis in the study includes both spectrum analysis and coherence analysis. We used the spectrum analysis for identifying the informative features of many types of real-world signals.\textsuperscript{42} Coherence analysis is a direct measure of the association between two time series in the frequency domain.\textsuperscript{43}


\textsuperscript{37} Ibid., 51.


\textsuperscript{39} Ibid., 53.

\textsuperscript{40} Ibid., 56.


Results

Correlation and regression analysis

The reconstructed PRECIPITATION varied at different time-scales over the last 2300 years (Fig. 3A). Although its decadal change was irregular and obscure, three multi-centennial wet-dry cycles were identified. This is very similar to the previous estimation of 600–800-year cycles of Chinese moist changes. Such long cycles can be attributed to the shifting of large-scale atmospheric circulation.

BLA, BN, and SAW corresponded very closely to PRECIPITATION fluctuations, but with different time-lags. All of them exhibited similar frequencies and the three Yin/Yang cycles (Fig. 3). In Table 1 and Table 2, the results of correlation and regression are listed separately. All of cross-correlation coefficients were significant, except that of PRECIPITATION/BLO, SAW/BLO, NAW/BLO and TEMPERATURE/NAW (Table 1). The regression results also indicate that these indicators, BLA, BN, SAW, and NAW are significant dependents of PRECIPITATION (Table 2).

The results indicate that gradual drying triggered more armed conflicts between the two polities, with war (BN) and southward aggression (SAW) peaking in the driest periods (Figs. 3C and D). The nomadic tribes moved southward and finally conquered China’s heartland (Yin period) in the three driest periods. In the first Yin period, the pastoralists (Five Barbarians) moved southward and conquered all of Wheat/millet China, down to the northern banks of the Yangtze River (35°N). This caused the agriculturalist emperor to reside in Rice China. In the second and third Yin periods, the pastoralists (Jin, Mongol and Manchu) moved further south and took over all of Rice China, which was the economic centre and most productive agricultural zone in the last millennium. When the humidity increased, the agriculturalists moved northward and occupied a substantial part of the former pastoral land at higher latitudes. Although the TEMPERATURE frequency was different from those of the geographical and political variables, the associations between BLA, BN, SAW, and TEMPERATURE in correlation and regression analyses were statistically
significant (Table 2), which indicates that TEMPERATURE was also imperative in triggering geopolitical shifts and warfare. NAW was significantly correlated with PRECIPITATION but not with TEMPERATURE (Tables 1 and 2).

| Table 1. Correlation analysis on climate change and change of battlefield locations |
|-------------------------------------|-----|-----|-----|-----|-----|
| **Temperature** | **BLA** | **BN** | **SAW** | **NAW** | **BLO** |
| Precipitation     | 0.297*** | 0.147*** | -0.159*** | -0.156*** | 0.108*** | -0.034 |
| Temperature       | 0.203*** | -0.203*** | -0.096*** | 0.020 | -0.203*** |
| BLA               | -0.232*** | -0.041 | -0.171*** | -0.214*** |
| BN                | 0.290*** | 0.283*** | 0.158*** |
| SAW               | 0.059**  | 0.015 |
| NAW               | 0.011 |

Notes: ***P < 0.01

| Table 2. Regression analysis on climate change and change of battlefield locations |
|-------------------------------------|-----|-----|-----|-----|-----|-----|
| **Temperature** | **BLA** | **BN** | **SAW** | **NAW** | **BLO** |
| Precipitation     | 35.330*** (0.000) | 35.330*** (0.000) | 35.330*** (0.000) | 35.330*** (0.000) | 35.330*** (0.000) |
| Temperature       | 2.189*** (0.000) | 2.189*** (0.000) | 2.189*** (0.000) | 2.189*** (0.000) | 2.189*** (0.000) |
| BLA               | 1.231*** (0.000) | 1.231*** (0.000) | 1.231*** (0.000) | 1.231*** (0.000) | 1.231*** (0.000) |
| BN                | 1.681*** (0.000) | 1.681*** (0.000) | 1.681*** (0.000) | 1.681*** (0.000) | 1.681*** (0.000) |
| SAW               | 1.015 (0.422) | 1.015 (0.422) | 1.015 (0.422) | 1.015 (0.422) | 1.015 (0.422) |
| NAW               | -0.404*** (0.000) | -0.404*** (0.000) | -0.404*** (0.000) | -0.404*** (0.000) | -0.404*** (0.000) |

Notes: ***P < 0.01; **P < 0.05; * P < 0.1

**Granger causality analysis**

Despite the statistically significant association between the climate and geopolitical variables, their causal linkages had to be further explored. Granger causality analysis (GCA)47 was used to verify their causal links as shown in Table 3. All variables were checked by ADF test before GCA to decide the differencing level, confirming their stationarity. The null hypotheses with precipitation of PRECIPITATION-BLA, PRECIPITATION-BN, PRECIPITATION-BLO, PRECIPITATION-SAW, and PRECIPITATION-NAW were rejected at the 90% significance level. However, all other null hypotheses involving TEMPERATURE cannot be rejected, which

reveals that (1) although some associations between climate, political variables and battlefield locations were strong, their Granger causal relations cannot be established; (2) temperature did not Granger-cause geopolitical and precipitation changes; and (3) although precipitation could exert the significant impacts on frontiers of battlefield, its impact of rainfall is more significant in the angle of latitude than longitude, probably the rainfall difference in the west/east direction is much less than that in north/south direction.

**Table 3** GCA of the relationships between the climate change and change of battlefield locations

<table>
<thead>
<tr>
<th>Causal linkage (null hypothesis)</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRECIPITATION does not Granger-cause BLA</td>
<td>1.627</td>
<td>0.033**</td>
</tr>
<tr>
<td>PRECIPITATION does not Granger-cause BN</td>
<td>2.211</td>
<td>0.001***</td>
</tr>
<tr>
<td>PRECIPITATION does not Granger-cause SAW</td>
<td>2.457</td>
<td>0.017**</td>
</tr>
<tr>
<td>PRECIPITATION does not Granger-cause NAW</td>
<td>2.629</td>
<td>0.007***</td>
</tr>
<tr>
<td>PRECIPITATION does not Granger-cause BLO</td>
<td>2.419</td>
<td>0.018**</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause PRECIPITATION</td>
<td>0.880</td>
<td>0.631</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause BLA</td>
<td>0.917</td>
<td>0.544</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause BN</td>
<td>0.964</td>
<td>0.485</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause SAW</td>
<td>0.577</td>
<td>0.775</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause NAW</td>
<td>0.332</td>
<td>0.954</td>
</tr>
<tr>
<td>TEMPERATURE does not Granger-cause BLO</td>
<td>1.159</td>
<td>0.324</td>
</tr>
</tbody>
</table>

*Notes: a = no differencing; b = 1st level differencing.* *P < 0.01; **P < 0.05; *P < 0.1

**Frequency bands and coherence of the climate and geopolitical variables/battlefield locations**

To explore how the various components of the variables (including frequency, significance, consistency, and synchrony) interacted at different temporal scales, they were decomposed into time and frequency domains using wavelet analysis—an important technique used to determine causal relation.48 This method has rarely been used in the field of social sciences. Continuous wavelet power spectra ranging from 20 to 1000 years were computed for all of the variables. The results show that there was a consistent and significant oscillating component for PRECIPITATION, BLA, BN, SAW, and BLO in ~700-year bands throughout the whole period (Fig. 5). The next most significant periodic band was ~400 years, which only appeared in AD 900–1800 for PRECIPITATION, 200 BC–AD 2000 for BLA, 200 BC–AD 700, AD 1400–2000 for BN, BC200-AD2000 for BLO and AD400–1800 for SAW.

48 Ibid., 53.
There was also a significant 200-year band in AD 500–2000 for BLA, AD 800–1400 for SAW, and AD 800–1600 for BLO, and some high frequency noises (100- and 300-year bands) for BN and SAW in various periods. The dominant 300-year band for NAW and 1,000 and 200-year bands for TEMPERATURE (Fig. 5) differentiated themselves from the other variables. PRECIPITATION, and BLA were very clean in their high frequency bands (variations < 200 years) (Fig. 5). BLA has very high data resolution (annual scale) and is, therefore, a precise variable for measuring political boundary change. The lack of significant spectra in high frequency bands (< 200 years) for BLA in this study has two implications. First, the change of battlefield locations in imperial China was a long-term (low frequency) rhythmic process. Second, no short-term variable disturbed that process. Both BN and SAW had 200-year bands and some noises in higher frequencies, indicating that TEMPERATURE (with a 200-year band) and other processes were involved.

Among all of the variables, PRECIPITATION, BLA, BN, SAW and BLO had the same periodic bands, indicating very strong links between and interactions among them. Therefore, the coherency analysis is only conducted between precipitation and those geopolitical indicators and battlefield locations (BLA, BN, SAW and BLO) as shown in Figure 6. This study used wavelet coherence analysis to further examine the causal relation and the degree of coherence in the time and frequency domains of these variables (Fig. 6). The decomposed rhythmic associations between PRECIPITATION and all of the geopolitical variables and battlefield locations were extremely strong in ~700-year bands over the entire period (Fig. 6). Their coherence in ~400-year bands was also strong in the time domain, confined to AD 600–1500 for PRECIPITATION/BN, and AD 800–1400 for PRECIPITATION/SAW.

This result indicates that armed battles and changes in political territory were extremely sensitive to precipitation change. The phase synchrony of BLA, SAW and BN in 680–780-year bands exactly followed the change of PRECIPITATION (Fig. 6). The phases of BN, and BLA lagged behind that of PRECIPITATION for ~10–90 years. Given that cause precedes effect, the time-lags indicate that PRECIPITATION and SAW were the causes of the geopolitical variables. The phase synchronicity of PRECIPITATION/SAW and PRECIPITATION/BLO is not stable as shown in Figure 6, demonstrating that SAW and BLO were slightly affected by other factors and it could not totally control the geopolitical changes.
Figure 5: The continuous wavelet power spectrum (left panels) and average wavelet power spectrum (right panels, solid lines) of:

(A) PRECIPITATION, 300 BC – AD 2000; (B) BLA, 200 BC – AD 1911; (C) BN, 200 BC – AD 1911; (D) SAW, 200 BC – AD 1867; (E) NAW, 133 BC – AD 1675; (F) BLO, 200 BC – AD 1911; and (G) TEMPERATURE, AD 1–1990 in China. The color code for coherence values varies from dark blue (low values) to dark red (high values). The dashed lines in the right panels represent the computed significance level ($\alpha = 5\%$) based on 1,000 'Beta-Surrogate' series.
Figure 6: Wavelet coherence between:

A1, PRECIPITATION–BLA; B1, PRECIPITATION–BN; C1, PRECIPITATION–SAW; and D1, PRECIPITATION–BLO is computed in 20–1,000-year bands. The color code for the coherence values varies from dark blue (low values) to dark red (high values). The solid contour line represents the 90% significance level based on 1,000 Beta-Surrogate series. The phases for A2, PRECIPITATION–BLA; B2, PRECIPITATION–BN; C2, PRECIPITATION–SAW; and D2, PRECIPITATION–BLO are computed in 680–780-year bands. The dotted lines represent phase difference; the red line represents the phase of wetness; and the blue lines represent the phase of the corresponding variables. The distribution of the phase differences are shown (A3, B3, C3, and D3).
Discussion

Based on the comparative analysis on impacts of precipitation and temperature, we know that precipitation is more significantly associated with geopolitical conflicts and battlefield locations. To further summarise the roles of precipitation in affecting change of battlefield locations in imperial China, the results of all quantitative tests on precipitation and geopolitical cycles were synthesised, after which the degree of strength of the suggested causal links between the variables was determined (Table 4).

Climate and battles fields

The very high coherence in frequency and time domains, statistically proven causal relationship, and significant association of the multi-centennial variability between precipitation change and the change of battlefield locations of the two polities, (BLA and BN) (Table 4) reveal that precipitation change heavily controlled the macro-geopolitical shifts across a broad range of temporal scales in imperial China. The moving direction of the two polities favored the polity that was better adapted to the changing ecological condition at the time. The fixed boundary, the Great Wall, never succeeded in blocking the north/south movements of the two polities triggered by the climate-induced spatial shifting (especially south/north shift) of the ecological threshold. The south/north shifts of battlefield largely and closely followed the substantial variability of precipitation and partly temperature change. This indicates that the frontier between the two polities was primarily determined by precipitation variation instead of the artificial political boundary (i.e., Great Wall). In the contrast, BLO has a less closer link with precipitation than BLA, indicating that precipitation variations mainly controlled the south/north (latitude) shifts in geopolitical boundaries. For the east/west (longitude) change, it may be affected by precipitation, temperature and other socio-economic indicators. At last, TEMPERATURE was significantly correlated with BLA, BN, SAW, and BLO in the correlation and regression analyses, indicating that temperature change could also
have induced the geopolitical shifts of and struggles between the two polities, with less effect than the precipitation change.

_Gone with winds: The fundamental driving force from Asian monsoon_

In China, precipitation is significantly controlled by the Asian monsoon (AM). Thus, PRECIPITATION reconstruction was tested with the AM strength, which was represented by the averaged δ^{18}O value of all three Chinese cave speleothem records. PRECIPITATION was significantly correlated with the AM strength (r = 0.299, p < 0.001), indicating that the used precipitation reconstruction agreed with other independent reconstruction. To further verify the precipitation/AM relationship, GCA causality analysis (using AIC lag) justifies that AM could Granger-cause the change of precipitation.

For the AM, we do not conduct the wavelet analysis further in this study because in these cited references, some of them have also conducted the analysis in the frequency domain. The results show an obvious difference from the frequency pattern of precipitation in the study, which indicates that AM is one of the determinants of precipitation change but not the unique factor. Despite this, AM closely affects the precipitation change from a long term and large spatial scale.

To sum all the discussion in this section, we can find that precipitation change has a more direct influence on the change of battle locations. Based on the correlation analysis, regression analysis, Granger causality analysis and wavelet analysis, the close linkage between precipitation and battle location has been verified. Furthermore, with the examination on the association between AM and precipitation, AM could be a fundamental driver of battle locations change, though the linkage should be interpreted in an indirect manner. Hence, the southward or northward movement and frequency of wars of different polities basically follows the change of prevailing wind strength of AM, but we must recognise its limited effect of AM.


51 Jinguo Dong, ‘Summer Monsoon Precipitation Variations and Abrupt Climate Events During the 3000 Years: Records from Stalagmites in China’, *Journal of Arid Land Resources and Environment* 26 (2012), 36-41.

52 Jason Cosford, Hairuo Qing, Dave Mattey, Bruce Eglington, and Meiliang Zhang, ‘Climatic and Local Effects on Stalagmite δ^{13}C Values at Lianhua Cave, China’, *Palaeogeography, Palaeoclimatology, Palaeoecology* 280 (2009), 235-44.

53 Ibid., 70.
Concluding remarks

The findings of this study do not refute other theories about change of battlefield locations and the complexity of political change in Chinese history. This study is different from its predecessors in terms of both temporal scale and hierarchies of reasoning (levels of quantitative association). The long-term geopolitical process, with the indicator of change of battlefield locations, is embedded in a complex system that includes both environmental and social components. Any complex system is determined by different factors at different spatial-temporal scales. At a given spatial-temporal scale, some processes are more fundamental than the rest in the system. Other geopolitical theories generated from case and short-term studies have been limited by their spatial-temporal scales. The explanation and generalisation to multi-centennial geopolitical change in this study may, of course, not be appropriate in other studies with different temporal scales.

In addition, the study does not necessarily lead to the notion of ‘Environmental Determinism’. However, the environmental and geographic differences are the basis of environmental studies and geography. We should not use the environmental and geographic differences to create ‘cultural discrimination’. We explored the long historical consequences of climate change by examining the high-resolution frequency and time domains of different time series. The characteristics of this large unit are not simple combinations of the attributes of small units but demonstrate the collective behaviours of the polities and illustrate a new theory of geopolitical change. Hence, this study is an innovative way of identifying dominant causes in social and historical processes across a broad range of temporal scales (20–1,000 years in this case). Research concerning scale in the social sciences has been criticised as being insufficiently explicit and precise due to its complexity. Nevertheless, our accurate and comprehensive explanation of a complex system reveals that social science research is capable of attaining the standards applicable to physical scientific research by using novel quantitative methods and scientific thought.

I am going to try to bridge two key elements of this conference: a historical case study, and how it links to lessons for the Australian Army. This is not an easy task; lessons from any case study are difficult, linked as they are to their context and time. However, there are some key similarities between the Indian Army in August 1947 and the Iraqi Army in 2015: the lack of a realistic political endstate; a proper strategy for withdrawal of the interventionist state; and the divisive communalism of the political leadership inside the country.

One key issue for both is the raising, training, and mentoring of forces—and most important, taking risks and fighting alongside a host nation security force. Most militaries since 2011 have not critically analysed this key aspect of the last 14 years of conflict. I will hone in on two relevant major objectives from the experience of the Indian Army, Punjab Boundary Force, in the Punjab of 1947. First is leadership and the ‘brotherhood of the battlefield’; second is the importance of battlefield victory and its impact on cohesion and identity of a host nation military.¹

¹ When I presented this paper at the Chief of Army’s Conference 2015, I discussed my experiences of the creation of the Iraqi Army in the 2003–2011 period as a counter-argument to the Indian Army experience of 1947. I worked alongside advisers from the UK, USA, USMC, and Australian Defence Force with Iraqi commanders, NCOs, and soldiers from the 1st, 8th, 10th, and 14th Iraqi Army divisions, and I considered the experiences of several units in my presentation. However, given the sensitivity of much of the information, I am not able to present material relevant to the Iraqi experience in written form at the time of submitting this chapter (December 2015). One comment that I can share comes from a British division-level after action report, which pulls no punches in its assessment of the Iraq mission: “Mission success for Britain depends on a capable, confident IA and the last six months [speaking of 2006] has witnessed the highs and lows. The mutiny of 2/4/10 and the failure of 4 (IA) Bde to control the looting of Camp Abu Naji in August were obvious lows and demonstrated that the ‘hands off’ approach to training the IA adopted by the British Army was inadequate. Arguably, no other army in the world has greater depth of experience in training indigenous armies than the British and yet we have not been true to ourselves. We have not lived, trained and fought alongside them, [author’s emphasis] preferring a centralized MiTT and a far more hands off approach, in contrast to our US allies. Effectively the stabilizers were removed from the bike too early. The result has been a lackluster, inadequately trained and supported Division [10 IA] that failed the test when it came. ((MND (SE)/J3/3082 Post Operational Report, Part One; Overview 19 Jan 07)).
Let’s consider the experience of the Indian Army in the final days of the British Raj. The following two quotes highlight some core issues.

[W]hen we set forth upon our present duties I told you it was going to be a difficult task … [O]fficers and men have worked loyally and without sparing themselves. I know the strain and fatigue that you have been subjected to and I know the strains and tugs of loyalties involved. We have been accused of partiality by both parties and that in itself is good evidence of the practical measures of overall impartiality which you have achieved in circumstances of unparalleled difficulty … [I]t will be agreed that you in the PBF have ultimately upheld the honour of the old Indian Army, by your devotion to duty.²

Major General Pete Rees, GOC of PBF

It is interesting to note particularly amongst the ‘fighting’ units when there are shared memories of past battles against a common enemy and proud knowledge of regimental achievement and tradition, that the strong ties of loyalty which bind the Indian soldier to his unit and his officer are not easily broken.³

GOC Bihar and Orissa (Eastern Command)

The fact that the Indian Army, as an institution, did not collapse is a real and lasting testament to the professionalism of the force. The Indian Army went through a period of instability that could have destroyed any military organisation.⁴ Its experience in the events surrounding Independence and Partition is unique in the annals of military history and decolonisation. No other force has had to deal with such extreme and varied pressures. The Indian Army was essentially asked to prevent, or to attempt to contain, a civil war erupting among the various ethnic and religious groups from which its own soldiers, officers, and VCOs were drawn. The fact that there were isolated incidents where bias was demonstrated by army personnel is surprising only because it was not more widespread. Any military force confronted with the carnage of the Punjab⁵ would been hard pressed indeed trying not only to stop the killings, but also to prevent its own units from becoming emotionally, if not physically, involved in the situation.

² Oriental and India Office Collection (OIOC), British Library, General Peter Rees Papers, file 59 Special orders of the day, 31 August 1947.
³ Imperial War Museum, Lt General Tuker Papers, Box 71/21/4/6 Original documents and letters covering the partition of India.
⁴ See Daniel Marston, Indian Army and the End of the Raj (Cambridge: Cambridge University Press, 2014), for a much more in-depth discussion and analysis of the issues the Army faced in the post-war period.
⁵ Estimated deaths are close to a million on both sides of the border.
No one could have predicted the level of violence that erupted and the fact that the police and the civil administration, already under incredible communal pressure ceased, for all intents and purposes, to operate with any cohesion across much of northern India. This breakdown of law and order left the Indian Army to handle situations as best it could, operating under strength and in a situation of unprecedented social disruption. Lt General Sir Francis Tuker commented that ‘Many people were encouraged to kill that summer [1947] by the almost total collapse, in the Punjab, of the legal sanctions which normally operate in civil society to inhibit such behaviour.’

One key issue is that the Indian Army had emerged from the Second World War triumphant in victory, but still something of an enigma beyond its own ranks, and poorly understood by both its incumbent political masters in London, and its future political masters in South Asia. The Indian Army’s evolution and performance in the Second World War are factors that have not been fully evaluated in considering its role in the postwar landscape. The initial, crushing defeats that the Indian Army suffered in 1942 made clear the fact that extensive reforms, both tactical and social, were badly needed. As social reforms, particularly increased commissioning of Indian officers and expansion of recruitment populations, as well as tactical training for fighting in the hills and valleys of Assam and Burma, took hold from 1943 and defeats were turned into victories, morale and discipline improved, and the rate of desertions dropped. Improvements in officer relations, spurred on by war time Indianisation of the officer corps and performance of Indian commissioned officers, also helped to dispel the last vestiges of belief that Indian officers were second-class citizens. The fact that the Indian Army not only recovered from crushing defeats early in the war, but also emerged successful and victorious, was a significant contributor to its morale, its esprit de corps, and its continued professional performance. The army’s image of itself as professional and successful, as cohesive and perhaps most essentially, non-communal, was critical to the performance of thousands of individual men during the difficult days of 1946 and 1947.

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6 Quoted in Copland, ‘Massacres’, 697.

7 It was reported that by March 1943 there had been 3,000 desertions in the Punjab. Ian Talbot, The Partition of India (Cambridge: Cambridge University Press, 2009), 100. The reasons for these desertions cannot be blamed entirely on political issues; one alternative explanation that has been offered is the signing bonus given to men by the Indian Army upon joining up, which could have led to multiple registrations under different names. Another focuses upon the potential communal issues in the Punjab, as described above. Whatever the reasons, desertions dropped significantly after 1943.

As had been widely anticipated by many within the Indian Army, the force was stressed to unbelievable levels by growing communal violence, no longer just in Eastern Command, but throughout most of northern India, including the strategic province of the Punjab. As violence accelerated, the primary enablers of internal security (IS) duties, the Indian Civil Service (ICS) and Indian Police (IP), effectively ceased to function in many places, notably the Punjab. The army, meanwhile, in addition to carrying the heaviest IS load, continued to demobilise, nationalise the officer corps and, most difficult, begin the process of dividing itself along class and communal lines, in accordance with political decisions driven by the need to establish independent armies for both Pakistan and India.

The situation in the Punjab and northern India was particularly fraught because of the large number of retired and demobilised soldiers from the Sikh, Muslim, and Hindu communities who lived in the various districts. Many of these, at a loose end and in need of work, were ready and willing to put their military skills at the disposal of local political and religious leaders, by joining militias to carry out ‘cleansing operations’.

**The Punjab Boundary Force**

On 17 July 1947, the Partition Council met and discussed the proposal from Commander in Chief (CinC), India, as well as the Supreme Commander, Field Marshal Claude Auchinleck, who presented it personally. After a series of questions and debates, the Council decided to approve the proposal using the following framework:

9 For an in-depth discussion of the manpower shortages in the ICS, see David Potter, ‘Manpower Shortage and the End of Colonialism the Case of the Indian Civil Service’, *Modern Asian Studies* 7:1, (1973), 47-73. Dr Potter shows that before the end of the Raj, the ICS was in poor shape. It had been contracting since the 1930s; it was thin on the ground as of 1945, with close to 400 British officers, many of whom were close to retirement. The other 500 officers were Indian, whose loyalty was widely questioned, both in London and by the Government of India: Potter, ‘Manpower Shortage’, 68-9.

10 The police would be accused in most districts of ceasing to function and then taking part in the violence; see below for more discussion. See Ian Talbot’s ‘The 1947 Violence in the Punjab’, in Talbot (ed.), *The Deadly Embrace: Religion, Politics and Violence in India and Pakistan, 1947-2002* (Oxford: Oxford University Press, 2004), for more background to the political background, esp. 6-7.


12 See Lt General Tuker Papers, Box 71/21/4/6 IWM, for many letters from soldiers, NCOs, VCOs, and officers detailing the violence in Punjab throughout the month of August.

13 Mr Jinnah and Mr Khan, as well as senior representatives of the future Dominion of India, were present at the meeting.
1. Action to deal with violence in the disturbed areas should be on the lines indicated by the CinC.

2. Major General Pete Rees, commander of 4th Indian Division, should be appointed as Joint Commander on the behalf of both Dominions.

Major General Rees was given a remit to control troops operating in specific areas of the Punjab, operating in a chain of command through the Joint Defence Council and Supreme Commander. Senior Muslim and Sikh officers would serve as advisers on General Rees’ staff, and troops would be in defined zones no later than 8 August. No changes in the law governing the use of troops in aid to the civil power would be allowed post-15 August. With this decision, the Punjab Boundary Force (PBF) was born.

Lord Louis Mountbatten (Viceroy), Auchinleck, Lieutenant Frank Messervy (commander Northern Command) and Rees attended another meeting on 20 July to discuss planning specifics for the PBF. It was decided that selected districts (Sialkot, Gujranwala, Sheikhupura, Lyallpur, Montgomery, Lahore, Amritsar, Gurdaspur, Hoshiarpur, Jullundur, and Ferozepore) would have special military measures enacted in response to present and anticipated levels of communal violence. The population of these districts amounted to 14.5 million and the communal breakdown was 55% Muslim, 25% Hindu and 20% Sikh. All of these communities ultimately became involved in communal violence.

14 According to the Lord Mountbatten’s Private Secretary, Alan Campbell-Johnson, Mountbatten described Pete Rees as one of the ablest divisional commanders in the Burma Campaign. According to Mr Campbell-Johnson, Pandit Nehru was also very impressed with Pete Rees. See Alan Campbell-Johnson, Mission with Mountbatten (London: Robert Hale Limited, 1951), 175.


16 For a complete breakdown of all the units and sub-units within the PBF, see ‘Strength and Composition of Boundary Force’, Constituent Assembly of India Debates (Legislature) 1:201-4, reproduced in Kirpal Singh (ed.), Select Documents on the Partition of Punjab 1947 (New Delhi: National Book Shop, 1991), 560-4.

17 This list of districts was later confirmed by Sir Evan Jenkins and ratified in a meeting of the Partition Council on 22 July. See TOP, XII:205, for more details. Ludhiana was added on 24 July, see TOP, XII:224.

18 OIOC, Rees Papers, file 48, BL.

19 Swarna Aiyar, in D.A. Low and Howard Brasted (eds), Freedom, Trauma, Continuities: Northern India and Independence (Delhi: Altamira Press, 1998), 17.
The PBF initially drew its units and formations from the 4th Indian Division which had arrived in the Punjab at the end of May and early June, with violence in the area already escalating. Divisional staff immediately identified the need for a joint civil-military HQ, but the anticipated departure of British ICS and police proved an obstacle to establishing one. They did manage to organise weekly conferences to discuss the growing problems in the Punjab, at least until all British civilian staff were withdrawn from the area around 4 August. British staff had failed to hand over their intelligence contacts within the community to their Indian successors, which resulted in a communications and intelligence breakdown.\footnote{See: Lt General Sir Francis Tuker, \textit{While Memory Serves} (London: Cassell, 1950), 441-2; also R.C.B. Bristow, \textit{Memories of the British Raj: A Soldier in India} (London: Johnson, 1974), 161.}

It was already clear to the senior command that there had been efforts over the previous weeks to subvert the loyalty of the troops within the 4th Indian Division, as well as with all units and formations serving in the Punjab.\footnote{The following brigades and units were ultimately part of the PBF: 114 Brigade (4/10 Baluch, 2/17 Dogras, 5/13 FFRifles) 14 (PARA) Brigade (3/7 Rajput, 1/2nd Punjab, 3/10 Baluch), 43 (Lorried) Brigade (2/7 Rajput, 1/10 Baluch, 2/8 Gurkha Rifles, 3/3rd Queen Mary’s Won Gurkha Rifles, 18th Cavalry, 4/12 FFR), 5 Brigade (1/4th Indian Grenadiers, 5th Rajputana Rifles, 1/9th Gurkha Rifles), 11 Brigade (4 Kumoan, 3/12 FFR, 1 Sikh Light Infantry, 3 Mahar). Other extra battalions would serve on different detachments as well as the various regimental centers that fell within the 12 districts. OIOC, Rees Papers, file 53, BL.} Lord Mountbatten felt that the presence of British officers with all units and sub-units of the PBF would help to safeguard against attempts at subversion, and restrain the troops from fighting one another as a separate entity.\footnote{Meeting of the Provisional Joint Defence Committee, 29 July 1947, TOP, XII:276.} The last intelligence report for the Indian Army, submitted on 2 August, seems to validate this theory: ‘the integrity and impartiality of the Indian troops has remained unchanged. The way in which the civilian population has welcomed the Army wherever it has gone has come as a pleasant surprise to the troops.’\footnote{OIOC, L/MIL/17/5/4276, Intelligence Reports, 2 August 1947, BL.} Reports from several other units designated to serve with the PBF reported similar sentiments as August 1947 dawned.\footnote{National Archives (UK), WO 268/488 1st Sikh Light Infantry, 2nd Quarterly Report, 31 July 1947. This report also includes an account of two sepoy deserting with their weapons. See also WO 268/180 4/12th Frontier Force Regiment.}

Orders for the PBF directed Major General Pete Rees, along with two senior Indian military advisers, one a Sikh and the other a Muslim,\footnote{Brigadier Dhigambir Singh and Brigadier Mohammad Ayub Khan.} as follows:

\begin{enumerate}
\item [a.] [That troops would] deal with the disturbances on or after 15th of August in accordance with the guide lines as indicated by the CinC.
\item [b.] [That m]ilitary control would be exercised by Major General Rees.
\end{enumerate}
c. That the zones of operations [would] be defined and approved by the Partition Council.

d. That troops would be in position by 8 August.

e. That there should be no change in the law governing the use of troops in the aid of the civil power after 15 August, for such a period as these forces are employed.

f. That the troops would be drawn, as far as possible, equally from both Dominions and [would] be units of mixed composition. It was realised that the reconstruction may be delayed.

g. That the troops employed on these duties [would] be directly under the Supreme Commander, who [would] be directed by the Joint Defence Council.

h. [That] if any air support was required the AOC-in-C [would] decide in consultation with General Rees.26

On 1 August, General Rees gathered his senior commanders and other officers. He said, in part:

We are going to [be] the last representatives of the old Indian Army. The honour and integrity of the Indian Army of which we are so proud is at stake and in our hands and you and I, officers, VCOS, and men have got to ensure that we uphold and maintain our tradition … We are a neutral force, operating in a defined area, holding the scales of justice impartially under the direct orders of the Supreme Commander, Field Marshal Auchinleck. We will continue to operate after the 15th of August for as long as shall prove necessary to maintain law and order and there is no question of units being ordered off to Pakistan or India … There is an] absolute necessity for law and order, and in carrying out of our duties, if we came in conflict with people who defy law and order and use violence, we will use force … I promise officers and men that provided they act in all honesty of purpose I will back them up completely.27

27 OIOC, Rees Papers, file 59 ‘Special Order of the day, 1st August 1947’. The acting commander of the 43 Brigade, Lt Colonel Fergus Macartney, 2/8th Gurkha Rifles, also noted an important aspect of the meeting and the potential pitfalls of the coming month. He called for the restriction of Sikhs to be allowed only to carry ceremonial kirpans (swords) and not the longer three-foot-long weapons. He was abruptly shouted down by Brigadier Dhirgambir Singh in the meeting and asked to withdraw his ideas. Fergus Macartney, Private Manuscript, Punjab Boundary Force, later reproduced in Red Flash, 21 (1997), 6.
Major Riches, General Rees’s ADC, commented that the general feeling at PBF HQ at the time was that, while they would do all they could, they expected no support from the British and Indian media, who were of the opinion that ‘the PBF [couldn’t] win’.\textsuperscript{28} Auchinleck, however, had faith in Rees and the PBF; if he had any doubts about what the PBF would be able to accomplish, he kept them to himself. He wrote to Rees: ‘I have just read your PBF operational instructions and this is to tell you I think it is excellent and I am sure that it will be of the greatest value to your troops … I have the complete confidence in you and your troops, and I am sure you will do the job as the [a]rmy has always done the job in the past!’\textsuperscript{29}

General Rees called in his commanders on 4 August for a conference. He advised his senior commanders to allow the junior commanders more flexibility to respond to situations as quickly as possible, without waiting for permission. He emphasised that officers must become familiar with the area, but not get too close to the people. Officers must get to know the leaders in the area, but keep the men away from such meetings. He ended the meeting with these words: ‘the honour and reputation of the Indian Army of which we are so proud is at stake.’\textsuperscript{30}

On the same day that this conference took place, the first major escalation in the level of violence occurred when a well-organised Sikh Jatha surrounded two Muslim villages, burned them to the ground, and killed all the inhabitants. An officer who witnessed the violence described how: ‘women and children had their limbs hacked off and their breasts amputated before being killed. Pregnant mothers were sliced open. Babies were left impaled on upright spears dug into the ground. Burnt corpses littered the narrow streets. … [S]uch scenes were our daily sights combined with even worse horrors as we were directed by brigade to follow up incidents.’\textsuperscript{31}

The note from General Hawthorne also touched, once again, upon the ongoing problem of civil-army co-operation. It reiterated that ‘sources of information [are] drying up’, and discussed an incident in Amritsar when a Hindu Superintendent of Police disarmed the Muslim police.\textsuperscript{32} Brigadier Stewart, commander of one of the

\begin{footnotesize}
\begin{enumerate}
\item Interview with Major Riches, 3 May 2005. Hamid reinforces this sentiment in his journal entry for 20 July: ‘I feel that the positioning of the Boundary Force has come too late to exercise any effective control. General Rees is a very capable Commander but this task is beyond him. Political factors will come into play and he will be pressurized from all directions, and even maligned’: Disastrous Twilight, 207.
\item OIOC, Rees Papers, file 73, Auchinleck to Rees, 14 August 1947.
\item OIOC, Rees Papers, file 53, ‘PBF Lahore Conference’, 4 August 1947.
\item Major P.H. James, ‘Transfer of Sovereignty’, Royal Engineers Journal (August 1997),118.
\item See OIOC, Rees Papers, file 68, Rees Personal Logs, 10 August 1947. See also L/WS/1/1010, Political Situation, Sir Evan Jenkins to Mountbatten, 12 August 1947, where he reported ‘Police in Amritsar and Lahore are now unreliable.’
\end{enumerate}
\end{footnotesize}
brigades, reported that ‘attacks on villages are almost continuous … [They] occur all over the district, which makes it difficult for anyone to anticipate their intentions in view of the size of the district … [T]roops are very thin on the ground and in many cases no communications exist … [A]ll battalions are going flat out with patrols, ambushes and sweeps, no effort is being spared to get at these gangs.’\textsuperscript{33} 

Other reports from this period described gun battles between police and army troops on 12 and 13 August.\textsuperscript{34} The District Commissioner for Amritsar and Lahore commented that ‘the public started to distrust the police and later the troops’.\textsuperscript{35} The 5th Brigade reported a major clash between an armed group of 100 villagers and a patrol. It claimed that the patrol received ‘fire from a dozen police [Muslim] in company with a mob … [T]he police were attempting to obtain weapons with which we were armed and [the] ambush was expressly aimed as an attack on the army.’\textsuperscript{36}

It was also during the run-up to independence that attacks on trains between the two future states began to increase, with specific railway stations targeted as well. Attacks against both trains and stations increased throughout the month and only began to abate in late September\textsuperscript{37} As one British officer observed in the aftermath of an attack on refugee train: ‘I do not think I have ever witnessed such cold-bloodedness by any human beings as I witnessed last night … In every carriage without exception the dead and dying were mixed up with the wounded—it was certainly a train of death.’\textsuperscript{38}

The situation reached crisis point on the eve of Independence. Governor Sir Evan Jenkins, Governor of the Punjab, in one of his last letters, wrote to Rees on 14 August: ‘before I leave I must thank you and the 4th Indian Division and PBF for all the help you have given us during this difficult time. Troops can seldom have had a more arduous and unpleasant task as the aid to the civil power … [H]ow deeply we are in your debt, and what confidence we have had in your troops and in yourself.’\textsuperscript{39}

\begin{itemize}
\item \textsuperscript{33} OIOC, Rees Papers, file 51, Misc. drafts and reports, 10 August 1947.
\item \textsuperscript{34} OIOC, L/WS/1/1010, Political Situation, Punjab Government to Government of India, 13 August 1947.
\item \textsuperscript{35} OIOC, Mss Eur F409, George Brander, ICS.
\item \textsuperscript{36} OIOC, Rees Papers, file 54, Communal Subjects, 12 August 1947. See also Hamid’s entry for 13 August, 224-7.
\item \textsuperscript{37} See Aiyar, 18-24, especially the vivid account of a train leaving Pakistan for India, on 20-1, as well as ‘Report on the PBF’, OIOC, L/MIL/17/5/4319, for more details.
\item \textsuperscript{38} Tucker, Memory, 481, 484. The officer specifically compared the attacks to the Nazis in the Second World War and actually stated they were worse than the Nazis.
\item \textsuperscript{39} OIOC, Rees Papers, file 51, Misc. drafts and reports, 14 August 1947. Sir Evan Jenkins appeared to contradict himself later in October 1947, for reasons that are unclear. See below for more information.
\end{itemize}
It was also on this day that Maj. Gen. Rees reported a drop in efficiency with some of his units and formations, due to the loss of British officers and shortage overall of veteran commanders.\footnote{OIOC, Rees Papers, file 51, Lahore Conference meeting, 14 August 1947.} As the new independent states of India and Pakistan were created on the 15th, Auchinleck submitted a report on the conditions in the Punjab for the Joint Defence Council. He described many of the problems presented here and added further comments regarding the PBF:

> two more brigades … are being sent to reinforce the PBF but no amount of troops can stop the indiscriminate butchery that appears to be going on on both sides … General Rees and his brigade commanders are doing all they can and so the troops have been completely impartial and extremely well disciplined, in spite of baseless and mischievous stories to the contrary which are being printed, in some cases by people in responsible positions. Such stories do possible harm and may result in the troops ceasing to be impartial, in which event, the situation, bad as it is now, would become truly horrible.\footnote{OIOC, R/3/1/171, Note by Auchinleck, 15 August 1947.}

Lord Mountbatten summarised his thoughts on the situation in the Punjab on 16 August in a long internal report. He discussed the issues with police becoming sectarian and refusing to protect peoples who were not of their religion. He claimed that if it were not for the PBF, the violence in Amritsar would have been a holocaust in the making. He specifically called for various senior political leaders of both Dominions to meet with General Rees and create a working plan to deal with the rising violence. He asserted, ‘It is quite clear and we all agreed, that the soldiers are doing everything that is humanly possible to try and hold the situation, and although it was decided, among other things to reinforce the Boundary Force by two more brigades … [T]he situation is long past mere military action and requires political leadership of the highest order.’\footnote{Viceroy’s Personal Report, No. 17, 16 August 1947, TOP, XII:489, 763; also reproduced in Mountbatten’s Report, 280-1.}

After the 15th, things did indeed get worse.\footnote{See General Rees papers for specific situation reports (SITREPS) from the 15th until the end of the month. The SITREPS are also reproduced in Partition of Punjab, 514-17.} By the end of the month, there were accusations of troops firing upon one another, although actual reports are limited to a few small incidents. As one officer responded thus: ‘due to the atrocities committed here, and I don’t think there can be any worse in history, it is quite natural that the troops in the PBF should get affected. To a very small extent they have been, but the
incidents in this respect are negligible. Unfortunately they have been exaggerated and given big publicity, which tends to make matters worse. The Joint Defence Council met on 16 August to discuss the security situation; Field Marshal Auchinleck stressed the need to keep the PBF in place, and reiterated that ‘troops have so far been impartial and well disciplined, despite stories to the contrary’.

On 16 August, Mountbatten made the findings of the Punjab Boundary Commission public to the political leaders of Pakistan and India, and on 17 August to the populations of both countries. Independence brought still more bloodletting as Sikhs, Hindus, and Muslims set out to destroy one another. In the months following Independence, some 13 million people set out to cross the newly established borders in both directions—an undertaking that would tax the PBF to breaking point.

Mountbatten also wrote a personal report on the 16th, documenting the previous 15 days and setting out what he thought was needed in the coming months. He wrote:

rumours [about] the decision of the Boundary Commission in the Punjab had been sufficient to start large scale rioting which would undoubtedly have been a communal war on a big scale if it had not been for the joint Punjab Boundary Force … In Amritsar … but for the presence of the PBF there would now be a complete holocaust in the city. Local Muslim leaders are trying to persuade the Muslim soldiers to follow the example of the police [to become communal] but so far without apparent success … It is quite clear that the soldiers are doing everything that is humanly possible to try and hold the situation … [T]he situation is long past mere military action and requires political leadership of a high order.

Military commanders held politicians on both sides largely responsible for the communal violence. General Rees reinforced this view:

44 Tuker, Memory, 435.
46 See Hamid, Disastrous Twilight, 234-5.
48 General Savory’s comment on this situation: ‘Sad to see the approaching end of an Empire. Sad not so much because of our departure but because of what we are leaving behind us which looks like bloodshed and anarchy now raging in the Punjab and elsewhere … The end of Nehru’s Government which will be remembered for wrecking the law and order which the British had tried their level best to bring about in the subcontinent’, quoted in Hamid, Disastrous Twilight, 231.
It is good, and encouraging to all PBF officers and men, and to me personally, to know that we have your confidence and your backing. I will do all that lies in my power to see that we carry out our task as you would wish us to … The hard truth is that without the neutral Indian Army the slaughter and terror would have been desperate and completely out of control … [W]e are having heavy communal propaganda levelled at our officers and men … but I am combating it through the ICOs, Subedars and VCOs and they and the men realise and agree that unlimited bloodshed and terror would have been reigning in the central Punjab today … if they were not standing firm and rock like as the IA always [is] when called upon.49

Field Marshal Auchinleck forwarded the above letter to Lord Mountbatten with the additional comment that ‘I am sure that Rees is right and that any attempt to replace the PBF by dominion controlled forces forbidden to cross the common boundary would be likely to end in disaster and possibly an open clash. This is my opinion which is shared by Arthur Smith and [Lt General] Lockhart.’50

The pressures upon senior officers began to be unbearable. The brigadier in charge of the 11th Indian Brigade sent a note to General Rees on the 20th. He wrote: ‘I have to request that I be replaced by another officer in my present appointment … [I]n the last four days there have been two massacres of defenceless Muslims which could have been prevented if I had the co-operation of the civil authorities. I now feel that I can not conscientiously continue to work under these circumstances.’51

Accusations continued on both sides. The magistrate of a sub-area in Sialkot accused the PBF: ‘troops at present employed in Sialkot city are working against the interest of Muslims in that they are arresting Muslims from inside their homes and bringing them in as curfew breakers.’ (Ironically, the battalion in question was commanded by a Muslim.) The commander defended his unit with these words: ‘the Boundary force is impartially working to restore order. We are here to maintain law and order irrespective of communal spirits.’52

49 OIOC, Rees Papers, file 73, Misc. 17 August 1947; also reproduced in the Auchinleck Papers, No. 1247, University of Manchester.

50 OIOC, R/3/1/171 Field Marshal Auchinleck to Lord Mountbatten, 20 August 1947; also reproduced in Partition of Punjab, 496-7.

51 OIOC, Rees Papers, file 54, 20 August 1947. Lt General Messervy made a telephone call on 22 August 1947 to DCGS, stating: ‘one Brigade commander and one Regimental Centre Commander has said that they were unwilling to continue to serve in the present conditions, because the orders they were receiving from the Civil appeared to be meant to increase the troubles and massacres rather than stop them. There must be something very wrong with the attitude of the Civil when British officers took this line.’ OIOC, Cat. No. R/3/1/171; also reproduced in Disturbances, 358-9.

52 OIOC, Rees Papers, file 54, 20 August 1947.
At the same time that this report was generated, General Savory received a letter highlighting a different point of view regarding Muslim/Sikh relations. The letter, from Lt Colonel Mahammed Siddeq MC, 7/11th Sikhs, stated, in part: ‘I belong to West Punjab and being a Muslim have no choice but to serve in Pakistan. I am a most disappointed person today. The Indian Army is systematically being destroyed … to satisfy the politicians … I love my Sikhs.’

PBF units attempted to intercept the armed mobs before they caused damage to defenceless villages or sections of cities throughout the Punjab. As Major P.H James noted: ‘Occasionally we arrived in time to save a village and to disperse or destroy some of the attackers, but often we only knew of the event when we observed smoke from burning homes some miles away.’ Colonel Fergus Macartney noted that at times he was successful in quelling violence, such as when his battalion was sent into the Railway Station area of Lahore. He reported: ‘Our really hard work then started—continuous patrolling day and night both on foot and in motor transport. I’m glad to say I got my area under control quickly, and in fact we opened fire twice, each time on gangs of Muslim hooligans killing a stray Hindu.’

Brigadier R.C.B. Bristow, commander of the Dogra Regimental Centre in Jullundur and then the 11th Indian Brigade, noted a short but brisk engagement.

I was returning to the Cantonment … when suddenly out of the left I spotted a large Jatha advancing on the City [Jullundur] … [The Muslims were then concentrated in certain areas … only lightly guarded through lack of troops … I was being followed by a jeep of the Brigade Defence Platoon with three Gurkhas and a Bren gun … ordering the Gurkhas into action … [A]fter an ominous pause a few Sikhs with firearms emerged, and began to skirmish towards us with all the skill of trained soldiers … [T]he Gurkhas responded to each rush with a determined burst of fire, and soon brought the attack to a halt … [T]hat incident showed that large armed Jathas could be dispersed by a few resolute soldiers, who were prepared to fire.

Reports from this period report on a variety of situations involving the army. Lt Colonel Reynolds, from the 2/9th Gurkhas, reported on movement of 5000 Muslim civilians from East Punjab to the border with Pakistan, under the protection of a

54 James, ‘Sovereignty’, 118.
55 Colonel Fergus Macartney, PBF, 7.
56 Bristow, Memories, 167.
company from the Mahar Regiment commanded by a Hindu major. Reynolds noted that Hindu police in the area were communal, and recounted how, as the column of civilians came to the border area: ‘I asked at the police station if [five dead Muslim civilians] could be removed, I was informed it was not in their area, and they didn’t seem to be interested. The police station was on other side of the road.’

When the Joint Defence Council (JDC) met on 25 August, members called for the end of the PBF and final division of the units to assignment in Pakistan and India. At the same time that the JDC was calling for an end to the PBF, the 5th Indian Brigade accused Mr Baldev Singh, the Defence Minister, of providing weapons to Sikhs in the fighting. On the same day, a Times correspondent openly accused Hindu and Sikh soldiers of standing by while violence was perpetrated against Muslims. The Hindustan Times took its cue from the London Times and printed an article on the 27th, claiming that British officers of the PBF and British ICS had not risen to the occasion, but had allowed the atrocities to go on.

In spite of all this, many still believed that the PBF had carried out its duties to the best of its ability, and that it remained a viable force. General Savory wrote to his wife that ‘Things in the Punjab are very bad, with Sikhs going quite mad … [T]he troops have been quite remarkable, however, one does wonder how much longer will they be able to stand the communal strain … [T]he partitioning of the Indian Army is going with great speed. The poor old Indian Army. It is too sad … British officers can do nothing except to try to keep the two Dominion armies stable and stop

57 OIOC, Mss Eur D917 Lt Colonel Reynolds.
58 General Rees wrote rough notes stating that the force should be disbanded in light of tensions rising to a near-explosive point. See Jeffrey, ‘Punjab Boundary Force’, 515. However, other historians claim that, during the meeting, he defended the PBF, which is consistent with his actions during this period. Rees may have agreed to disband the force, but he wanted the decision to be made by Auchinleck and himself, not by the politicians whom he blamed for the communal violence.
59 OIOC, Rees Papers, file 61, 25 August 1947.
60 See article in The Times, ‘Massacres in the Punjab—Muslims butchered by armed mobs of Sikhs’, 25 August 1947. As noted by Mountbatten’s private secretary Alan Campbell-Johnson on 27 August 1947: ‘Pete Rees received very few thanks from either side for his efforts to carry out a task of unparalleled difficulty. Without the wholehearted backing of the Governments and the Press on both sides, the positions of the PBF and its commander became rapidly untenable, and otherwise steady and experienced troops began to feel the tug of communal loyalties deeper even than their military discipline’: Mission with Mountbatten, 176.
61 Hamid, Disastrous Twilight, 239. Alan Campbell-Johnson, Mission with Mountbatten, also stated that on the 27th, Mountbatten was being persuaded that there was a need to disband the PBF; however, he was clear about its performance: ‘the PBF was undoubtedly the best military answer to the problem, he was ready to concede that in this instance psychological reasons might outweigh purely military ones’, 174.
them from becoming violently communal. Other officers felt that the situation was much more tenuous. By the end of August 1947, the PBF had suffered 12 killed and 32 wounded.

The decision to disband the PBF was taken on the evening of 1/2 September. General Rees issued a memo to his troops on 31 August, ordering units to release companies and squadrons to either Pakistan or India, based upon their communal background. General Rees stated, ‘there was good measure of confidence that the PBF would be adequate to deal with any situation likely to arise. Its units had no trace of communal feeling and all over India expressions of goodwill were received … [I]n the event the ingrained mutual trust of generations dissipated exceedingly rapidly.’ Others had a more nuanced response to what was happening. One British officer noted that ‘[d]ue to the atrocities committed here and I don’t think there can be any worse in history, it is quite natural that the troops in the PBF should get affected to any small extent they have been but the incidents in this respect are negligible. Unfortunately they have been exaggerated.’

Close to a century of planning, assessment, and action had forged the Indian Army into a veteran force that was above whatever political disputes raged beyond its ranks. For the most part, the British Raj had succeeded in keeping it cocooned from the contentious politics of the day. However, the expansion of the army during the Second World War had left behind a huge number of demobilised—and, in many cases, disenfranchised—and trained personnel, at a loose end in a fragmenting society. As a result of high-level policy decisions, the professionals who remained in the army had, as the political situation deteriorated, to contend with politicised and lethally skilled security forces who used their military training to take communal violence to unforeseen levels of organisation and ferocity.

63 ‘Trouble started in the mixed regiments of the 43 Bde, 1/Baluch and 1/2 Punjab. They became close to being non-effective, particularly the 1/2 Punjab with its Sikh CO. They had to be removed from the Brigade and broken up.’ This refers to the officer discussed previously, who was causing problems on the 21”. Macartney, ‘PBF’, 9.
64 OIOC, Rees Papers, Misc Correspondence, ‘Casualties’, October 1947.
65 The Joint Defence Council meeting held on 29 August 1947 decided to end the role of the PBF. For specifics, see Partition of Punjab, 503-8. On 1 September, after an outbreak of violence, witnesses at Ambala Cantonment Station accused soldiers, predominantly Sikh, of not doing enough for dying and wounded Muslims who arrived on a train. The soldiers plus one officer were put under arrest by the Lt Colonel of the 2/1st Gurkha Rifles, who happened to be travelling through. Tuker, Memory, 436-7.
67 IWM, Lt General Tuker Papers, Box 71/21/10/4, Disturbances ‘Notes from a British Officer in the PBF’, 29 August 1947.
Even in the face of this untenable situation, the Indian Army’s experiences in the Second World War proved important. Its record of service in the war—its professionalism in the face of initial defeats; its willingness to assess, reform, and learn; its transformation into an integrated and nationally representative force; and its effective and ultimately victorious action—had created a lasting bond of esprit de corps among all ranks and ethnicities. This bond provided a firm foundation for the army to refer and hold on to, even in this most testing period of its history.

Contrary to what is asserted in many simplistic descriptions of the period, the Indian Army as an institution did not collapse. There were incidents of sub-units showing a lack of discipline, as has been discussed elsewhere. Considered against the whole spectrum of events, these are amazingly few, and mainly serve to point the larger question: what army in the world, then or now, could have done a more professional job under the circumstances, and held together as well overall? The Indian Army did not fall apart, and this alone is a considerable achievement. It is more so when considering that virtually all of India’s civil institutions in northern India did fall apart in the run-up to Independence and Partition, and without the Indian Army holding fast in the final days of the Raj, the death rate and violence could easily have been multiplied many times over. It is a testament to the Army that it stood its ground and did what it could do in the midst of a civil war, amongst its own people, and did not resort to widespread violence themselves.

As stated in the introduction, Major General J.C. Bruce, Commander of Lahore area, speaking at a press conference on 3 June 1947, may still provide the best and most succinct summary of the Indian Army’s position, responsibilities, and beliefs during this period:

The Army is not an inferior organization, we do not take sides, we do not fight for one community against another. Unfortunately in all countries and amongst all communities there are wicked and selfish men who are only too ready to stir up trouble and to seek personal gain from the misery of others … [T]he enemies against which we have now to be prepared to operate, are, therefore, brutality and chaos in whatever form these threats may present themselves and I am confident that all ranks will not only recognize their clear duty in this respect, but will be proud.

68 See comments by Singh in Partition of Punjab, xxviii, as an example: ‘Some of the most gruesome tragedies were enacted in the area entrusted to it [PBF] by its own units because the military force under General Rees was infected with communalism.’ The evidence does not support such a blatant statement.
to show once again that forces of goodwill and sound commonsense always prevail. ... [W]hen you see fellow countrymen, perhaps even your own friends or relations, either the victims of brutal assaults, or else, guided by thoughtless or evil agitation into unworthy acts or violence, you must not give way to your personal feeling for one moment. You must remember that you are on the spot as the impartial instrument of justice and truth. ... You must restrain the evil doers. You must protect and secure those who have suffered or are in danger. You must not be overcome by any desire for reveng ... In this way you will have shown yourself a worthy member of the great Indian Army to which you belong and will have held up the noble tradition of your unit.

The vast majority of the units in the Indian Army of this period can declare without hesitation that they upheld these proscriptions. Led by one of the most conscientious and surely the most forward-thinking CinCl that they had ever had, Field Marshal Auchinleck, the Indian Army could take pride in the fact that they did so despite pressure to act otherwise by numerous future political leaders in India and Pakistan, and lacking clear political leadership from HMG. In the final analysis, the historical record shows unequivocally that the vast majority of Indian Army soldiers, NCOs, VCOs, and officers were as loyal to one another and to the regiment as many previous generations had been, and under far more trying circumstances. Bonded by the battle experiences of the Second World War and by a shared sense of pride and professionalism that crossed ethnic, religious, and regimental boundaries, the army remained overwhelmingly cohesive and impartial, even when standing alone in the midst of the civil war that had erupted amongst their own villages and families. Ultimately, with only itself to rely upon, the Indian Army in the last days of the Raj was indeed a rock in an angry sea.
‘Preventing Mistakes’: Adapting to Culture and Competence in the War for Korea, 1946–1953

Bryan R. Gibby

Western armies are rediscovering the value of soldier-diplomats who are culturally savvy. Contemporary conflicts require military leaders not only to be proficient in the practice of managed violence but also in the practice of managed dialogue and persuasion. Relatively recent military history is studded with talented, charismatic, and successful ‘cultural experts’ who were militarily competent. Some of the better known figures to western audiences would be Charles G. ‘Chinese’ Gordon, Thomas E. Lawrence (of Arabia), and Orde C. Wingate. Each successfully organised, managed, and even commanded foreign military forces within a culturally alien environment. They emerged through informal or even exigent processes into their roles as gifted administrators and leaders. They successfully leveraged indigenous forces in support of their native country’s own strategic ends.

Foreign military advisory missions have been, and continue to represent, a potent option to pursue national objectives with a small commitment of manpower and expense. However, these missions are complex and success or failure often can hinge on intangible factors requiring cultural, political, and social acculturation not typically cultivated in modern military institutions. For example, personal qualities such as emotional stability, persistence, leadership, adaptability, diplomacy, and empathy with the host nation have ranked high as desirable traits; note the absence

The views expressed in this article are mine and do not necessarily represent those of the United States Army. I appreciate Dr Andrew Birtle and Dr William Donnelly, both from the US Army Center of Military History, for their comments and constructive criticism on this paper.
of more traditionally martial descriptors such as aggressive, decisive, or fearless.\textsuperscript{1} The American experience in the Korean War illustrates the value of the former qualities, the difficulties—personal and organisational—inhernent in any advisory mission, and the steps the institution can and should consider taking to increase the likelihood of a successful outcome.

This paper evaluates the American military advisory missions to the Republic of Korea from the end of World War II until the signing of the Korean War armistice in July 1953. American advisors found themselves tackling not only obvious roles of training, administration, and organisation, but also more crucial ones like army construction, counterinsurgency, leader development, institutional mentorship—and occasionally combat leadership. Post-war Korea’s modern military tradition was both limited and borrowed from Imperial Japan, and the American military government from 1945 to 1948, followed by the Syngman Rhee government, was under continuous attack by an escalating wave of political and military pressure that culminated in the total war of 1950-53. Success was a moving target, varying from the initial establishment of an internal security force to growth and survival of a small army to the development of a larger and more modern force capable of combined arms combat at a minimally acceptable level of American support.

The challenges to these objectives—ignoring for the moment the enemy—can be organised into two categories, one affecting the advised and one centred on those doing the advising. From the Korean side, three persistent difficulties revolved around leadership, organisation and equipment, and training. Of these three problems, recruiting, training, and promoting competent leadership was the most vexing, as the Korean army’s overall effectiveness relied primarily on the quality of its officer corps first, and only secondarily on its training, weaponry, or even quality of advice

\textsuperscript{1} Warren R. Graham, \textit{Preparation and Utilization of Military Assistance Officers} (Washington, DC: The American University Center for Research in Social Systems, 1969), 46-8. This list is not all inclusive. Much of the literature on advisory duty emphasises a broad range of personal characteristics desirable in an officer assigned to advise a foreign army. These character traits, though, tend to be among those learned over a long period of service experience and not readily taught in a preparatory course. Interestingly enough, language capability, though desired, rarely ranks as an essential capability. See Wesley R. Fishel and Alfred H. Hausrath, \textit{Language Problems of the US Army during Hostilities in Korea} (Chevy Chase, MD: Operations Research Office, Johns Hopkins University, 1958), 68; Alfred H. Hausrath, \textit{Problems in the Development of a Local National Army Based on Experience with the Republic of Korea Army} (Chevy Chase, MD: Operations Research Office, Johns Hopkins University, 1956).
rendered by the Americans. As will be shown, the American advisors grappled with these problems until the end of the conflict.

American advisors had their own set of limitations: a foreign language, low education levels in Korean society, unfamiliar military traditions, and radically different cultural backgrounds obviously caused friction between American and Korean officers, but these were surmountable obstacles. The most difficult challenge was the advisor’s inherently limited flexibility: no matter how committed he was to his advisory mission, he was still a product of his own army’s culture, tradition, and experience. It was unavoidable that the Korean army would develop as a facsimile of the American army, but it was important that the advisory mission not create a colonial army. The Koreans had to stand eventually on their own. Therefore it was important to make the Korean army as compatible with the American one as possible without stripping it of its indigenous characteristics. The American advisor walked a fine line as the temptation to do everything the ‘American way’ was powerful, but also self-defeating. Again, the definition of success is important: a competent army with a minimally acceptable level of American support.

The Americans had no doctrine or substantial experience to deal with these issues, and the first attempts to address them were based on an individual advisor’s personal preference and intuition. However, by 1948, a solution, known as ‘the counterpart system’ emerged through experience that proved successful at tamping down the most negative effects of these challenges and limitations, even if it did not solve them outright. Through the counterpart system, the American-Korean relationship matured sufficiently to weather the effects of sedition, rebellion, guerrilla war, and conventional war. Advisors typically took this relationship seriously. As expressed by one senior advisory leader, ‘I realize that I stand or fall with my counterpart. I share in credit for his successes and in blame for his failures.’


3 Hausrath, Problems in the Development of a Local National Army, 1-2, 55, 143, 163.

The American advisory effort began with the US XXIV Corps commander, Lt. Gen. John R. Hodge, directing in mid-November 1945 the establishment of a national Korean defence force. Colonel Arthur S. Champeny assumed duties as the first director of the Office of National Defense within the Military Government to oversee both the Bureau of Armed Forces and the Bureau of Police, later combined as the Bureau of National Defense. Anxious to relieve US forces of internal security duties, Hodge hoped the creation of a Korean military organisation under the control of the Military Government would reduce the potential for violence and remove a great military and political burden from the Americans.5

Hodge quickly approved Champeny’s plan, effective 14 January 1946, to establish a constabulary force to act as a reserve for the National Police with an authorisation of 25,000 men. The Americans scrambled to enrol both rank and file and officers to lead them.6 However, recruitment progressed slowly; after four months the entire Constabulary numbered only 3000 men as there seemed to be little enthusiasm ‘for a Korean army as such’.7 In fact, many Koreans identified the Constabulary too closely with Japanese-era colonial institutions because many early officers and NCOs had Imperial Japanese army backgrounds. Also, the occupation government offered little incentive for young Korean men to join the ranks, where conditions for food, discipline, and treatment ‘fell somewhere between the harsh standards of the Japanese army and the treatment of Japanese POWs’.8 Not surprisingly, recruitment became much easier once the National Police began to crack down on leftist groups, whose members moved quickly to enlist in an organisation craving manpower and subsidised by the Americans.9

Lacking a system to recruit officers, the Americans simply invited representatives of militia groups and any Koreans with military experience to apply for commissions. The Americans then retained qualified candidates who appeared compatible with

7 Headquarters, United States Military Advisory Group to the Republic of Korea, Historical Report, 1, U.S. Army in Korea and Military Advisory Group Korea, Historical Reports, 1949, Army – AG Command Reports, 1949-1954, Record Group 407, National Archives and Records Administration II (NARA II), College Park, Maryland (hereafter KMAG Historical Report); KIMH, *KW*, 1:70.
American military doctrine and culture, which in practice meant some English language capability and formal military experience. As junior American officers, transferred from the XXIV Corps, reported to receive their Constabulary assignments, they picked up three or four new Korean lieutenants and moved out to recruit their units. The leadership cadre for the first six of eight planned regiments was formed in this manner.10

Potential Korean officers were young and inexperienced in the art and science of modern warfare as practised by the Americans, and as units began to come together as battalions and regiments, the advisors (who at this point were de facto commanders) had to tackle the complex challenge to train and govern this embryonic army. Training Korean soldiers proved to be much more difficult than training American ones. For example, advisors struggled to indoctrinate Korean officers who had to unlearn tactics and techniques incompatible with American methods and weapons. The Japanese tactics familiar to most Korean officers and NCOs as practised on mainland Asia ‘suggest[ed] that battle, whenever possible, was reduced to a drill’.11 The heavy emphasis on aggressive, even reckless, small group action over mutually supporting manoeuvre or higher unit objectives meant that offensive tactics lacked cohesion and coordination, and often degenerated into wasteful frontal efforts. Since the Japanese did not practise the same degree of combined-arms coordination as the Americans did, elementary tactics such as fire and movement, support by artillery, or support by fire were alien to Koreans.12

A high level of functional illiteracy required troop training to be presented in a visual format and reinforced through demonstration, rote memorisation, and repetition. Such measures can be effective for introductory tasks, but they are time-consuming and mindless; add to this mixture the inability to communicate except through an interpreter and the result would test the patience and flexibility of advisor,

10 The first one hundred and ten officers of the ROKA were selected through this informal procedure. These ‘Korean Army Founders’ had a lasting and disproportionate effect on Korean military and society. See Chi-op Lee and Stephen M. Tharp, Call Me Speedy Lee: Memoirs of a Korean War Soldier (Seoul: Wonmin Publishing House Co., Ltd., 2001), 43-50, 238. Veterans of the Imperial Japanese army or its surrogate Manchukuo army tended to dominate the early commissions with only a few Koreans coming from the China-based Korean nationalist ‘Restoration army’ (Kwangbok-kun) and the Nationalist Chinese army. For the varied political and ideological problems stemming from the various military backgrounds of Korean officers, see Kim Se-jin, The Politics of Military Revolution in Korea (Chapel Hill: The University of North Carolina Press, 1971), 42-53.


12 Ibid., 38, 40-2.
trainer, and trainee. For more complex tasks or for technical skills training, illiteracy was a major handicap to developing a combat capable military force. Lack of materials, equipment, common standards, and suitable training areas made training inefficient, frustrating, and perhaps not even that effective, but the Americans were confident that conditions would improve with time. One senior advisor said that the Koreans’ ability to learn military arts depended in great part on their ‘educational level, ability of the leaders, and efficiency of the training program’. Furthermore, considering Koreans ‘[were] not accustomed to telephones, radios, modern weapons and mechanical equipment to have obtained as much information in as short time as they have, it appears that they have an inherent aptitude for training and learning new methods’. 

This summation of challenges is not exhaustive but sufficient to illustrate the complexity these foreign officers faced with organising an army from scratch, equip it, administer it, train it, and provide it enough legitimacy to stand on its own. Unfortunately, few Americans during the occupation period (1945-1948) appreciated both the magnitude and duration of their mission. In May 1946, Colonel Terrill E. Price replaced Colonel Champeny as the Director of the Department of National Defense, renamed the Department of Internal Security (DIS). Korea’s many political and economic problems stifled enthusiasm for putting scarce resources into an army. Frustrated with intractable conditions and unable to work out a suitable political compromise to unify the two halves of the peninsula, the US referred the problem of Korean unification to the United Nations. When the Soviets subsequently proposed to remove all foreign troops from Korea, the Americans were forced to consider the Constabulary as the national military defence force of the south. Hodge agreed in December 1947 to expand the Constabulary to 50,000 men and provide heavy

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13 Not until after the war did the ROKA institute a three-week literacy program that reduced the percentage of trainees required to repeat various phases of training from 20 to five per cent; Headquarters, Eighth United States Army Korea, Experience and Lessons Learned in Training the ROK Army, 30-31, 8th U.S. Army Experiences and Lessons Learned, Classified Organizational History Files, Military History Office, US Army Pacific, Record Group 550, NARA II (hereafter Experience and Lessons Learned).


15 Experience and Lessons Learned, 31.

16 Soviet objections to the implied establishment of a national defence organisation for a country that did not yet technically exist prompted the name change. The Constabulary also dropped the word ‘national’ in its title. By the end of the year command authority for all Korean security organisations transferred from the Americans to the Koreans; KIMH, *KW*, 1:68-9; Sawyer, *Advisors in Korea*, 23.
infantry weapons, light artillery, and light armoured vehicles, hoping that these measures would make the Constabulary at least look more like an army. To get to the new authorised strength, Price insisted on speed over screening out potential subversives. Consequently, leftist infiltration both into the officer corps and the ranks reduced the Constabulary’s effectiveness and threatened its long term viability.

The one early advisor who seemed to grasp the essence and problematic nature of the expanding Korean mission was Captain James H. Hausman, a reserve officer who arrived in Korea in August 1946 and stayed until just after the North Korean invasion in the summer of 1950. Over the next four years, Hausman oversaw the Constabulary’s expansion to 50,000 men, helped purge its ranks of communist subversives, negotiated the acquisition of American weapons and ammunition, and navigated between the various nationalist politicians, the National Police, and the military government. Hausman’s personal example and work ethic impressed his American and Korean colleagues equally. He personified the counterpart system, making it the foundation for the professional relationships and moral support of the future ROK Army (ROKA). He accomplished this extraordinary transition through a complete immersion in the culture and language of Korea, which amplified his diplomatic and military competencies. In the eyes of many Koreans and his fellow advisors he emerged as the father of the ROK Army.

Great as it was, Hausman’s influence was informal. It took the arrival of another officer, Brig. Gen. William L. Roberts in May 1948, to institutionalise the counterpart system as the standard advisory practice. Roberts keenly felt the responsibility for making the Constabulary (after 1 December 1948, the Republic of Korea Army - ROKA) into an efficient and competent organisation, and his advocacy of the counterpart system solidified the advisors’ signature trait. Because Roberts had little influence over who was assigned as an advisor, he published the Advisor’s Handbook in the fall of 1949, outlining his standards of leadership, expectations, and procedural techniques to assist the field advisor. In practice, he expected advisors to weld themselves to the Korean officer to whom they were assigned to advise.

17 KMAG Historical Report, 3; KIMH, KW, 1:69-70.
and he required advisors to provide continuous and even unsolicited advice to their counterparts. To reinforce his expectations, and ensure the Americans clearly understood their place in the military chain, Roberts emphasised, ‘Advisors do not command – they ADVISE’, and he cautioned against trying to ‘convert the Korean into an American’. Their mandate was simply ‘to organize and train, in a democratic way, a small but efficient organization … capable of maintaining internal security’.20

It bears repeating that Roberts wanted the military marriage of Korean and American systems to work, and he held individual advisors personally responsible for outcomes. With minor modification this operational method lasted throughout the war years, and was responsible for the increasing professionalism and competence of the Korean officer corps.21

An early example of the counterpart system at work in a campaign occurred in the fall of 1948. Previous challenges to the military government generally were limited to attacks against the National Police, known Japanese collaborators, and other government functionaries. However, the onset of elections in the southern zone in the spring of 1948 provoked more severe uprisings throughout the south. The newly seated National Assembly drafted a constitution and elected Syngman Rhee as its first president on July 20. With American approval President Rhee proclaimed the independence of the Republic of Korea on August 15, 1948. In a near-simultaneous series of changes, the military government terminated its operations and the American advisors (90 altogether) previously assigned to the DIS were reassigned to the Provisional Military Advisory Group (PMAG), with William Roberts as chief.22

The Yosu-Sunchon rebellion, which began on 19 October 1948, was the severest test the Constabulary faced up to that point.23 A cadre of subversive noncommissioned


21 For the contemporary assessment of the counterpart system, see KMAG Historical Report, 5-7. For additional analysis on how the counterpart system functioned in training and combat, see Bryan R. Gibby, The Will to Win: American Military Advisors in Korea, 1946-1953 (Tuscaloosa: University of Alabama Press, 2012), 98–105.


23 The ROK constitution assigned national defence to the National Armed Forces. The legal foundation for the Ministry of National Defense and the national army passed the National Assembly on November 30, 1948. At that point, the Constabulary transitioned its organisation, leadership, and authorities to the Republic of Korea Army. KIMH, KW, 1:73-74.
officers and men from the 14th Regiment mutinied against orders to deploy to Cheju Island. They broke into the unit’s armory, killed their loyal officers, and proclaimed a national uprising. Roberts recognised the political implications of the rebellion and knew it required a coordinated response beyond the young army’s capabilities. He took no chances and ordered Captain Hausman to supervise the Korean counterstroke. He further convinced the Constabulary chief, Song Ho-song, to organise a Counter-rebel Combat Command around the 5th Brigade and to declare martial law. Prompted by Hausman, General Song eventually ordered loyal units to begin converging on Yosu. Hausman and the Korean G-2 officer, Colonel Paik Sun-yup, then convinced Song to appoint Colonel Kim Paik-il to take command of the reorganised brigade, bringing under its control loyal elements of the 3rd, 4th, 5th, 6th, 12th, and 14th regiments. Kim was an excellent choice for this command, having experience fighting Communist guerrillas in China and exposure to Hausman as the Constabulary’s operations officer. With his own hand-picked Korean staff and American advisors, Kim directed his forces toward Yosu on October 22.

Intense fighting broke out in Sunchon and neighbouring Kwangyang and Posong. But once the 5th Brigade solidified its hold on Sunchon by 24 October, it was able to break the mutiny into three separate parts and overpower each in turn. The final thrust against the rebels in Yosu began at 0600 hours on 25 October but made little progress until the 1st Reconnaissance Troop arrived from Seoul with its armoured halftracks and heavy machine-guns mounted in jeeps. After three days of intense fighting, much of Yosu was in ruins, but the Constabulary’s heavier firepower dominated and then overwhelmed the isolated defenders. However, due to President Rhee’s impatience to crush the Yosu rebels, hasty and uncoordinated attacks allowed many rebels to escape.

25 Lee and Tharp, Speedy Lee, 230; Millett, ‘Captain Hausman’, 524-5. Hausman estimated just over 5,000 troops took part in the liberation of Yosu. List of Task Forces in Yosu Operation up to October 27, Yosu File, Box 7, Hausman Archive. Kim Paik-il was well-respected by the Americans and Koreans alike. He unfortunately died in an airplane crash while commanding the ROK I Corps in March 1951.
26 See Yosu File, Box 7, Hausman Archive, for correspondence from Roberts urging action to ‘crush rebels,’ provide accurate and coherent reports, and media relations. The rebels declined to fight a pitched battle at Sunchon and evaded the 5th Brigade’s blow using captured trucks and escaped southwards. Richard J.H. Johnston, ‘Korea Announces Ending of Revolt’, New York Times, 26 October 1948, 12; Diary of First Lt. Minor L. Kelso, transcribed copy with comments provided to author.
27 Headquarters, XXIV Corps, G-2 Periodic Intelligence Report (PIR) 971, G-2 Periodic Reports, August to October 1948, USAFIK, XXIV Corps G-2 Historical Section, RG 554, NARA II; Millett, Their War for Korea, 159-60.
Despite many problems with troop control, command, and coordination the Americans concluded that the Koreans performed reasonably well. Advisors saw the many challenges facing the immature Korean army and thereby gained an objective perception of the Koreans’ capabilities that was impossible to quantify in their routine role as training advisors. The Americans also firmly demonstrated their tactical, administrative, and logistical expertise, thereby increasing their prestige in the eyes of their counterparts. Not only did the advisors gain valuable combat experience, but Yosu reaffirmed the counterpart principle. The official advisory historical report commented: ‘It [the Yosu-Sunchon operation] was also a good test for the system followed by the American Advisory Group, for it showed, although it is difficult, the Advisor can properly advise his counterpart even in battle.’

Although advisors had no official combat role and they had no command authority over Korean troops, many found themselves increasingly participating in operations against guerrillas, bandits, and even North Korean security and army forces. Participation in combat operations was the one task that carried the most risk and had the potential for the greatest gain. How much (or little) an advisor had to do personally was a good gauge of a Korean officer’s or unit’s competence. With the ongoing drawdown of US troops in Korea, Roberts made it very clear that the advisors’ role was to prepare their counterparts to do for themselves what they could no longer rely upon the Americans to do – defend their country.

Following the Yosu-Sunchon campaign, Roberts ascertained some of the critical weaknesses in training, drill, and discipline that he expected advisors to correct. Additional advisors began to flood the field, but Roberts was picky in whom he sent where. One advisor recalls that Roberts, assisted by Hausman, actively sought officers from the dwindling occupation manpower pool with combat experience to send to field units. Gradually Roberts fleshed out PMAG’s authorised strength to 248 advisors, but these were still inadequate to fulfill all the functions necessary for the formation of a new army.

28 KMAG Historical Report, 1949, 5.
29 Harold S. Fischgrund, email to the author, 8 February and 18 February 2002.
30 Minor L. Kelso, telephone interview by author, 5 December 2003, notes; Headquarters, Eighth United States Army Korea, Historical Section, Special Problems in the Korean Conflict and Their Solutions, 1952, 2, U.S. Army Military History Institute, US Army Heritage and Education Center, Carlisle, PA. When KMAG became operational in July 1949, its manpower authorisation was raised to 492.
In June 1949, just a month after some severe fighting along the 38th parallel, Roberts reminded his advisors that though their chief task was training, they needed to be prepared to assume a wartime function. “This army,” he told them, “even to do its defense mission, will, in my opinion, need your stabilizing advice.” Often advice in combat was only as effective as the advisor’s interpreter. An advisor’s effectiveness depend upon being able to understand a situation, give pertinent guidance, and—when required—assistance to implement that guidance. Therefore, an American’s relationship with his Korean interpreter assumed an importance almost equal to that of his counterpart, but too often the advisor remained ignorant of how his question was translated and of how the ensuing discussion unfolded. He had to trust his interpreter not only to interpret correctly the English-Korean exchange, but also to capture the nuances inherent in any verbal communication, particularly those bearing on a fluid tactical situation. Major Howard A. Trammell recalled, “Fortunate indeed was the advisor who had [an interpreter] who could really translate and interpret.” However, the Americans never had enough interpreters or printed materials to help them teach Korean soldiers the rudiments of tactics, weaponry, or field craft. Military terms and concepts like machine-gun or phase-line had no natural Korean equivalent, and so had to be improvised. Others relied on a combination of written instructions in English (for the interpreter to read and then translate), pantomimed gestures, and hastily drawn diagrams. Even items as simple and ubiquitous as spark plugs were novelties to the Koreans, and known as ‘bolts that spit fire’. Eventually, the ROK Army formed a special Interpreter Branch, commissioning officers as second lieutenants and assigning them to the advisory group. Although language problems continued to inhibit the counterpart relationship, this action at least helped to mitigate the worst difficulties in communication.

On 1 December 1948, the Constabulary officially became the Korean Army, boasting a total strength of 64,588 officers and men. To reflect the growing responsibilities of PMAG, the U.S. Ambassador to the Republic of Korea, John J. Muccio, received in April authority for an official advisory group subordinate to

33 Robert G. Shackleton to Allan R. Millett, 11 April 1997, copy furnished to author.
34 Edward J. Stewart, telephone interview by author, 1 May 2003, notes.
35 KIMH, KW, 1:73-74; 2730 officers and 61,858 enlisted men, KMAG Historical Report, 5.
Muccio’s state department mission in Seoul. Washington also authorised an increase in personnel, which allowed General Roberts to plan for a redistribution of officers so that an advisor would be present at all military training schools and down to the infantry battalion level.

On 1 July 1949, the United States Military Advisory Group to the Republic of Korea (also known as the Korean Military Advisory Group, or KMAG) officially assumed duties as the military mission in Korea. Its mandate was ‘to develop ROK security forces within [the] limitations of [the] Korean economy, by advising and assisting [the] ROK in training such forces involving Army, Coast Guard, and National Police and by insuring effective utilization [of] US military assistance [to] these forces’. For an army now expanded to eight divisions and engaged in almost continuous operations countering border incursions by North Korean forces or hunting guerrilla bands in the deep south, it was a tall order for Roberts’s 492 officers and men.

Roberts continuously worried about the physical state of the army prior to June 1950. KMAG’s last great initiative was to build up stocks of weaponry and supplies. Washington’s cost consciousness—and desire to limit Rhee’s offensive potential—however, supported a paltry sum of $10 million in military aid, which only began to arrive in Korea by the time war broke out on 25 June 1950. As of May 1950,

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36 Sawyer, Advisors in Korea, 45; Douglas MacArthur, Reminiscences (New York: McGraw Hill Book Company, 1964), 320. The subordination of a military group to civilian authority was not unusual as many historians dealing with KMAG have suggested. Muccio, not MacArthur, was Washington’s point man in Korea, and Roberts was Muccio’s top military advisor. The two worked well together and appeared to have converging views on many of the military and political problems confronting the Seoul government.

37 KMAG Historical Report, 5.

38 KMAG Historical Report, 7; Inclosure 1 to KMAG Historical Report, 1.

39 Roberts understood the army’s weaknesses in firepower and logistics support, but he had to acknowledge realities that the Koreans did not yet grasp complex systems such as tanks, combat aircraft, and heavy artillery, which were economically and logistically unsupportable without substantial increases in military aid. When it came to tanks, Roberts observed, ‘It is interesting to note that they request a type of tank weighing forty-six tons. [The] limit on Korean railroads due to bridge capacity is thirty tons. I think they failed to reckon with the problem of distribution of such tanks once they were received in Korea. It should also be noted that ammunition for the tank, which is armed with the 90mm gun is omitted from the request.’ William L. Roberts to Charles L. Bolté, 13 September 1949, 2, Assistant Chief of Staff (G3), Box 87, Plans and Operations 091, Korea, Records of the Army Staff, Office of the G3, Record Group 319, NARA II.

KMAG estimated that the army had 15 per cent of its weapons and 35 per cent of its vehicles unusable due to maintenance shortfalls. Roberts warned his advisors ‘[t]he significance of this situation is that unless prompt, effective and vigorous measures are taken to conserve available resources, the Army will be dangerously reduced in firepower, mobility, and logistical support’.\textsuperscript{41} Even more disturbing was the assessment that ammunition stocks continued to dwindle from 19,000,000 rounds for small arms in December 1949 to a point that only six days of combat supply existed that summer.\textsuperscript{42}

The Korean army’s logistics problems cannot be overstated. Because Korean officers and soldiers had little understanding of logistics as practiced by the American army, advisors spent a lot of time teaching and coaching fundamentals of maintenance and supply. One advisor remembered:

Maintenance was a hell of a problem at first. You must remember that there were few vehicles in Korea before the war [1950], discounting Japanese Army, except oxcarts . . . As a result of this, the Korean didn’t know one was supposed to keep oil in the engine, anti-freeze in the radiator, inflated tires, etc.\textsuperscript{43}

However, once Korean soldiers were shown how to take care of their equipment, they generally did so, as long as the advisor held his counterpart to that standard. This meant visiting the local markets to check for unauthorised military supplies, spot-checking individual units, and at times even withholding authorization for supplies as a means to encourage compliance with an advisor’s ‘suggestions’.\textsuperscript{44}


\textsuperscript{42} Kim Chum-kon, \textit{The Korean War: 1950-1953} (Seoul: Kwangmyong Publishing Company, 1980), 208. Roberts blamed Korean commanders for failing to enforce fire discipline. In the fall of 1949, he reported that Koreans ‘burn up ammunition at a fantastic rate in operations … a study of enemy casualties and our own ammunition expenditure showed that it took 14,604 rounds of ammunition to produce one casualty’. Roberts to Bolté, 19 August 1949, 9. See also Roberts to Bolté, 13 September 1949, 2, Plans and Operations (091) Korea.

\textsuperscript{43} Trammell, ‘Korean War Notes’, 21.

\textsuperscript{44} Office of the Chief of the United States Military Advisory Group to the Republic of Korea, \textit{Advisor’s Handbook}, 17 October 1949, 4-5, 14-15, 30-2, Mowitz Papers US Army Heritage and Education Center, Carlisle, PA; Foster F. Cowey, telephone interview by author, 9 January 2004, notes.
The pre-war years were crucial to the development of the KMAG-Korean relationship. Advisors established credibility with their counterparts in an environment defined by an alien culture and language, limited practical experience, and inadequate manning and resources. Maj. Gen. Lim Sun-ha, one of the first officers of the Constabulary and later a war-time division commander, still remembers how impressed he and his fellow officers were with the Americans, who mentored the Koreans to embrace military professionalism. Korean officers on their own initiative strove to learn US military drills and customs and to acquire US uniforms and equipment – indeed, Koreans perhaps went overboard in their desire to do everything like the Americans, to the point of copying unit insignia.45 Although Roberts had expressly forbade the advisors from trying to turn the Koreans into Americans, the Koreans themselves saw imitation as the only the way to be who they wanted to be. The advisors’ high military standards commended them to those officers who eventually became the army’s senior commanders, establishing an enduring relationship with the future leaders of the ROK military.

The North Korean attack on Sunday, 25 June 1950, completely changed the dynamic between KMAG and the Koreans. KMAG’s contribution in the first two to three weeks was lacklustre chiefly because KMAG had no directive to participate in a real war. In fact, following embassy guidelines, when it became clear that North Korean troops had crossed the 38th parallel in strength, KMAG initiated Operation CRULLER, the evacuation of all US military and civilian personnel to Japan. The Koreans were stunned and dismayed.46 Some ignored the order, but two hundred and fifty men, nearly half of KMAG’s complement, remained in Japan until 1 July, when they returned to Korea. Colonel William H.S. Wright, KMAG’s acting chief, laid down new rules: their official duties as advisors now included taking active roles in combat operations. Desperate times called for extreme measures. KMAG officers would be expected to hold the Korean army together. He then ordered the advisors to go out, find their units and ‘reestablish a chain of command’.47

Importantly, KMAG’s own chain of command changed as well. On 28 June 1950, MacArthur’s Far East Command gained operational control over the advisory mission. Two weeks later, KMAG’s status as a subordinate unit of the US Eighth

45 Lim Sun-ha, interview by Allan R. Millett, 30 November and 1 December 1994; General Isaac D. White, Senior Officers Oral History Program, 426, US Army Heritage and Education Center, Carlisle, PA.
46 Paik Sun-yup, From Pusan to Panmunjom (Dulles, VA: Brassey’s, 1999), 4.
47 Elmer M. Lowry, Korean Idyll: Then Came War (Bandon, OR: Self-Published Manuscript, 2001), 109-13.
Army in Korea, commanded by Lt. Gen. Walton H. Walker, was confirmed. An equally important transition occurred on 15 July, when Syngman Rhee delivered the Korean army to MacArthur’s control. Three days later, MacArthur delegated that authority to Walker. The Americans now held a potentially strong hand, having administrative and command authority over all forces in Korea. To reestablish tactical coherence, and seeing that almost the entire Korean chain of leadership had broken down, KMAG found itself having to go ‘operational’, that is, for the critical days of July and into August, KMAG officers often assumed command over units they were only supposed to advise.

KMAG’s temporary usurpation of the Korean chain of command, though contrary to mandate, probably saved the South Korean army. Its preservation encouraged Eighth Army’s successive commanders (Walker was followed by Matthew B. Ridgway and James A. Van Fleet) to empower KMAG to make its most significant contributions to the war: soldier, leader, and unit training; army reorganisation; and increased combat efficiency. Beginning in late July KMAG officers organised a massive endeavour to induct, organise, and train thousands of South Korean men for military service. The Replacement Training Center (RTC) was established at Taegu in August 1950. Although its products could not claim to be well trained, the constant flow of armed men kept the Korean army in the fight, and the experience gained from the first RTC paved the way for even more ambitious and effective programs.

Major Dan Doyle, a reserve infantry officer who had been a regimental advisor from February 1950 until August 1950, was one of the first Americans detailed to the RTC. He understood the dilemma and urgency of the situation. ‘We teach them how to dig foxholes and how to take care of their guns. But I’m afraid they have to get most of their practice in battle’, he told Marguerite Higgins. He sold himself short, as Doyle combined combat experience and excellent technical understanding about military organisations with a zealous commitment to the Koreans he advised.

49 Eighth Army, Special Problems, 10-11; Stewart, telephone interview, May 1, 2003.
50 Gibby, The Will to Win, 140-7, provides analysis of KMAG’s Replacement Training Center operations that were responsible for inducting, arming, and training, tens of thousands of Korean soldiers in the first three months of the war.
51 Marguerite Higgins, War in Korea (Garden City, NY: Doubleday and Company, 1951), 158.
52 Doyle maintained a ‘Korean Customs Book’ with his own annotated entries about Korean culture, language, songs, and history; Box 5, Doyle Papers, US Army Heritage and Education Center, Carlisle, PA.
Having for the first time a centralized training location, Doyle and his counterparts were in a position to realise new efficiencies that made soldier training more effective. He set to work to adapt the US Army’s training manuals to the Korean situation, culture, and learning methods. He redacted essential parts of various manuals and produced for the RTC a single volume, richly illustrated so that an illiterate student or instructor could grasp their meaning. The training regime based on this manual progressed from basic soldier skills to instruction on weapons characteristics and capabilities, firing positions, individual movement, land navigation, squad movement, construction of fighting positions, weapons maintenance, and first aid. It was a lot to pack into ten days.\footnote{Basic Training Manual, Box 2, Doyle Papers.}

Fortunately Doyle worked well with his counterpart, Brig. Gen. Paik In-yup (General Paik Sun-yup’s younger brother). Paik and Doyle collaborated to determine policies, procedures, and best practices, which the Koreans then carried out, asking for the Americans’ advice as necessary.\footnote{Weekly Report, February 25, 1951, 4, Box 5, Doyle Papers.} Doyle proved that the counterpart system that had served KMAG so well from 1948 to the outbreak of the conventional war was still a valid model for professional understanding and cooperation, and that its utility in training was just as important as in a combat environment.

The RTC provided adequately trained manpower to fortify Korean units helping Walker hold his defences along the Naktong River and north of Taegu during the desperate days of the Pusan Perimeter. Later, its graduates reconstituted Korean divisions shattered following the Chinese offensive campaigns (late October 1950 through May 1951). Altogether, 499,751 trainees passed through the RTC system from July 1950 through August 1953.\footnote{Park Il-song, ‘The Role of the Replacement Training and School System in Developing the Republic of Korea Army, 1945-1953’ (Master’s thesis, The Ohio State University, 1992), 51; Alfred H. Hausrath, Problems in the Development of a Local National Army Based on Experience with the Republic of Korea Army (Chevy Chase, MD: Operations Research Office, Johns Hopkins University, 1956), 197-98, 313.} But these men received basic training in individual skills only. They did not change fundamentally the combat effectiveness of the Korean army. After several back-and-forth campaigns against the Chinese and North Koreans, Eighth Army finally arrived at a defencible position known as Line Kansas. It was from here that negotiations to end the war began in July 1951. Lt. Gen. James Van Fleet now commanded Eighth Army, General Matthew Ridgway having replaced MacArthur following the latter’s relief for insubordination.
Van Fleet was a dynamic soldier and leader. He understood that the fate of Eighth Army hinged on the combat abilities of the Koreans. The former commander of the successful American advisory mission to Greece, Van Fleet knew what he wanted to accomplish to make the Korean army a full partner in the war. He told US army chief of staff General J. Lawton Collins in June 1951, ‘I plan to supervise the ROK Army through three principal departments of KMAG: one will be schools and basic training; another will be field training of units up to division size; and the third will be ROK Army frontline operations.’ True reform of the South Korean army began with a key personnel decision when Van Fleet requested the assignment of Brig. Gen. Cornelius E. Ryan to be the chief of KMAG. The ripple effects of this decision were decisive. Ryan transformed KMAG into a first-class military training and advisory mission. Under his direction, KMAG opened a series of new training centres that laid the basis for the leader and organisational reforms needed to make a Korean army capable of fighting the Chinese on more equal terms. Van Fleet, more so than Walker or Ridgway, granted his KMAG chief wide latitude and support while expecting Ryan to leverage KMAG’s increasing influence and cooperation with the Korean chief of staff to make an army that was more resilient and capable.

An unremarkable and overage infantry officer who never held a combat command, the fifty-four year old Ryan possessed one quality that Van Fleet could not do without: he was an accomplished trainer of troops. Until Ryan’s appointment to KMAG, he commanded the 101st Airborne Division (Training) at Camp Breckenridge, Kentucky, which had fallen under Van Fleet’s continental-based Second Army. In April 1951, Ryan received a personal commendation for being cited by a congressional review of army training centres that found Ryan’s command superior in making do with less than adequate resources. He was the man for the job in Korea.

Keeping with Van Fleet’s desire to improve combat performance, Ryan developed a centralised, combined arms training centre by consolidating the various army schools and training centres at a site near the southwestern city of Kwangju, christened the Korean Army Training Center (KATC). The KATC began operations in November

56 James A. Van Fleet to J. Lawton Collins, June 13, 1951, Correspondence—Alphabetical, Collins, J. Lawton, Box 68/17, Van Fleet Papers, George C. Marshall Library and Archives, Virginia Military Institute, Lexington, VA.

57 For Ryan’s background and KMAG’s organisational reforms, see Gibby, The Will to Win, 179-84. Ryan’s counterparts were Maj. Gen. Lee Chong-chan and Lt. Gen. Paik Sun-yup.

58 Van Fleet received both a newspaper clipping extolling Camp Breckenridge’s organisation and efficiency and a copy of Taylor’s commendation from the Eighth Army Chief of Staff. Correspondence—Alphabetical, Ryan-Ryle, Box 71/50, Van Fleet Papers, George C. Marshall Library and Archives.
1951 and was capable of supporting fifteen thousand troops in training. It reduced duplication of administrative and logistical requirements and had plenty of space for manoeuvre training, which became critical when the Korean army began to activate additional artillery and armour units. As importantly, the new Korean army chief of staff, Maj. Gen. Lee Chong-chan, found energetic leadership for the KATC. US and Korean officers together turned the KATC into the vanguard for the army's tactical adaptation and organisational expansion. Combat-experienced Korean instructors and cadres, supervised and assisted by 131 American officers and enlisted men, made the KATC an essential training and army organisation centre. For the first time in the army's history Korean soldiers and officers experienced realistic training with modern equipment and under challenging tactical training conditions.59

What the KATC did for new soldiers and officers to train them in modern warfare, the Field Training Command (FTC) did for units already committed to the front. Van Fleet wanted to rearm, rehabilitate, and retrain Korean divisions through a comprehensive training and reorganisation that would take place immediately behind the front, conducted in each corps's rear area, and supervised by KMAG.60 The slackening pace of combat operations beginning in the summer of 1951 enabled Van Fleet to risk rotating Korean divisions out of the line for two months of remedial training.

Van Fleet appointed Brig. Gen. Thomas J. Cross, then deputy commander of the US IX Corps, to be both the commanding general of the Field Training Command and one of Ryan’s deputy commanders.61 Cross had previously served with Van Fleet and had significant combat experience in Europe as a division chief of staff and regimental commander.62 To carry out his broad mission to retrain every Korean division, his specific responsibilities extended to establish a high standard of instruction, supervise the construction of appropriate training facilities, prepare subject schedules and outlines in the master training program, conduct


60 Headquarters, Eighth United States Army Korea, Command Report, July 1951, Section I Narrative, 73, Army – AG Command Reports, 1949-1954, RG 407, NARA II.


reconnaissance and select final training areas, establish ammunition requirements, and determine advisory personnel requirements. He tackled this project zealously, initiating the effort to establish Field Training Center 1 in the US I Corps sector on August 4, less than one month after Van Fleet’s decision. Within ten days, with construction already progressing rapidly, Cross’s assembled staff had organised their training materials and was ready to receive the first unit. Dedication ceremonies took place on August 13, and the ROK 9th Division began training on August 18. Three more field training centres stood up in quick succession, one for each frontline corps. Van Fleet directed every Korean division to go through the nine-week program (later reduced to eight weeks), where they received replacements, replaced worn equipment, and (most importantly) received new artillery battalions, along with signal, transportation, and engineer companies. In short, the FTC was Van Fleet’s means to turn the Korean divisions into modern fighting units.

Only after satisfactorily completing all training tasks, which culminated in a battalion-level field problem supported by regimental and division command post exercises, were Korean divisions reassigned to the front. According to Paik Sun-yup, this field retraining program likely did more to save the Korean army than anything else done by the Americans. He noted divisions that completed this remedial training typically reduced casualty and equipment losses by fifty per cent over their untrained counterparts. These same units also ‘revealed an élan and confidence quite superior to what they had shown before going through the training’.

Paik’s opinion is borne out by his army’s improved combat showing throughout 1952. Although fighting under tremendous Chinese pressure at places like Finger Ridge, Capitol Hill, and White Horse Mountain, South Korean troops proved their mettle. They never broke, they often counterattacked successfully, and they usually retained their positions, sometimes enduring days of artillery and mortar shelling, punctuated by nighttime infantry assaults. It was a different army compared with that of 1950-51. As a consequence of the Koreans’ improvement and their much

63 KMAG Information Brochure, Section V ‘Training’, Field Training Command, 1, Van Fleet Papers.
64 Myers, Wartime Experiences, 133; Paik, Pusan to Panmunjom, 162.
65 August 12 at Yangyang (ROK I Corps), August 25 at Yanggu (US X Corps), October 4 at Sachang-ri (US IX Corps).
66 Field Training Command, Unit Histories – Korean Military Advisory Group, Records of Interservice Agencies, Records of Military Assistance Advisory Groups, Record Group 334, NARA II.
67 Paik, Pusan to Panmunjom, 162.
reduced casualty rate, KMAG was allowed to gradually expand the army by adding two new infantry divisions by January 1953.68

The 12th and 15th Divisions had radically different experiences from those raised or reconstituted in the first year of the war. Several factors account for this condition. KMAG and the Koreans had acquired more than a year's worth of experience in organising and training new units. Korean leadership was also dramatically improved and Korean officers were now accomplished trainers and administrators in their own right, which allowed KMAG to focus less on supervision and more on the technical problems of army expansion. Lastly, KMAG recognised that divisions required a period of time for combined-arms training at a centralised location, along the model established at the FTC. For this purpose, KMAG retained control of FTC 2 and on 1 July 1952 renamed it the Unit Training Center (UTC) to reflect the emphasis on training new units.69

The early history of the ROK 12th Division illustrates the critical role KMAG advisors continued to play to create battle-worthy divisions. Lt. Col. Stewart F. Yeo, the division's senior advisor, reported to the UTC on 12 November. The division commander, Brig. Gen. Yoon Chun-koon, promptly greeted and welcomed him to the unit, immediately establishing the critical bond between counterparts. This made a great impression on Yeo.70 As with all successful KMAG-Korean enterprises, the partnership between Yeo and Yoon was a cooperative one. As Yoon's 'shadow', Yeo went everywhere the division commander did. After Yoon addressed the division's soldiers he always turned to his senior advisor and expected him to speak some words of encouragement as well. Although Yoon was above average age (forty) for his rank and position as a Korean officer, he impressed Yeo 'as a man of character and as a leader. I never had occasion to change my opinion', he later reflected.71 Yoon proved capable of building a fresh fighting team from new soldiers and some veteran cadre, and training them to be capable of immediate combat operations. After the war Yeo wrote, 'My opinion of the ROK combat divisions … is that when given adequate training and the same amount of artillery, tank, mortar, and air support which US combat divisions normally receive, they will fight as well as American troops.'72

68 See Gibby, The Will to Win, especially chapters 8-9, for analysis of the ROKA's expansion and its increasingly effective combat operations from the summer of 1952 until the armistice.

69 KMAG-ROKA Information Brochure, Unit Training Center, 28 February 1953, 12 March 1953, Organizational History Files, KMAG, U.S. Army Pacific, Records of U.S. Army Commands, 1942-, Record Group 338, NARA II.

70 Stewart F. Yeo, 'Service in Korea, 12 December 1951-8 March 1953', 1, Senior Advisor 12th ROK Division, US Army Heritage and Education Center, Carlisle, PA.

71 Ibid.

72 Ibid., 11.
In an effort to close the cultural divide while giving Korean leaders valuable technical and tactical education, KMAG restarted a prewar initiative to send promising officers to US Army schools for infantry and artillery training. KMAG welcomed the return of these officers to the army’s training establishment. In addition to improving their English language skills, these officers ‘had a distinctive élan, presented a positive attitude, reflected confidence, and were dedicated toward the improvement of the ROK Army’. By the end of the war, nearly 600 Korean officers graduated from US army branch schools.73

A no less vital characteristic behind KMAG’s reform effort was the quality of its people and the advice they gave. By 1952, KMAG was getting more opportunity to select inbound officers for advisory duty. In some cases, KMAG could act heavy handedly as these officers found themselves suddenly diverted from ordinary unit assignments to ‘special’ assignments as advisors, especially in the new ROK training establishments. Colonel Thomas D. Gillis was not impressed with his KMAG levy, being diverted to ‘a more important job than the one scheduled’ for him.74 He reluctantly assumed his post as the chief of a field training centre. He had no way of knowing at the time, but the success of this command did more to increase the military potential of Eighth Army than anything he could have done as a deputy assistant division commander.

Colonel Richard G. Stilwell, who eventually rose to four-star rank and commanded all American and Korean forces from 1973-1976, commanded a regiment of the 3rd Infantry Division for five months before being reassigned as the senior advisor to the ROK I Corps. When he asked whether the Eighth Army commander might possibly change his mind, he was informed ‘that would be impossible’. Stilwell reported to the ROK I Corps headquarters and soon found the experience proved valuable not only for him, but also for his Korean counterparts who learned from his aggressive leadership style, professional competence, and personal example.75

73 Myers, KMAG’s Wartime Experiences, 172-180 (quotation, 179). See also the poignant memoir, Hurh, Won Moo, I Will Shoot Them from My Loving Heart (Jefferson, NC: McFarland & Company, Inc., Publishers, 2012). Lt. Hurh was a teen-aged soldier trained in Korea and the United States as an artillery officer. During the last Chinese offensive (July 1953), he was the de facto commander of the ROK 76th Field Artillery Battalion, responsible for 600 soldiers and 8 howitzers. He was barely 20 years old.


One aphorism from KMAG’s leadership was: ‘The ROK officer is as good as the counterpart advisor is competent.’ The success of counterpart mentorship hinged on the professional experience and competence of the advisor. More training, troops, and artillery had little value if the advisor could not help Koreans grasp how to use them. It was the advisor’s place was to teach them on the job. Some worked exceptionally, and their Korean counterparts recognised it. Chang Do-young, commanding general of the ROK 6th Division, was so impressed with one of his KMAG advisors (a captain) that he wrote him a personal note: ‘I am deeply appreciative of your fighting and teaching our Korean army … as a Korean soldier. So I will try more and more to build our army, that [it] becomes more valuable because of your efforts … [sic]’

Advisors who made efforts to accommodate themselves to Korean language, manners, and customs quickly learned the secret for a productive relationship with their counterparts. Professional courtesy and genuine friendship, along with a willingness to respect the judgment of the Korean officer, could carry an advisor far when hard advice was required. Furthermore, the Americans were attempting a cultural as well as military transformation among their counterparts. Advisors had to showcase western military values without direct equivalents in Korean culture, such as willingness to learn from the advisor’s experience, flexibility, and self-correction. In the process nearly every advisor had to engage and come to terms with the unique trait that vastly complicated the counterpart relationship: ‘face’.

76 Alfred H. Hausrath, *The KMAG Advisor: Role and Problems of the Military Advisor in Developing an Indigenous Army for Combat Operations in Korea* (Chevy Chase, MD: Johns Hopkins University, 1957), 25. Sixty-nine per cent of KMAG veterans surveyed (255) considered combat experience as the number one indicator for potential success as an advisor, followed closely (65%) by command experience above the company level.

77 Lowry, *Korean Idyll*, 208. Captain Lowry also received a formal letter of commendation from the ROKA Chief of Staff, Lee Chong-chan. Lowry may have been exceptional, but his attitude was common among the most successful advisors. He remembered, ‘I left Korea proudly knowing that my services there were greatly appreciated, and, I cannot close this narrative without paraphrasing a comment made by Will Rogers—I never met a Korean I didn’t like (original emphasis).’


79 Trammell, ‘Korean War Notes’, 17. The Americans also struggled to reduce the level of sanctioned corruption among officers and senior NCOs. Army pay was shamefully low, such that often insufficient rations for the troops or their families occupied many an officer’s time and unit supply and transportation to support ‘public welfare projects’. In reality these were self-contracting business enterprises run by the army to earn income. Hurh, *I Will Shoot Them from My Loving Heart*, 106, 119-20; Paik, *Pusan to Panmunjom*, 212.
Face was a Korean sentiment encompassing personal prestige, honour, and reputation: ‘purely a question of that compound of pride, self-respect, and vanity’. Face touched upon social status, perceptions of power, and Confucian hierarchical values. Any advisor who caused his counterpart to lose face was on a fast track to failure. Sometimes, issues of face led to humorous situations that illuminated the potential for frustration between the different cultures. Major Howard A. Trammell recalled:

I used to get filter cigarettes for [Colonel] Choi. One time he lit one of them, but lit the filter end by mistake. I pointed this out to him and he replied, ‘That’s the way I always smoke them’ and he proceeded to do so. He didn’t want to admit in front of his driver and the interpreter that he had goofed.

This same reluctance to admit mistakes or to relay bad news rankled the Americans, particularly when the stakes more than trumped misplaced vanity. Some advisors accused Korean officers of supplying misinformation to avoid losing face with superiors or their counterpart, or refusing to change or modify orders, lest their original judgment be suspected of being wrong.

In this environment effective criticism was always rendered in private. One advisor indicated that he had success by maintaining formality at the command post while at the ‘hooch’ he was free to be more direct. In this way, the Korean officer would not feel pressured to be correct in front of his subordinates. He could extend his own ability, confident that any criticism would come at the end of the day and in private. The shrewd advisor recognised opportunities with social and informal contacts to build mutual respect. In this way, a relationship of trust developed that permitted a Korean officer to ask for advice on a professional level without being ashamed or feeling inadequate.

Some advisors were not cut out for this duty. The most common complaint was professional incompetence. One advisor went through four Korean counterparts. The last one demanded exoneration through courts-martial. At the trial, the advisor

81 Trammell, ‘Korean War Notes’, 17.
82 Sawyer, *Advisors in Korea*, 65.
83 Sometimes advisors learned that occasionally ‘the Korean way was best’, and spared themselves the trial of trying to repair their relationship just to demonstrate superior knowledge: Hausrath, *The KMAG Advisor*, 48.
84 Ibid., 50.
emerged as one who could not adapt US training and doctrine to the Korean conditions; furthermore, he had a reputation for failing to get along with Koreans generally. KMAG swiftly reassigned the advisor to an administrative position and recommended the retention of the Korean commander. Fortunately, most Americans demonstrated early their professionalism and commitment to the counterpart partnership. As a result, most Korean officers had a high opinion of Americans in general, especially those who followed the example set by men like Hausman. They trusted these men, even if they did not always follow their counsel. It could only be on this moral basis of trust that Korean officers would allow foreigners so much latitude to make their army.

An example of how this moral foundation operated comes from the ROK 1st Division during the winter of 1952-53. Major Trammell recalled the only serious disagreement with his counterpart, which occurred during a Chinese night attack soon after Trammell’s arrival at the unit. In the frantic atmosphere of the regimental command bunker, Trammell’s interpreter could not keep pace with the battle, which forced Trammell to query Colonel Choi directly. Choi pointedly ignored him the entire night. Trammell had already served several months as the division’s G2/G3 advisor. He fumed but recognised how he handled this situation would make or break the relationship.

The next day, Trammell packed his jeep, and

Choi came up to where I was. I told him what I was doing [leaving] and pointed out that, unless I was kept informed, I could not do the job I was sent up there to do, and for which he had personally [requested] me. From that day forward, Choi and I, to borrow a British term, got along fabulously.

In situations where cultural differences and interpersonal conflict constantly threatened to wear away at the advisory relationship, the best advisors found persuasion and coaching more effective mentorship tools than peremptory guidance (‘orders’) or open criticism. It was important to demonstrate respect for the counterpart’s rank and position while still being candid and forthcoming with suggestions and advice. Anything the advisor could do to reaffirm his commitment to the partnership made

85 Ibid., 28.
87 Trammell, ‘Korean War Notes’, 11.
the Korean counterpart more receptive to the advice given, which after all was the advisor’s purpose.88

And here is the difference between the two advisory missions, before and after 25 June 1950. Prior to the war, William Roberts was a hands-on chief and believed that hands-on advisory work was best. He assumed that credibility would only have influence if exercised in person, and Roberts aggressively pushed the individual relationship between advisor and counterpart. He told an assembled group of officers: ‘[G]et under the skin of your counterpart—get his confidence by your honesty, your ability, your guidance.’89 Roberts expected his advisors to make a virtue out of necessity and do most of the thinking for the Koreans. In an August 1949 memorandum he wrote, ‘Whenever a hot spot [incident] highlights the operations and training [activities] in a division zone or area, I expect the senior advisor to go into action’ and see to it that Korean officers ‘milk’ the incident dry of its training value.90 He demanded his advisors pay ‘great attention to the smallest detail’ and get out with the troops to ‘sneer at their parade ground tactics’.91 He expected his men to direct even basic tasks, such as determining patrolling techniques, maintaining accurate intelligence and operations situation maps, reporting to higher command, and exercising personal leadership. Emblematic of his insular view, he noted that the best advisors kept good notes, shared information with fellow advisors, and were sure to ‘prevent mistakes’.92

In June 1953, after many years of experience in the trade of organizing, training, and mentoring, KMAG published the Advisor’s Procedure Guide (APG), a comprehensive document that replaced the original Advisor’s Handbook Roberts issued in 1949. The APG showed how much the Americans had absorbed in their cultural adaptation with the Korean army:

Living, working, fighting and training with a regiment, an Advisor must be acquainted with every phase of the regiment’s operations. He must be abreast of the tactical and logistical situation. He must know

88 Hausrath, The KMAG Advisor, 48-50.
91 Advisor’s Handbook, 10.
the strong and weak points of the command and [its] subordinates. It is upon him that the [Korean] regimental commander depends for knowledge that will teach him teamwork in the employment of infantry, artillery, air, signal communications and armor in combat operation and of the various services in support of the same. He must criticize their mistakes without causing them embarrassment or ‘loss of face.’ He must teach them economy without seeming to deprive them of their needs. He must hold them to proven military methods and standards while still applauding their improvisation and, last but not least, he must do these things with a view toward building their confidence [to think, decide, and act on their own] (emphasis added).93

KMAG as an organisation had finally grasped the complexities and nuances involved in the process of advising and supporting a foreign army. In 1950-51, officers in the ROK Army probably responded to advice given more directly, in the Roberts style to ‘prevent mistakes’. By 1953, however, the power relationship between counterparts had shifted to one more equitably based. The Koreans were better trained than before, with many officers having graduated from American infantry, artillery, and the command and staff training schools. They were battle hardened and had as much, or even more, combat experience than their advisors. Advisors had to work harder to establish a basis of rapport with the counterpart — it was more important now to win his confidence, respect, and trust than to ‘prevent mistakes’. In such a relationship, the advisor would be in a stronger position if his counterpart would want to seek and accept advice. In this new state of affairs, advisory excellence had approached cultural compatibility and become institutionalised instead of contingent upon individual advisors.

The American advisory experience in Korea illuminates some core truths. First, personnel decisions matter. Having the right people with the right skills paired to the right mission is crucial. Ryan successfully negotiated with Van Fleet to allow KMAG selection priority for high-potential and combat experienced officers. Van Fleet agreed, and the top tier of Eighth Army’s colonels and lieutenant colonels typically commanded US regiments and battalions for six months before moving to KMAG. This agreement was a prime determinant of KMAG’s training successes in 1952-53.94 Second, institutional support must be genuine and visible. Van Fleet ruthlessly cut through his own Eighth Army’s bureaucracy to give Ryan the support and personnel

93 Quoted in Hausrath, *The KMAG Advisor*, 23.
94 Ibid., 26.
he needed. When Ryan arrived in Korea, KMAG’s manpower authorisation was 920; three months later it rose to 1308, and by January 1952, the number had risen again to 1953, not including an additional 900 officers and men Van Fleet detached from Eighth Army on three month rotations—a 200 per cent increase in six months. And woe to the staff officer who tried to stonewall KMAG. Captain John B. Blount, Ryan’s aide-de-camp, recalled an incident early in Ryan’s tenure when the KMAG chief of staff, Colonel Richard W. Mayo was arguing over the phone. Mayo lost his patience and erupted: ‘Wait a minute, do you know who you’re talking to? You’re talking to Colonel Mayo and I’m the chief of staff of KMAG, and I want this done, and I want it done now. Do you understand?’ General Ryan, who overheard Mayo’s side of the conversation, reacted by saying, ‘Looks like we’re on the right road’. Blount calls this episode symptomatic of KMAG’s turnaround within Eighth Army’s command.

Finally, advisors needed structure and guidance. Where no doctrine existed, it had to be invented, authoritative, and enduring. The counterpart system emerged from a doctrinal void. Roberts understood this, and getting it right, he gave his successors the opportunity to be successful. The various iterations of the Advisor’s Handbook (1949, 1951) and the Advisor’s Procedure Guide (1953) codified best practices and gave new advisors a higher starting point on a steep learning curve.

Organisationally, the command relationship between Eighth Army and the Korean army was just as crucial. The Americans enjoyed moral and persuasive power that future advisory efforts such as in Vietnam, Iraq, or Afghanistan did not. The fact that American commanders exercised operational control of Korean divisions and corps and their training centers invested the advisor with tremendous vicarious authority. This was a great advantage to make the counterpart system work synergistically to overcome cultural friction points and disparity in military capabilities.

95 Eighth Army, Special Problems, 31.
From 1946 to 1953, advisors coached, mentored, and demonstrated, but eventual success was based more broadly on the KMAG initiated training and organisation of individuals, units, and combined arms formations; reform in the selection, education, and training of officers; and, organisational modernisation and expansion that gave the Koreans more punch on the battlefield. It was the mutual interaction inherent in the counterpart system that produced an army capable of meeting its enemy on more equal terms. Unfortunately, this achievement was accomplished locally through the vision and determination of Eighth Army’s field commanders. The American army at large did little to identify, select, or prepare officers or enlisted men to serve with KMAG or to retain their skills. In that sense, the American army failed to institutionalise its advisory experience, with negative consequences for future missions.

George C. Marshall reportedly counselled Lt. Gen. Joseph W. Stilwell, assigned to advise and train the Chinese army in World War II, ‘All I can say is to develop more of patience and tolerance than is ordinarily expected of a man and much more than is your constitutional portion’. Being an advisor is no easy task, but the Americans in Korea proved it could be done. Despite extremely trying conditions, American advisors successfully developed fighting capability in the Korean army and guided it to effective performance in combat. After two years of reform and reorganisation, the South Koreans did not have to substitute courage for firepower, or rely on what Roberts would have scornfully called ‘Japanese methods’ in place of solid training and competent leadership. Modern war was not beyond their grasp, they just needed someone who was willing and able to show them how to do it.

The Pacific Islands: Using Indigenous Resources in Wartime

Judith A. Bennett

... we are fighting enemies who beat the world at squeezing what they want out of occupied territory. We must husband what we have, not only avoiding waste, but also by the maximum utilization of local resources.¹

By mid-July 1942 when this statement appeared in an instruction manual for the building of US bases, the military had realised that they faced two major challenges in opposing the Japanese advance in the southern Pacific islands: vast distances and inadequate infrastructure. Supply lines to the front were longer than in any other theatre. In terms of distance, the extended lines of communication for the US forces ranged between 10,550 kms from San Francisco on the west coast and 14,500 kms from Boston in the east to coastal Papua and New Guinea (PNG). For the Japanese, the distance from Tokyo across the Pacific to coastal PNG, though shorter, was almost 5000 kms. Even the Australians, with New Guinea on their front doorstep, found that distance was not the sole challenge. Once men or matériel reached the unloading area by ship, they needed to be housed and distributed.

Within much of the tropical South and Southwest Pacific theatres there was little, if any, infrastructure, with the exception of Fiji, New Caledonia and around the small administrative centres such as Port Moresby in Papua or Apia in Upolu, Samoa. Islands with few wharves, very limited warehouse capacity, scant housing, no railways, and, with few exceptions, almost no roads and few vehicles had to accommodate one of the biggest military forces that they had seen. The ocean was the main road to shift goods yet some coastal seas particularly in western Melanesia (see Map 1) were uncharted and treacherous; on land, supplies were carried on men's backs,

airedropped or, once airstrips were built, flown in. With such lack of a substantial built environment, had the armies fighting the Pacific war had to rely solely on what they brought with them and their own personnel, the war may well have dragged on longer than 1945 and proven even more costly of ‘blood and treasure’.

The US forces realised the challenges they faced very early. In fact, they began to understand this before the war with Japan started. US strategists judged Japan would make war against the United States around the end of the Asian monsoon season (June to August-September) of 1942. Since Japan controlled and was fortifying its Mandated territories of Micronesia, it could then block US access to the American colony of the Philippines. The normal American air route from San Francisco via the US possessions of the Hawaiian Islands, Midway, Wake and Guam on to Manila, ran too close to these Japanese possessions for comfort. So in October 1941, the United States began to construct a series of airstrips further south across the Pacific to avoid the Japanese Mandated islands and to provide airfields capable of taking B-17 bombers. Prior to this, almost all aircraft within the oceanic region were flying boats with sea landings.

Map 1: The pacific theatre, showing the extent of the Japanese advance and the geographic areas of Melanesia, Micronesia, and Polynesia.
The proposed ‘Air Ferry’ route was designed to connect San Francisco with Sydney via Hawai`i, Christmas Island, Canton Island, Viti Levu (Fiji) and New Caledonia. While relatively few major problems occurred in Fiji and New Caledonia in terms of labour and basic equipment, the US civilian engineers faced challenges on distant, often uninhabited atolls. At one stage when US army engineers joined the operation with non-indigenous civilian workers for isolated Canton and Christmas Islands (see Map 5), they faced a rebellion because conditions and the heat were so trying. All equipment had to be barged or shipped in. When it finally was in place the construction of airfields created more challenges. The heavy B-17 bombers required a very tough surface for landings and take-off. On the atolls, there was neither asphalt nor cement so these materials either had to be shipped in or a substitute found.

One of the Army engineering units decided to try the plentiful coral to surface airfields, since it was similar to limestone in chemical composition. Once crushed, rolled and then watered with sea or fresh water, it solidified and could carry aircraft or road traffic. When it dried out, however, it tended to become powdery and blew away so it had to be resurfaced, kept moist or, more long term, topped with a sealant such as tar, asphalt, or molasses mixed with water, though late in 1942, several high use areas were reinforced with sheets of interlocking steel Marston matting. While not all the airfields were complete before the Japanese bombed Pearl Harbor in the Hawaiian Islands on 7 December 1941, this surprise attack spurred on construction. As the Japanese advanced south-east, yet another network of Allied airfields was constructed further south to connect Hawai`i via Christmas Island, Penrhyn (Tongareva) and Aitutaki in the Cook Islands, Tonga, Norfolk Island and on to Sydney.²

The hard-earned experience garnered throughout the Air Ferry route project ‘developed management techniques, construction materials, and innovative procedures’ that were used when the Allied campaign moved further west and north.³ Those who followed were told, ‘You have to send everything. The only thing you get out there is coconut trees and sand … it is as much an engineer’s war as it is a supply war.’⁴ Yet after bases extended beyond coral atolls to high islands such as Fiji, New Hebrides (now Vanuatu) and New Guinea, more diverse resources became apparent:

⁴ Roderick, 19 December 1942, cited in Report, The Corps of engineers in the South Pacific, c. 1945, entry 477, RG 407, National Archives and Records Administration, College Park, Maryland (hereafter NARA).
'Each island has its own special materials and methods; take advantage of them—when in Fiji do as the Fijians do.' Even though much heavy equipment needed often to be brought in for engineering work, where ever possible local materials and people could fairly rapidly provide the backing for the war effort with far less expense and shipping required for the extended lines of supply from the United States.

**Unity of Command**

The Allied forces in the Pacific agreed to overall control by the United States military. There were tensions at times among the Allied military, for example between Australia's Blamey and America's MacArthur over New Guinea as there were between the US navy and army leadership. In the main, relations between the colonial authorities and the US forces were co-operative. Although the French military involvement in the Pacific war was negligible, there were some disagreements in New Caledonia between the French colonial authorities and the US military, on matters such as quarantine regulations against the possible importation of pests such as cattle ticks on cavalry horses and the rude behaviour of some US personnel towards women in Noumea. The unity of Allied command meant that civilian authorities generally assisted wherever possible to find resources for the military so long as it did not endanger the local people or undermine their means of subsistence. Sometimes, however, close to the front lines, pressure on local people tended to strain these limits.

**Timber**

Anticipating filling their ships to cross the Pacific with timber, American logistics specialists calculated that for bases in the region, about 30,000 board feet (79 cubic metres) of timber were needed per 1000 men during the first four months of occupation, and about 4000 board feet (9.3 cubic metres) per month to the end of the operation. Logs and timber are bulky so the military sought to use as much local timber as possible to save shipping space and to conserve domestic supplies.

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5 ‘Build with Native materials’, April 1943, Box v. 3248, E.N19, RG 313-58-3777, NARA, SB.

6 Though there was agreement among the Allies in the Pacific the division within the US forces under MacArthur (Army) and Nimitz (Navy) meant US strategies were not as unified as they could have been. Phillip S. Meilinger, ‘Unity of command in the Pacific During World War Two’, *JFQ: Joint Force Quarterly* 56:1st Quarter, 2010. http://www.intelros.ru/pdf/jfq_56/25.pdf


8 Haseman, Analysis of timber requirements and local production, 21 June 1944, Entry 305C, RG 77, NARA.
With the exception of Fiji, parts of New Caledonia and a couple of pockets in east New Guinea, relatively little information existed about the varieties of timbers and stocking levels in the islands. In terms of timber qualities relating to load bearing and durability, little was known about indigenous timbers except for a few high value ones such as kauri (*Agathis* spp.) and *Callophylum* spp. that had a small export market into Australia pre-war. At that time, the bulk of timber for European-style construction in the islands was imported: *Eucalyptus* hard wood came from Australia and Oregon pine (*Pseudotsuga menziesii*) and redwood (*Sequoia sempervirens*) came from the west coast of north America. Surveys were urgently needed but were not easily done under wartime conditions. Many species still remained to be classified botanically. Clearly, given the region's geography and vast spread of islands that inhibited the distribution of seeds via specialised bird species or by floatation, there were fewer varieties the further away to the east one went from New Guinea. Stands too tended to be scattered and mixed. Thus there were fewer species in Samoa and even fewer in Tonga as compared with Fiji. Military forestry and logging units gleaned what information they could from local people and European settlers, but learned usually by trial and error. A few species were well known to locals for their resistance to rot and borer, such as *vasa* (*Vitex cofassus*), and these were put to use to build wharves. The likely duration of conflict and a mobile front indicated that most timber would be needed for a relatively short time of six months to two years so saw millers gambled that what they milled would serve most purposes.

All island bases saw a demand for timber for military construction, dunnage and packing. Since roads to the interior were virtually non-existent even in Fiji, the vast bulk of timber had to be logged on small islands or along the coasts of larger ones. This is evident in the distribution of mills in PNG (Map 2). These were on the coast except for a few near major bases in the interior around the pre-war mining settlement of Wau and the plains of Markham Valley west from Lae (see Map 2).

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9 [Oliver], Tahiti survey, 15 May 1943, Foreign Economic Administratin (hereafter FEA) sample program, c. December 1944, Entry 173, RG 169, NARA; Frank, FEA activities in the British Pacific Island colonies, 10 October 1944, British Empire Geographic file, RG 16, NARA; Burton to Blandy, 10 March 1944, Western Pacific High Commission (hereafter WPHC), New Hebrides British Series (hereafter NHBS) MP 21/4, Western Pacific Archives (hereafter WPA).


12 A. M. Healy, *A History of the Development of the Bulolo Region, New Guinea* (Canberra: Australian National University, 1967), 113; Wright, Lumber to advanced base, 24 April 1943, and enclosures, Entry 305C, file 192, RG 77, NARA; Robinson to Teale, 21 July 1943 and enclosures, Entry 345, RG 77, NARA.
Overall, Papua and New Guinea’s timber contribution to the Allies was at least a third of their needs. The Americans felled and milled about 63 per cent; the Australian Infantry Force (AIF) about 20; the Australian New Guinea Administrative Unit (ANGAU) about 12, and the Royal Australian Air Force (RAAF) around 5 per cent.\textsuperscript{13} In terms of ship-carrying tonnage the production of 71,778,749 board feet (167,483.7 cubic metres) from New Guinea saved about 204,857 tons; in terms of cost of freight from nearby Australia, it saved about £A3,072,847; in terms of cost of the equivalent timber volume in Australia, it saved around £A1,707,142.\textsuperscript{14} For the US, the greater distance would have increased the cost in ship’s fuel. The contribution of the Solomon Islands timber resource was proportionately as great. In Fiji, the New Zealand engineers reckoned that the use of local timber reduced their costs by one-sixth. In these rear areas beyond New Guinea and Solomon Islands—Fiji, New Caledonia, the New Hebrides, and Samoa (see Map 1)—the total timber milled probably reached a very conservative 14,000,000 board feet, a considerable saving in

\textsuperscript{13} ANGAU consisted of former administrative officials, mainly former district and patrol officers who then became members of the armed forces. What was novel was that it replaced the formerly separate yet both Australian administrations of the mandate of New Guinea (northeast) and the Territory of Papua (southeast).

\textsuperscript{14} Steele, memo, 5 November 1944, NGFR, 1 CRE, AWM 5/32/2 (1943-1945), Australian War Memorial Archives, Canberra (hereafter AWM).
shipping space to the Allies. This did not include many hundreds of coconut palms used for corduroy roads in swamps, supports for buildings, and for reinforcing air raid shelters and trenches. Similarly, thin poles and lengths of bamboo for temporary structures were not included in such counts.\textsuperscript{15}

\textbf{Aggregates and Coral}

Civilian authorities little questioned coral extraction for airstrips and road surfacing on uninhabited atolls but it often was intensive on key islands where there were local people living.\textsuperscript{16} Though localised, the effects of this endure to the present day. Atoll islands such as Tarawa (now in Kiribati, formerly in the Gilbert Islands) and Funafuti (now in Tuvalu, formerly in the Ellice Islands, see Map 5) lost many thousands of coconut palms and \textit{babai} or \textit{puluka} (\textit{Cyclosperma chamissonis}, a root crop) pits dug in the coral to tap the fresh water lens. These were filled in and consolidated for airfield construction. On Funafuti, the US extracted coral from ten borrow pits leaving craters that affected the fresh water aquifer, and soon filled with saline water, damaging the surface of eight acres out of 260.\textsuperscript{17} Some fetid borrow pits are only just now being filled since the population is now so great,\textsuperscript{18} at almost eighteen times it was on the eve of war, making habitable land a premium, particularly with rising sea levels.\textsuperscript{19}

On Penrhyn (Tongareva) in the Cook Islands (see Map 1), the in-fill for the airstrip needed one million cubic yards of coral. An entire lagoon islet and part of another were removed to supply this and the coconuts growing there destroyed.\textsuperscript{20}

\begin{itemize}
\item \textsuperscript{15} Oliver A. Gillespie (ed.), \textit{Pacific Pioneers} (Wellington: A.H. and A.W. Reed, 1945), 41; The Corps of Engineers in the South Pacific, c.1946, Entry 477, RG 407, NARA.
\item \textsuperscript{16} Prior to the war the US and British governments jointly claimed several small islands as their territory. Canton, Christmas and Funafuti were in this category, so ultimate control was not clear in the early stages of the war. Peter McQuarrie, \textit{Strategic Atolls; Tuvalu and the Second World War} (Christchurch and Suva: Macmillan Brown Centre, University of Canterbury, and Institute of Pacific Studies, University of the South Pacific, 1994), 143-4.
\item \textsuperscript{17} McQuarrie, \textit{Strategic Atolls}, 39.
\item \textsuperscript{20} Morgan to Resident Commissioner, n.d., ca. February 1944, IT 122/5/2, Part 1, National Archives of New Zealand, Wellington (hereafter ANZ).
\end{itemize}
Often too the US Seabees (Construction Battalions) and Army engineers dug up coral from the lagoons. In some cases this was for in-fill but sometimes to clear access channels for shipping, with little regard for the tidal flows and fishery.21

Aggregates included rip rap or gravel and sand which was found on some high islands. Gravel for road and airfields came usually from riverbeds or borrow pits.22 Near the front in, say, New Guinea these were taken as needed but since the front was mobile, no one area suffered extreme loss with rivers soon filling up with gravel washed down from the hills.

Food Gardens and Fisheries

Allied forces were generally well supplied with rations by their respective governments but such food was processed, canned or dried and soon very boring for men far distant from the domestic hearth. In some environments, however, these plentiful rations seemed insufficient to provide certain vitamins.23 Both the American and Australian forces had various systems set in place to provide fresh fruit and vegetables for their men, especially for those recovering from sickness and wounds in hospitals. The most common way to get fresh food was trade with local people, especially for fruit. The danger here in the eyes of the colonial administrations was that subsistence villagers were not producers of surplus and could be tempted by traded items or money into depriving themselves of badly needed food. Happily in terms of the health of the indigenous population, almost all their staples—yam, taro (dalo), and, in some areas, plantain and sago—had little taste appeal to the occupiers, though sweet potato (kumara) was acceptable. Officials did their best to regulate sales by local people but were not always successful.24

The US Bureau of Economic Warfare (BEW) and a related agency, the Foreign Economic Administration (FEA), assisted the establishment of a range of food gardens, ranging from distributing seeds and tools among small units to major plantings under military control with local labour or, as often in Fiji and New Caledonia, by contract with local farmers mediated by the colonial administration. In 1944,

21 Richardson, Army Corps of Engineers, Historical review, c. 1946, RG 77, NARA.
23 Historical narrative, Southwest Pacific, Morale, Chapter 11, c. 1946, 355-62, Entry 183, RG 313, NARA; History of the South Pacific Base, Book 11, 1945, Entry 44463, RG 388, NARA.
24 Bennett, Natives, 83.
American Pacific farm production in the South Pacific amounted to approximately 50,000,000 lbs. (22,680 metric tons), worth about US$2,000,000.25

Both the Americans and Australians planted vegetables and fruit that appealed to the forces. Often using local labour, the Australians made gardens near several bases in New Guinea. Although their gardens could not produce the 30 tons (50.802 metric tons) of food the AIF consumed daily, they could supply hospitals and convalescent depots and often added some variety to the diet of forces stationed nearby.26

Huge quantities of fresh food came to the Allied forces in the southern Pacific from Australia and New Zealand. These were vegetables that travelled and kept well and were scarce or did not grow locally such as potato, swedes, parsnip, onions, carrots, tomatoes, and citrus fruit, with cabbages and cauliflower more for the hospitals. Meat and dairy products were also shipped from Australia and New Zealand. The USA was to pay for these under reverse lend-lease in postwar accounting, a process which largely cancelled out the lend-lease debt these countries owed the United States.27

With the exception of inland New Guinea, most bases and military camps were near the sea so Allied forces sought this out as a protein source. Some fishing across the Pacific was ad hoc—individuals and units using explosives to get a quick haul with no regard to local fisheries; in fact ‘educating’ the local people that this normally banned dangerous practice was acceptable.28 But the US and the Australians also made more systematic attempts. The American sent a fisheries expert, Wilbert


28 Allied Geographic Section 1942, 17; Thune 1989, 244; B. Macdougal, Letter, 20 May 1945, DL/457, AWM. See also R. Berry, Diary, 16 September 1942, PR 84/021, AWM; Photograph and caption, No. 096182, AWM; Gillespie (ed.), *Pacific Pioneers*, 107; William Sabel, *Seeds of Hope: An Engineer’s World War II Letters* (West Lafayette, IN: Purdue University Press, 1999), 122; Bennett, *Natives and Exotics*, 231.
Chapman throughout the Pacific with various kinds of fishing gear to supply to units. Expert in cool waters of a continent, he had to revise his thinking in the insular tropics. Though the deep seas of the Pacific had rich supplies of tuna for example, small ships could not venture too far from land; moreover they made ideal targets for an enemy vessel or plane. Most fishing was carried out within sight of land, often in wide tropical lagoons and on reefs, as these were bountiful sources of fish. Some of this American gear did not suit fishing in shallow tropical waters where reefs were far more common than the cool North American waters. Many adjustments needed to be made to the nets and related equipment.

Attempts to organise fishing vessels too were not entirely successful. Allied governments had taken over many from as far away as southern New Zealand for wartime movements of small units of troops and gear. The three that Chapman obtained for fishing were not especially reliable, as was true of most of their white American civilian crew. They did, however, supply up to 1000 pounds of fish daily to units in western Solomon Islands and New Caledonia, but often some of the fish was not fit to be eaten as it had deteriorated with lack of effective refrigeration on board. By early 1945, this erratic arrangement was largely abandoned in favour of regular supplies of imported frozen fish fillets from New Zealand for major bases in the South Pacific Command. In New Guinea, the pragmatic Australians found professional fishermen within the army to run the coastal fishing with close help and advice from local men who understood the seas and the fish. Again, much of this catch went to feed the sick and wounded.

Wilbert Chapman had soon learned that he was in a new maritime world and was not ashamed to admit it, commenting on how his locally hired crew of ‘black Melanesians’ ‘knew all there was to know’. The Australians who lived alongside the local fishermen on PNG also had learned quickly about local ways. By comparison, ignorance not only of the fishery but also of the ways Melanesians like to work was evident among the American military. In New Caledonia some French settlers

29 Chapman, Report on Fishing possibilities, Canton Island, October. 1943, Chapman to Ryerson, 31 October 1943 and enclosures, Entry 217, RG 234, NARA.
30 Before the heavy fishing of recent decades, there were substantial tuna banks in deep waters near some islands at various times of the year; for example, around the Tongan islands. A related species, the highly prized bonito, was abundant in Solomon Islands waters and fished in March-April when the seas are calm. Bennett, *Natives and Exotics*, 92; W.G. Ivens, *Melanesians of the South-east Solomon Islands* (London: Kegan Paul, Trench, Trubner, 1927), 130-59.
31 Bennett, *Natives and Exotics*, 94-5.
fished from their own small vessels and brought the catch back to the Americans at Moindou to a building where local Melanesians (Kanaks) were to clean and prepare the fish for the mess cooks. But the American military installed long tables for them to work on, only to discover that they worked squatting, not standing. Such mistakes as this and trying to use the US-based fishing gear, though not fatal, wasted time and money and probably made the Melanesians wonder at foreign ways.33

Map 3: Pacific command regions.

Living off the Land

In the larger islands with some settler population such as Fiji and New Caledonia where cattle herds were husbanded before the war, the military could purchase fresh meat, though some was also obtained on the black market. Colonial officials, mindful of the future, did all they could to control this but cattle owners often had their eye to the main chance. Even so, stealing was relatively rare where colonial administrations were functioning well.

Such was not the case in the Solomon Islands where, away from a skeletal administration, the US forces in the Russell Islands helped themselves to a large herd of cattle that a coconut plantation company had run under the palms to discourage re-establishment of native forest. Eventually, since the Americans were foolish enough to run a topical article on this in major newspaper, the company concerned complained and some settlement appears to have resulted. Not so with small groups of Fijian troops who stole from native gardens in the Florida islands and helped themselves to pigs on Makira (San Cristobal) in the Solomon Islands (see Map 4).

![Map 4: Solomon Islands.](image)

Such actions had the potential to be detrimental to the Allied cause, as the Australians realised in PNG. Here all units were instructed to leave the pigs, the gardens and the women alone. The indigenous people had no loyalty to the Allies; their loyalties rarely ran beyond their clan, family and village. The Australians knew that if the people were alienated by the behaviour of the military then, if and when the Japanese appeared, the local people could side with them.

The Japanese however, were guilty of commandeering local food supplies on a significant scale. By 1943, the battles of the Coral Sea (May 1942) and Midway (June 1942) had significantly weakened their naval power. Soon Allied submarines strangled their supply chain from Japan. Stealing pigs and food from gardens was a common means of Japanese survival though local people made gardens hidden

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from sight in scattered patches of forest. In some areas such as New Ireland, the
Japanese also used forced local labour to grow food. As well, on New Britain at
their major base at Rabaul, the thousands of Japanese troops, by this time, were
spending a third of the day in gardening. A novel protein source was the Giant
African Snail which multiplies very rapidly. This Japanese introduction went on to
become a major pest across many of the Pacific Islands.\(^{35}\) Overall, the Japanese had
few indigenous sympathisers in these islands by the time of the surrender in August-
September 1945.

**Local People – A Human Resource**

US logistics experts calculated that for the needs of every man in the war theatre,
either in combatant or support units, ten more were behind servicing their needs.\(^{36}\)
Thus the more who could be replaced in the war zone, the less drain on domestic
resources and the war effort in the European theatre. With local substitutes there
were added bonuses—no need for long haul transport, upkeep beyond the fighting
zone, hospitalisation in the US if badly injured, a higher wage scale, and pensions.
Add to that a greater familiarity with the local environment and conditions, and the
benefits were obvious.

Though there were many calls on indigenous people, some were incorporated
into the Allied war machine either as soldiers or labourers. As soldiers they served
directly in combat or, in a more undercover capacity, as scouts and coast watchers
in forward areas. Since actual fighting did not reach beyond Guadalcanal in the
Solomon Islands, (see Map 4) the majority of such men were located no further east
than this.

For both the military and the colonial administrations the question soon arose
of what wages should be paid. Before the war in almost every colony, practically
all revenue had to come from local production and exports—colonies had to pay
for themselves, the mother country advancing very few, if any, grants.\(^{37}\) With the
exception of export of some gold from British Fiji and the Australian Mandate of

\(^{35}\) Bennett, *Natives and Exotics*, 86-90.

\(^{36}\) ‘Operation Roll-Up’: The History of Surplus Property Disposal in the Pacific Ocean, I-3,
Naval Yards (1948?), Washington, DC.

\(^{37}\) Robinson to Attorney General, 15 September 1944, Attorney General’s office, 1944, RG 284,
NARA SB; Donna Winslow, ‘Workers in Colonial New Caledonia to 1945’, in Clive Moore, Jacqueline
Leckie, and Doug Munro (eds), *Labour in the South Pacific* (Townsville, Qld: James Cook University,
1990), 111-16; Judith A. Bennett, *Wealth of the Solomons: A history of a Pacific archipelago, c.1800-1978*
(Honolulu: University of Hawai’i Press, 1987), 162-4, 210-14; L.P. Mair, *Australia in New Guinea*
New Guinea, nickel and other minerals from French New Caledonia, phosphate from Nauru and Banaba (Ocean) Island, and some pearls from French Polynesia, revenue came primarily from plantation-based economies—sugar and copra in Fiji and copra in the rest. The world Depression of 1929 crippled the copra industry as commodity prices collapsed and so incomes fell and wages were lower than before 1929 for both local people and lower-level foreign management such as overseers. Much the same continued throughout the 1930s. Given the dominance of plantations and mining, the income of labourers, largely unskilled, stagnated along with availability of jobs, with most of the foreign companies struggling to survive.

Administrators, even with the best will in the world, had no idea what post war conditions might be, but most expected them not to be immediately much improved on the prewar decade. Moreover, they struggled to keep local labour working on plantations to supply wider war needs. Copra production was diverted to make explosives as well as oils for human consumption. The price rose—if it could get to the market across the ocean. Thus to administrators, both the control of numbers to work for the Allied forces and their wages were a concern.38 Rapid military-induced inflation could spread to the civilian sector and discourage work on run-down plantations where any spike in the copra price would take years to trickle down to the labourers. The US military too did not seek to rock this particular boat since it clearly reduced their costs and kept colonial administrators from becoming potential opponents. Generally then they offered remuneration consistent with colonial rates, though in many cases those employed by the American reaped many other benefits such as ‘gifts’ of clothing, tinned food, cigarettes, and bedding. Where wage rates for whatever reason had climbed before the war with Japan began, as in American Samoa when labour was needed quickly for airstrip and extended construction, that rate carried over into wartime. This was atypical. Thus, in remote French Wallis Island, the US military paid 20 cents a day while on American Samoa the daily male wage was US $3.20 a day. So whether or not the bulk of available manpower went to labouring or soldiering, the wages remained largely in the pre-war colonial spectrum though with considerable variation across the Pacific.39

**Defence Forces**

Fiji, Tonga, and American Samoa supplied men to fight; though, of the last two, only a few Tongans actually saw combat. In American Samoa the pre-war Fita Fita guard under the US naval administration grew to 500 in February 1941. Once the war

38 Bennett, *Natives and Exotics*, 115-23.
39 Ibid., 139-50.
with Japan began the Americans created a US Marine Corps reserve of another 500 Samoans but these remained on duty at home. They were paid at 70 cents to US $1 a day (or $7 a week), as well as a uniform allowance. This relatively was a very good wage, among the best that indigenous soldiers received across the Pacific, but below that of the ordinary US serviceman or ‘buck private’ who, while serving overseas, was earning almost $70 a month, (exclusive of allowances for wife and children) with most expenses paid, except for toiletries and haircuts.  

The Fijians volunteered in numbers to serve in the army, and soon responded well to training led by New Zealanders in the mountains of Viti Levu, Fiji, where about 50 Tongans joined them. The Fijians made up over 80 per cent of the Fiji Military Force (FMF), with commando units and four infantry battalions. Overall 11,000 men passed through the FMF throughout the war, a major proportion of the able-bodied male population. Compared to other work, especially when Fijian participation in the cash economy was low in the Depression years, the wages paid to soldiers were high. But most Fijians fought to give their tribal land (vanua) a good name and for their chiefs, often officers. Many served with distinction in battles in Bougainville and the western Solomon Islands. One Fijian, Sefanaia Sukunaivalu, won the Victoria Cross on Bougainville where he perished.

Their familiarity with tropical forest conditions coupled with guerrilla tactics earned them huge respect even from the American forces whose antipathy towards men of colour was manifest in regard to African-American in the forces.  

40 Malvern Hall Tillett, ‘Army-Navy Pay Tops Most Civilians’ Unmarried Private’s Income Equivalent to $3,600 Salary’, Barron’s National Business and Financial Weekly, 24 April 24, http://www.usmm.org/barrons.html. In the Australian Imperial Force, the average unmarried soldier was paid seven shillings (7/-) a day while overseas, well below the Australian social welfare benefit or dole of 8/6d. This would be about ten pounds and three shillings (£10-3-0) a month or US $33.60, compared to about US$70, the US average wage. Gavin Long, To Benghazi: Australia in the War of 1939–1945 (Canberra: Australian War Memorial, 1952), 66. Note that there were 20 shillings in a pound (£), and twelve pence (d) in a shilling (1/-).

many members of the Pacific Islands Regiment were as effective. Over 3500 served after five weeks' basic training and were involved in all but one (Milne Bay) of the major campaigns the AIF fought in PNG. These men were not unaware of their contribution, as most of them functioned better than Australians in jungle conditions. But as time went on they saw they were treated differently from the Australian infantryman in terms of rations, wages, uniforms, and pensions. Demonstrations against this persuaded the commander of the AIF, General Blamey, to intervene. He increased wages from ten shillings a month to fifteen, though still far less than the Australians, provided compensation payments for disability and death and—the most visible distinction—saw that their uniform was a shirt and shorts instead of a lap-lap (wrap-around skirt).\(^{42}\) Melanesians could learn to fight in the armies of foreigners but they also learned that they who ran the same risks had not been considered worthy of equal treatment—a warning for any foreign force employing local units.

Solomon Islands had a defence corps but only about twenty of these saw combat with the New Zealanders and Fijian force on Bougainville. These proved ineffectual simply because they had less than two weeks' training and so did not function well in combat. Other small units trained locally by tough former district officers then in the military, such as about 60 in the New Georgia area (Map 4) led by Donald Kennedy, were highly effective as guerrillas, killing over 100 Japanese as well as saving Allied airmen crashed in Japanese-occupied territory. Other district officers trained Solomon Islanders they knew well to act as coast watchers and scouts who often actually visited enemy encampments as villagers and memorised details to pass on to the officers and their hidden radios and thence on to headquarters.\(^{43}\)


In Fiji in particular, the colonial administration worked to preserve the domestic economy, much of it geared to the war effort, as well as supplying immediate labour needs for the occupying American forces. The French in New Caledonia permitted only 200 Kanak men to act as guides for the US forces in the inland though they had allocated more than 1000 for the French military mostly working as labour within New Caledonia or Wallis Island. Although other island groups each had local defence force these either were busy coast watching for the Allies, guarding military installations and internees, assisting with teaching newcomers bushcraft, or otherwise incorporated into the labour force. Keen to fight, over a hundred islanders of mainly Cook Islands, Niuean, Samoan and Tongan ancestry managed to get to New Zealand and joined up with Māori Battalions and served in Europe and the Middle East.

The Labourer

Labour was a universal need in the South Pacific; men to unload and load ships, to store goods, to assist military sanitary and medical units in pest control, to dig drains, to carry supplies and, in the case of PNG, the injured, to help with construction of local material buildings, to work in military farms, and to do military laundry, though women did most of the last mainly in rear or Allied occupied areas.

In assessing the role of the local people what rarely enters war history’s consideration is the contribution that the indigenous women made. Near the front some worked in the US military gardens. The outstanding work of the women in the rear bases of the United States kept made life gentler in often-difficult psychological situations. The US soldiers liked to have clean clothes; indeed the sale of flat irons heated by charcoal made from coconut shell soared to thousands in Samoa in 1942 as women set up laundry services. In the Gilbert Islands, the administration controlled this clamour for work in case it resulted in the neglect of children by allowing each woman no...
more than four US laundry customers a month, each paying fifteen shillings which brought their fees to about the same as the men’s Labour Corps wage.\(^{48}\) In Polynesia and the Gilbert Islands, some men established intimate relationships with young women, many of whom bore part-American children, but, as the men found, their partners were not sufficiently ‘white’ in the eyes of US immigration laws and could not marry Americans or immigrate to America, so with their children the women were left behind.\(^{49}\)

Map 5: Gilbert and Ellice Islands, now the states of Kiribati and Tuvalu.

In the Gilbert Islands, after the Japanese were defeated in November 1943, the administration quickly set up a Labour Corps that consisted of 2000 men in companies of 200-300 and platoons of 25, including four NCOs and a cook. All were drilled, trained and equipped with uniforms with food rations as well as the usual tobacco, matches, soap, salt, sugar, and tea or coffee. The pay for privates was two pounds and five shillings a month but higher for burying the American and Japanese dead on Tarawa. They were very keen to work because imported goods had been non-existent under the Japanese. So good were they as workers, over 400 Gilbert and Ellice Islands’ men were taken on to work the unloading of ships on Guadalcanal, Solomon Islands, and excelled at the task working new machinery

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48 Affeld, Report, Civil administration Gilbert Islands, 16 January 1944, RG 218, NARA.
49 See Judith A Bennett and Angela Wanhalla (eds), Mothers’ Darlings of the South Pacific: the children of Indigenous women and US servicemen in World War Two (Honolulu: University of Hawai’i Press), forthcoming.
under the guidance of Naval Seabees. And here, as well as in almost all islands, the people liked the Americans’ generosity, a characteristic that slotted well into island people’s concepts of relationships based on reciprocity.

Over two million US troops traversed the Southern Pacific throughout the war years. On almost every island selected for a base they, just as the Australians in PNG, needed to build their own accommodation, airfields, roads, wharves, drainage systems, communication links, water supplies, as well as fortify their surroundings. Most of the bases in the South Pacific theatre, as it turned out, remained rear bases with supplies and equipment in reserve and to service the ships and planes that came and went; but all needed to be ready for any surprise attack. In those rear bases closer to the front, the numbers of troops were greatest – either being made ready to go forward into the battle zone or returned to recover from fighting, fatigue, injury, and illness. Thus in the island South Pacific command the main bases were in the New Hebrides (Vanuatu), New Caledonia, and Fiji as well as major installations in New Zealand.

Although these labourers were to work with the Allied forces, most colonial governments, like the British in the Gilbert Islands, created Labour Corps, each under its own officers with pre-war experience of the islands and people. A regular routine, some kind of a uniform, ration issue, basic accommodation, and a chain of command would supply more discipline, so the administrators believed, though there were times say, when Japanese bombed US installations on Guadalcanal and thus close to the labour lines, that Solomon Islanders refused to work.51

50 Fox-Strangeways to Commander, 28 December 1943, RG 218, NARA; Affeld, Report, Civil administration Gilbert Islands, 16 January 1944, RG 218, NARA; McQuarrie, 123; Biritake Marama and Tiura Kaiuea, ‘Awakening the Gods of War in the atolls’, in Alaima Talu et al. (eds), Kiribati: Aspects of History (Tarawa: University of the South Pacific and Ministry of Education, Training and Culture, Kiribati government, 1984), 128-46. Cf. Geoffrey White and Lamont Lindstrom (eds), The Pacific Theater: Island Representations of World War II (Honolulu: University of Hawai’i Press, 1989); RC to HC, 9 August 1945, WPHC BSIP F9/91, National Archives of Solomon Islands (hereafter NASI); 4th Special US Naval Construction Battalion, Training of Natives, c. 1945 and enclosures, Commander to Commander South Pacific Fleet, c. August 1945, Box v. 9291, F. A9-4, RG 313-58-3401, NARA SB; Strength Reports, APO 709, September 1944-July 1945, Box 1, F. A9-4, RG 313-58-3503, NARA SB; Murray to Commander, 21 July 1945 and enclosures, Entry 178, RG 313, NARA; Jacob, History of Guadalcanal Beaches and Army Port Growth, 1 March 1946, RG 112, NARA.

Almost without exception the military took their labour needs to the colonial official whose job it was to protect the structure and subsistence of the village communities of the men, but also to allocate labour as the need arose. Usually this was done well but the closer to the front, the greater the demand on villagers. In PNG where both the AIF and the US forces needed labour, especially carriers, to take supplies inland, there were instances of over recruiting. By mid 1944 there were 45,000 employed in an array of jobs. Instead of taking no more than the regulation 25 per cent of the fit village males, some ANGAU officers near the front took 80 per cent, some by compunction with beatings for desertion. In some extreme cases labourers worked up to a year with no rest days. On the other hand, some officers caught between their role as protector and as recruiter, worked hard to get these men decent rations, so needed for hard work such as carrying. In the Solomon Islands, however, where the need was less urgent and less protracted, all Labour Corps men were required to return home after a year’s contract so as to support their families’ subsistence. Even so, some men were keen to work for wages and to see the wonders of the American camps, often offering in numbers that did threaten the community’s well-being. The situation was even worse among the desperate Japanese who beat or killed any workers who refused an order. Thus it was in the battlefront that all military put excessive pressure on the human civilian resource while in the rear bases relationships were more regulated and less demanding.

**Worthy of His Hire**

A challenge to such operations especially in the forward zone, once the scale of remuneration was determined, was two-fold. First, for those paid in cash, stores with supplies were essential so the men could buy goods, and this was not easy in
the combat zone because all traders had left; second, some Highland peoples of New Guinea had never seen or used money before so some medium of exchange had to be found, for example, for the tens of hundreds of barefoot people making the first airfields by ‘dancing’ up and down the cleared surface to consolidate the ground for planes to land.\(^3\) Thus part of the war effort required co-operation of the military and innovation by colonial officials.

The common trade items in much of Melanesia included tinned meat or fish, rice, sugar, tea, perhaps tinned condensed milk, lengths of cloth, cotton blankets, handkerchiefs, diving goggles, enamel ware, stick tobacco, matches, pipes, paper (for making cigarettes), kerosene, kerosene lanterns, soap, beads, mouth organs, Jew’s harps, umbrellas, razor blades, needles, fish hooks, adzes, hatchets, and salt, depending on the area. The need for trade stores or some such outlet was met initially by the AIF in PNG then taken over by ANGAU until the second half of 1943. The Australian Production Board then took this on in all areas except where military activity was underway and ANGAU did the sales and distribution.\(^4\) In the Solomon Islands, the American FEA obtained goods for sale mainly from the US, with the administration taking over with supplies from Australia in late 1944 to become in time the Trade Store scheme which gradually faded post war in most islands, as traders and retail companies returned.\(^5\)

The British administration in the Gilbert Islands, some of which had been occupied by the Japanese, obtained goods from the American suppliers via Hawai‘i but then most came from either the US Bureau of Economic Warfare from the US or from the western Pacific High Commission, which had a wartime office in

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\(^4\) Dept of External Territories, 1) Australian New Guinea PCB, 2) ANGAU, 15 March 1944, Item 42, CP 637/1, NAA; Commerce Member, Report on Operations of the Australian New Guinea PCB for year ending 30 June 1944, CP 637/1, Item 43, NAA; C.B.C. to Chairman, 2 March 1944, Schedules A and B, CP 637/1, NAA.

Sydney. This body, based in British Fiji, was responsible for the British western Pacific—Gilbert and Ellice Islands Colony, the Protectorate of the Solomon Islands, the British administration of the Anglo-French Condominium of the New Hebrides, and the Protectorate of the Kingdom of Tonga. The most urgent needs for these Gilbertese people of the atolls and sea were for sail cloth, canoe timbers, fishhooks, tobacco, and soap. After the Americans drove out the Japanese, US military rations supplied the people until they were able to feed themselves.† Just as the AIF offered trade goods in PNG in extreme conditions, so too did the US forces even behind the lines in areas where traders had left or could not get supplies, such as French Wallis and Bora Bora Islands.†

In the case of the Bena Bena people in the New Guinea Highlands who worked for the Allies, they were not interested in trade goods and wanted gold lip mother of pearl shell and other valued shells. Money in the form of currency was useless, as they knew nothing of stores and shops. The US supply section found some 700 and the Australian government the balance of 1000—not without difficulty in wartime Pacific.† But the lesson was one all forces had to learn fast—the need to pay for services and the concomitant need to supply the kinds of goods the labourers desired.

**Keeping Allies**

Almost all the Allies who fought in the Southern Pacific—the United States, Australia and New Zealand—had colonial holdings or ambitions in the region. Each also had motives to retain their Allies, be they foreign or indigenous. Australia and New Zealand in late 1943-1944 feared that the United States which had in reality saved

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56 Affeld, Report, Civil administration Gilbert Islands, 16 January 1944, Geographic file, RG 218, NARA; Newton to Commander in Chief, 18 January 1944 and enclosures, Box 12, F. A14/A17, RG 313-58-3503, NARA SB; Marchand, Notes on Solomons, 12 July 1943, CO 225/333, Part 2, National Archives of the United Kingdom (hereafter TNA), Kew, London; Fox-Strangeways to HC, 15 May 1944, WPHC Gilbert and Ellice Colony (hereafter GEIC) CF 62/13, Vol 1, WPA.


them from the Japanese would decide to stay on either on the bases it had built or indeed on entire islands since many in upper circles of the US Navy and the government wanted this.\footnote{59}

The main American motivation, aside from commercial interests that would have liked a major foothold in the western Pacific, was to create a series of bastions against any threat from the northwest, as Japan had proved to be in 1941. The postwar transfer of the former League of Nations mandates—most of Micronesia, as well as northeast New Guinea, Nauru and Western Samoa to the United Nations Organisation as trusteeships to various victors allayed US concerns. The large region of Micronesia (see Map 1), formerly under Japan, became an American trusteeship territory, so the United States could rest easy with the reduced possibility it would ever have to fight an enemy on its home soil. They set their brand on the small islands, as US possessions in 1946, with the first of over sixty explosions of atomic bombs tests on the hapless atoll of Bikini in the Marshall Islands. New Guinea remained in Australian hands, Western Samoa with New Zealand, and Nauru with the British Empire, administered by Australia to exploit and supply phosphate for the barren Australian and New Zealand arable and pastoral lands at basically cost price.\footnote{60} The concept of a ‘trust’ was clearly not what any western legal system would see operating in some of these post war colonial arrangements.

In terms of the relationships that occupying Allied forces had in other people’s colonies and their own with the local people and the respective administrations, the record of their actions at war’s end to create goodwill has few parallels in today’s many regional wars. Almost all administrations, to varying degrees, sought to compensate for losses to the indigenous people’s resources including the human resources. And the US was willing to be part of this in the lands of Allies that it had occupied.

The most extensive and most generous was the Australian government in what became the Territory of Papua and New Guinea (TPNG). Australia, always fearful of the heavily populated and alien peoples to her north, a fear confirmed in 1941, needed to have Allies in TPNG for the future as an Australian dependency. Possibly this was a time of the greatest Australian public good will towards the TPNG people who had assisted the AIF as carriers of their suffering men.\footnote{61} No matter who caused

\footnote{59} Judith A Bennett, ‘The American Imperial Threat to the New Zealand’s Pacific Dependencies in World War Two’, in Ian Conrich and Dominic Alessio (eds), New Zealand, France and the Pacific (Nottingham: Kakapo Books, 2011), 41-58.

\footnote{60} Bennett, Natives and Exotics, 234, 237, 296, 297.

\footnote{61} Ward, 20 Sept 1944, Item 2396/12/585, External Territories, National Library of Australia, Canberra.
the losses in wartime, the Australian government resolved to compensate all but those who ‘had voluntarily assisted the enemy with a knowledge that it was wrong to do so’. Thus direct battle damage was not excluded. Three assessors with considerable legal and local knowledge—Judge J. V. Barry KC, anthropologist Ian Hogbin, and district officer and ANGAU member, J. Taylor—began the work of surveying the losses and setting rates of payment. They visited all districts in 1945 and talked with many, and saw the losses the people had suffered through simply being in the path of two foreign combatant forces. Loss of life due to battle or consequent diseases such as malnutrition, loss of limbs and injury were allocated a value and pensions calculated. Loss of personal property and chattels—including livestock, food plants, valuable trees, and communal property such as timber trees as well as loss of land and soils—all came into accounting.

The Australian government accepted this report and in some cases increased the scale of payments recommended. Then the district officers’ tedious work of assessing each of the myriad claims in hamlets and villages across the country began and only concluded in 1960. Over 140,000 claims were accepted. All the claims paid to the people amounted to £2.7 million, a huge sum for the time, across a population then of about one million, including those outside any conflict area. Where people did not understand the uses of money, some payments went to setting up schools and hospitals in the Highlands. In addition the commercial enterprises, mainly plantations of expatriates ruined by the war, saw compensation out of a separate domestic Australian fund.

Except in American Samoa and Guam, the United States forces were not in US colonies but in the Pacific and elsewhere it devised a system of compensation for damage in other territories, occasioned by the war effort but not by direct war damage in battle. Early 1942, the US congress passed a law, to ‘provide for the prompt settlement of claims for damages occasioned by Army, Navy, and Marine Corps forces in foreign countries’ ‘for the purposes of maintaining friendly relations’, for amounts up to US$1000, later amended to $2500 and by April 1943 to $5000, to be considered by island-based Claims Commissions. Any higher claims had to be certified by the Secretary of the Navy and then to Congress. The claims had to be

62 Barry, Hogbin and Taylor, Compensation to the Natives of Papua and New Guinea, July 1945, 1956/1096, A 463/17, NAA.


64 Bennett, Natives and Exotics, 176-8.
lodged within a year of damage occurring though some latitude was permitted where assessing the claims was very slow. Such commissions normally consisted of three people, one a commissioned officer and one often a local person who understood going rates of value. In some places such as Tonga, the US Army and US Navy each had their own commission but generally a single one did the work. In most places this worked well, and often such claims were settled by allocating war surplus, matériel such as galvanised iron or Marston matting that was too expensive to haul back to the United States.

As with wages, rates of compensation varied from place to place—American Samoans getting from double to twenty times more than Tongans on valued plants. But the American Samoan larger claims were so diverse, complex and so high that, despite the relatively small area and population, it took to the end of 1954 for a sole judge to hear all of them.

The British in the Western Pacific territories had no consistent compensation policy. In Fiji, the most financially strong, the colonial administration resumed land for airstrip construction as early as 1938 as it anticipated a major war. Soon after the administration legislated for compensation for loss of lands, crops and housing damaged by military occupation. Once the US came into the war this policy continued with no direct claims ever officially getting to the Americans. But this was a singular case.

In the Gilbert and Ellice Islands the Americans had endeared themselves to the local people. In May 1944 they lobbied to have the Americans replace the British administration. Fearing this, the British High Commissioner of the Western Pacific in Fiji advised the Colonial Office in Britain to do something about compensation. Promises were made, even though Britain was struggling with its own wartime

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66 Olsen to Commanding officer, 18 June 1943, Curley to Commanding Officer, 18 June 1943, RG 313-58-3394, NARA SB.
67 Bennett, Natives and Exotics, 160-2.
68 Aerodrome sites, 1939,Air 118 33, ANZ; RNZAF-Works, Fiji Aerodromes, February1942-July 1943, Colonial Secretary’s Office (hereafter CSO) F37/187, National Archives of Fiji (hereafter FNA); Pacific Islands Monthly, 15 September 1938, 6 and 15 December 1939, 33; Emergency powers (Defence) Act 1939, Fiji; Harlan to Director of Lands, 31 March 1943, District Officer (hereafter DO), Nadi to District Commissioner (hereafter DC), Western, 3 April 1943, DC Western to Colonial Secretary (hereafter CS), 9 April 1943, Petition 15 April 1943, Weekly reports on payment of compensation, May-November1943, CSO F115/71/1, FNA; Minutes of Nadi Provincial Council, November1943, CSO NAD 62/8/12, FNA; CSR to CS, 17 April 1946, CSO F115/71/3, FNA.
indebtedness to the United States. Some British hopes were for this to come from reverse land lease or frozen Japanese assets. Eventually the cash-strapped local administration did agree to compensate for lost crops on these resource poor atolls but only when the people actually planted replacements, a wise move where money would have gone to the local store for imported food and soon spent, but one not initially popular.69

A more miserly colonial attitude prevailed in the Solomon Islands. The High Commissioner again believed Britain would undertake compensation, and brought no claims against the United States, though they expected to have to pay some. The United States paid no direct claims but did allocate much surplus infrastructure for a token payment that gave the Solomon Islands more than it ever had before the war. By 1947-1948, the British administration decided that the local claims that had been submitted to it would not be paid. Not even heavy military logging of some coastal areas was paid for, but passed off as ‘war damage’, though in places often of no actual fighting. This is still remembered in a culture based on reciprocity and compensation for losses. Any compensation for the destruction of expatriate enterprises and Christian mission buildings was not even considered, similar to situation in the Gilbert and Ellice islands. A small fund that the British allocated to the Solomon Islands and the Gilbert and Ellice Colony from pre-war frozen assets of Japan went into the Trade Scheme to establish and stock stores in the districts to re-establish trade and copra production for the benefit of the people in the respective archipelagos but, to the indigenous people, this was no recompense for their immediate losses.70

The French territory of New Caledonia saw claims up to $5000 settled by a US Claims Committee but not without quarrels about lack of French representation on it until mid-1943. As the Americans withdrew, the respective governments agreed that, as part of a deal with the metropolitan Free French, it would forgive all the many lend-lease debts that the French empire had incurred providing the French would settle local claims. As well, the US handed over much surplus US matériel and plant at low prices. Small claims in French Polynesia at Wallis and Bora Bora did not


reach beyond the islands, but several were dealt with informally on the spot, usually with war surplus gifting.\footnote{71}

The Anglo French Condominium of the New Hebrides proved legally complicated. No foundation agreement at the start involving the French, British and American authorities could be negotiated regarding ways and means to do such basic arrangements as leases of land, despite ten attempts over the duration of the war. Thus the Americans had no legal standing and any deals with the indigenous people were legally impossible anyway, because they were stateless and did not even have colonial status as protected persons or subjects.

Ad hoc arrangements emerged with the local administration arranging informal leases.\footnote{72} A Claims Committee dealt with any claims less than $5000. But when it came to large claims, since the US forces in this dependency lacked a legal entity, the Condominium could neither get lend-lease material nor supply reverse lend lease goods. As the war drew to an end, several significant claims were in fact cleared with war surplus. Claimants, almost all French planters, sought compensation and the deal done between the US and the Free French governments seemed a way forward to settle over $90,000 in claims but France by 1951 would not accept this as a solution unless Britain paid half. Britain dealt with a couple of claims from English

\footnote{71} Tixier to Atherton, 24 December 1941, Atherton to Tixier, 15 January 1942, Commanding Officer, Bora Bora to Commander South Pacific, 6 August 1945 and enclosures, Shaforth to Secretary of the Navy, 26 February 1942 and enclosure, Box 1, F A13-16, RG 313-58-3233, NARA SB; McColm to Commander South Pacific, 5 March 1945, Entry 178, RG 313, NARA; Hendren and Burgess to the Governor of French Oceania, 25 January 1946, Entry 183, RG 313, NARA; Barnett to Tallec, 26 January 1945, 44 W 707 (212), Territorial Archives of New Caledonia, Noumea; Tallec to Hendren, 21 January 1946, Entry 183, RG 313, NARA; Wallin to Chief of Bureau of Yards and Docks, 18 July 1942, Entry 183, RG 313, NARA; Final close out report on Wallis, 30 November 1945, McGhee to Commanding General South Pacific, 10 October 1945 and enclosures, Entry 178, RG 313, NARA; Munster to Commander South Pacific, 4 August 1945 and enclosures, Box 1, F L4-L5, RG 313-58-3233, NARA SB; Burgess, Final Close Out Report on South Pacific Base Command, Annex C, 30 June 1946, Entry 44463, RG 338, NARA.

\footnote{72} RC to HC 30 July 1942, British Judge to Lieutenant Commander Hepburn, 24 August 1942, Egan, Minutes, 26 August 1942, 2 Sept 1942, HC to RC, 20 November 1942, Egan, Minutes, 27 May 1943, 1 June 1943, 23 June 1943, Blandy to HC, 4 September 1943, SOS to HC, 25 December 1943 and enclosures, WPHC, New Hebrides (hereafter NH) MP 33/2, WPA; Wilkinson to Commander, South Pacific, 1 June 1943, Entry 182, RG 313, NARA. See also, Colonial Office (hereafter CO) 968/86/5, CO 968/151/2, WO 106/2621, TNA; Egan, Minute, 29 April 1943, Egan, Minute, 8 May 1943, Egan, Minute, 25 September 1943, WPHC NH MP 32/59, WPA; Civil Affairs: Establishment of a Civil Affairs Office, c. November 1945, Entry 183, RG 313, NARA; Johnson to Blandy, 16 April 1943, WPHC NH MP 32/7, WPA; Commissioners to Commanding Officer, c. October 1943, Egan, Minute 11 October 1943, Egan, Minute, 25 October 1943, Blandy to French High Commissioner, 13 December 1943, Egan, Minute, 25 October 1943, Blandy and Fourcade to Commanding Officer, 13 December 1943, WPHC NH MP 32/9, WPA.
and indigenous people but refused to pay anything to French planters. Dragging on until 1954, the French metropolitan government finally paid these claims but reduced some of its allocation to the Condominium administration to counter this debit.73

As the war drew to a close, the New Zealand approach in Western Samoa and the Cook Islands was very different but occasioned by its fear that the Americans might not go back home as well as some unsettled pre-war claims that the US had on uninhabited islands disputed by Britain or by New Zealand. In Western Samoa the administration negotiated all agreements for land, leases and the like that the US needed and paid the people for them.74 In the Cook Islands with its few administrative officers and the close proximity of army camps and villages on Aitutaki and Penrhyn, the American commander worked with the a New Zealand judge to calculate in detail payments for the destruction of hundreds of coconuts and other crops mainly to construct airfields. Before this was finished the New Zealand government learned of it and stopped it, agreeing to pay all these claims without any request for reverse lend-lease accounting.75 Their motive was clear:

73 Stout, Status of Leases and Claims at Espiritu Santo, 3 April 1946; RC, Summary of events for the History of the War, 1 January–31 December 1944, 1 January–December 1945, WPHC NH 19/III 7/20, WPA; Commander to Commanding Officers, 29 June 1945, Box 7, F. L11, RG 313-518-3503, NARA SB; Acting RC to HC, 23 November and enclosures, WPHC NH SF 9/31/5, WPA; Shaw to Commanding Officer, 7 December 1944 and enclosures, Entry 178, RG 313, NARA; Egan, Minutes, 20 December 1944, WPHC NH MP 33/2 Part II, WPA; Claims of the Société Française des Nouvelles Hebrides and Comptoirs Françaises des Nouvelles Hebrides, 29 June 1945 and enclosures, Commander South Pacific to Field Commissioner South Pacific, 31 January 1946 (date unclear) and enclosures; US Naval Base Order 187, 19 February 1945, Box v. 319812, F. A2-11(2), RG 313-58A-3254, NARA SB; Howie to Commanding Officer, 31 December 1944, Activities of Divisions HQ SOS SPA, August 1944, Entry 44463, RG 338, NARA; Minute, 20 November 1952, Acting RC to HC, 4 March 1953, WPHC NH MP 32/59, WPA; Leger, Report to the Assembly of France, No. 35, 11 February 1954 and enclosures, 109W, 278, ANC.

74 M.P. Lissington, New Zealand and the United States 1840-1944 (Wellington: Government Printer, 1972), 19-23; F.L.W Wood, The New Zealand People at War: Political and External Affairs (Wellington: War History Branch, Department of Internal Affairs, 1958), 74-4, 78; Commanding General to Commander, 20 May 1942, History of Upolu, Western Samoa, ca. November 1945, Box v. 13379, F. A 12, Barrett to Administrator, 1 June 1942, Manager to Commanding Officer, USMC, 13 April 1944, Sec to Administrator, 18 April 1944, Turnbull to Andraska, 12 September 1944, Box v. 13381, F. Misc., RG 313-58b-3061, NARA SB; C.G.A. McKay, Samoa: A Personal Story of the Samoan Islands (Wellington: A.H. and A.W. Reed 1968), 105-07; Final close out Report, Upolu, 28 January 1946, and enclosures, Entry 178, RG 313, NARA; Shanahan to Sec., 22 February 1944, IA 1, 86/171/1, ANZ.

75 Legally, the Cook Islands, treated as dependencies, were part of New Zealand’s territory and their people were New Zealand citizens, a fact that few in the New Zealand government fully understood. Rosemary Anderson, ‘The origins of Cook Island migration to New Zealand, 1920-1950’, MA thesis, University of Otago, 2014.
To lodge such a claim would merely serve to consolidate the interest of the United States Government and indeed would put them in a position to claim some right to use these facilities in the post war period. As well as derogating from the sovereignty of the New Zealand Government of the Cook Islands the effect of such claims might be construed as giving some title to the United States Government which should be avoided.\(^76\)

For all the local complications and the meanness of the British in the Solomon Islands, the colonial administrations had their eyes on the future welfare of the people but also, in several cases, on avoiding active resistance in the wake of the new ideas war contacts induced and the demonstrable power and generosity of the departing Americans. More particularly, the Americans sought not to make enemies of those on whose lands they were fighting their battles. They also had to work with its Allies fighting with it in several theatres. Even so, Australia and New Zealand were cautious of American post war motives, doing all they could to retain ‘their’ Pacific, yet also trying not to alienate a likely future ally to replace a weakened Britain. A broken Japan could do nothing at the time, and decades later still has not tried to recompense any of those who suffered in war as a consequence of their invasion of the ‘South Seas’ islands.

The overall lesson of this war in this theatre is that the Allied military benefitted by being able to use local resources, including people. Maximum benefit accrued where foreigners were willing to learn from the indigenous people and respect them, their cultural values, and their knowledge of their environment. The colonial administrations did at least some of this well and, in terms of compensation, as fairly as could be done at the time, though with hindsight the military, both Allied and the Japanese, left a legacy of enduring hidden costs in other peoples’ backyards—massive amounts of unexplored ordnance on land and in the sea, sunken ships now oozing chemicals as well as oil, even stashes of chemical weapons, as well as localised environmental damage such as borrow pits on small atolls and deforestation in some coastal areas, along with introductions of weeds and pests, including the cattle tick, to New Caledonia, to say nothing of the loss of life among the indigenous people in the battle areas and the fate of a few thousand fatherless children of mixed ancestry. Yet within the limits of war, such things happen but here in the South Pacific islands, the surviving Allied protagonists, those who made war, all got to go home.

\(^76\) [Shanahan], Penrhyn and Rarotonga: claims to natives land, 13 September 1943, IT 122/5/2 pt 1, ANZ.
to lands virtually untouched by the enemy. Immediate compensation placated many indigenous peoples while the lack of it is bitterly recalled. The long-term costs, often hidden at the time, linger in the islands and are constant reminders of the conflict—a thought that the Australian government, with its continuing propensity to fight in other peoples’ lands, would do well to keep in mind.
The Politics and Logistics of Military Campaigning in the Middle-East During the First World War

Kristian Coates Ulrichsen

The First World War was a global conflict. The fighting that originated in south-eastern Europe at the end of July 1914 rapidly internationalised and spread to all corners of the globe. Networks of military and diplomatic agreements drew in non-European regional powers such as Japan and (after April 1917) the United States. Meanwhile, the European belligerents’ imperial possessions became zones of major conflict and sites of contestation for control of strategic resources and access routes across the globe. Although the extra-European campaigns were smaller in scale than the giant offensives on the Western and Eastern Fronts, they nevertheless had a momentous impact on the host societies involved. This occurred as the logistical demands of industrialised warfare clashed with the largely pre-industrial terrain in which the fighting took place.

This paper sets out some of the contextual parameters that influenced military campaigning in the Middle East during the First World War. The focus in the paper is primarily the campaigns in the Dardanelles, Egypt and Palestine, and Mesopotamia, that pitted British and imperial forces against the Ottomans, in addition to the succession of battles between Ottoman and Russian armies in the Caucasus. Campaigning in these diverse theatres continued for the entire duration of the war and even outlasted—by one day in Mesopotamia—the declaration of the Armistice in November 1918. It goes beyond a narrow focus on military history to contextualise the campaigns in the broader course of the First World War and its strategic direction, and integrate them with the processes of political change, economic transformation, and social upheaval that afflicted each belligerent in different ways.
A central component of the paper is the emphasis on the myriad logistical, administrative and ecological challenges of campaigning in the Middle East, where the majority of resources had to be brought in and manhandled across large distances usually devoid of existing transportation or infrastructural links. The paper highlights the transnational links between the different zones of the fighting that drew the ostensibly-separate campaigns together in a complex logistical and administrative web. The military campaigns in the Middle East tend to be examined in isolation from each other and from area-studies and disciplines such as comparative politics or international relations. Yet the fighting involved enormous quantities of man- and animal-power on all sides, and greatly distorted existing patterns of political organisation and social and economic activity. With the exception of the Palestine campaign, they happened to take place in the geographically peripheral regions of the Ottoman Empire, where existing infrastructural and transportation links were at their weakest. This placed great additional strains on all warring participants, and the societies over which the campaigns were fought, to organise and extract the resources necessary to conduct and sustain the fighting.

The results of these campaigns also had profound geopolitical implications for the five empires involved, as well as for the regional system that emerged from the post-war settlement. This notwithstanding, existing literature lacks a general history of the Middle East during the First World War that emphasises the many interconnections—military, logistical, socio-political, and economic, among other more intangible ideational linkages—that bound the different zones of fighting together. (In an extreme example, a short history of the First World War published in the Seminar Studies in History series and intended to provide a ‘concise and reliable introduction to complex events and debates,’ the campaigns outside Europe were ignored altogether, with three pages on Gallipoli the sole indication that fighting of any sort occurred beyond the European fronts.)

Thus, the account of the campaigns presented in this section focuses on the administrative and logistical factors critical to their outcome as much as on the evolution of strategy and tactics. It explores the linkages between the campaigns in the Middle East and broader strategic developments, and assesses how central (or peripheral) were the campaigns to policy makers in the imperial metropolises. Meeting the logistical requirements of the campaigns greatly strained scarce shipping capacities, and a network of extra-European sources of supply developed to meet them. No less important were the ecological dimensions of conflict, particularly in

the harsh terrain over which much of the fighting took place. Here, the relative absence of roads or railways magnified the difficulties of supplying, transporting and sustaining the military forces, and underscored the logistical challenges of mobilising and extracting local resources from already-impoverished host communities.

Societal exposure to—and participation in—the military campaigns in the Middle East further intersected with two powerful external forces. These were the weakening of the Ottoman and Russian Empires and the intensifying rivalry between competing British, French and local nationalists’ visions for the future organisation of the region. As these processes of change interacted with each other, they created the macro-parameters that ultimately reshaped the political structure of the Middle East. Moreover, the contours of the wartime necessities of mobilisation deepened and widened the reach of the state and its extractive demands. That the states involved were primarily colonial implantations added a further complicating layer to the impact of the war on society, and this must be borne in mind when considering the impact—and legacies—of the military campaigning.

Beginning with a general overview of the physical and logistical difficulties of campaigning in the diverse theatres in the Middle East, this paper explores the challenges of conducting complex military operations in a forbidding host environment. Individual sub-sections focus on the ecological aspects of war, its logistical and administrative dimensions, and the strain they placed on local resources of man- and animal power. It ends with a section detailing the role of India in acting as an organisational and resources base for the major British military incursions into Mesopotamia and Palestine. A number of important cross-cutting themes emerge from the foregoing analysis. These include the importance of utilising local resources to resolve the supply constraints posed by shortages of shipping, the creation of more authoritarian forms of state control necessary to mobilise and extract these resources, and the ways that the experience of conflict began to reformulate relations between states and societies throughout the region.

**Challenges of Campaigning in the Middle East**

The conduct of warfare in the Middle Eastern theatres was complicated by multiple challenges. Chief among them was the gap between the voracious demands of modern armies and the low levels of existing resources available to military—and civilian—planners. This meant that in the initial stages of the campaigns all stores and supplies had to be brought in as very little was procurable locally.² It also meant that an uneasy

balance needed to be struck between civilian and military demands for scarce local resources, particularly as the division of the Middle East into war zones cut across and disrupted existing trade routes and economic hinterlands. These factors greatly magnified the strain on the logistical networks that connected the military units to their base depots, often over vulnerable lines of communications extending over hundreds of miles. So did the relative paucity of roads and railways in the Middle East and the concentration of the Ottoman Empire's limited industrial resources in Istanbul and its vicinity, hundreds of kilometres away from the battlefronts to its east and south-east. Similar constraints faced the Russian and British armies operating far from their logistical bases which, in the case of the latter, were located more than 2500 kilometres distant in India until substantial utilisation of local resources could be developed in the areas that came under occupation in Palestine and Mesopotamia.³

Emphasising the interlocking logistical and operational dimensions of conflict makes it possible to see the frequency with which this crucial link in the chain broke down. In his War Memoirs, wartime British Prime Minister David Lloyd George vividly recalled how Douglas Haig, commander of the British Expeditionary Force on the Western Front between 1915 and 1918, presented an update on the plans to attack the Germans at Ypres to a meeting of the War Policy Committee in June 1917: making 'a dramatic use of both his hands to demonstrate how he proposed to sweep up the enemy—first the right hand brushing along the surface irresistibly, and then came the left, his outer finger ultimately touching the German frontier with the nail across'.⁴ Although embellished retrospectively to suit Lloyd George's self-serving objectives, the description does illustrate the temptation for politicians and generals to underestimate, or, still worse, ignore, the on-the-ground challenges and realities of military campaigning, especially in the more difficult and varied terrain of the Middle East. Civilian and military planners additionally faced a steep learning curve as they struggled to adapt the new—and often unfamiliar—requirements of large-scale warfare to the specific settings of the Middle Eastern campaigns.

Climate and Ecology

Climatic and ecological factors played a critical role in determining the success or failure of military operations in the Middle East. The low margin of subsistence and limited amount of physical infrastructure such as roads, railways or industrial capacity meant

³ W.M. Parker, 'Supply Services in Mesopotamia', Royal United Services Corps Quarterly 9:2 (1921), 422.
that they became symbiotically connected to logistical and operational capabilities. This notwithstanding, they were regularly disregarded in the planning and execution of the campaigns, and their significance has often been overlooked in subsequent studies. An early case in point was a book published in November 1917 entitled *Topography and Strategy in War*. In it, the author set out to explain ‘the interesting relationship between inanimate Nature and the science of war’ as ‘the role played by land forms in plans of campaign and movement of armies is no less important today than in the past’. It nevertheless focused solely on the European fronts to the total exclusion of the Middle East and all other non-European theatres.⁵

In the Caucasus, the region around Sarikamis, where much of the initial fighting in 1914-1915 took place, exemplified both the ecological challenges involved, as well as the failure to adequately take them into account when planning military operations. Topographically situated in a valley between two high mountain ranges, the zone of operations was remote from road and railway connections and other lines of communication. Moreover, it was subject to extremely harsh winter conditions, with heavy snows and temperatures plunging to minus 30 degrees centigrade. Yet large-scale fighting between the Russian and Ottoman armies commenced in late-November 1914 and lasted through to early-January 1915, during which period advancing Russian forces found 30,000 frozen bodies in and around Sarikamis alone. The leading British military historian of the First World War, Hew Strachan, rightly observes that ‘it was the terrain and the weather, and the failure to plan for these, not fighting the Russians that broke the Turkish 3rd army’.⁶

Elsewhere, similar issues manifested themselves in different ways. In the largely desert terrain of Mesopotamia and Egypt, climatic difficulties arose primarily from the extreme heat, rather than cold, although freezing conditions proved a hindrance in the Judean hills in the advance through Palestine to Jerusalem in December 1917. In Mesopotamia, the advance of British and imperial forces northward from Basra toward Baghdad began in April 1915 and continued throughout the summer heat. Similarly, in Egypt, their advance eastward from the Suez Canal through Sinai to Palestine in 1916 only began in earnest in June, with a major skirmish with Ottoman forces occurring at Romani in August. A letter written home from a British Officer in the Camel Transport Corps vividly described the effects of a march undertaken during the heat of the day in Sinai in July 1916: ‘nearly every Englishman and scores

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of natives got sunstroke and many died, both men and camels … It was a pitiful sight, the poor devils fainting with thirst, heat and wariness, falling out or plodding on blindly.\textsuperscript{7} These difficulties later assumed a new form, as operational setbacks in both campaigns for a time dictated the place and timing of further operations. This was most evident in the three British-led attempts to relieve its besieged garrison in Kut (in Mesopotamia) between January and April 1916.

Problems of terrain were a further complicating factor in the Egyptian and Mesopotamian campaigns owing to the near-total lack of infrastructure in the desert. In Egypt, the advance across the Sinai Peninsula took the Egyptian Expeditionary Force away from the Suez Canal and its associated communications and supply lines. The soft and sandy desert soil presented a particular challenge as it initially proved impassable for wheeled transport unless fitted with special wooden blocks called pedrails.\textsuperscript{8} Prior to the completion of the desert railway from the Canal base at Qantara to the border town of El Arish in February 1917, this created a dependency on camel transport for supplying and maintaining the advanced positions in the Sinai peninsula. This reliance on camels extended to water supplies, as local water sources were virtually non-existent east of the post at Katia, only 28 miles from the Suez Canal and completely inadequate for a large force of any kind.\textsuperscript{9}

By contrast, in Mesopotamia the line of advance followed the route of the Euphrates and Tigris rivers, as they provided the sole route of penetration for invading British-led forces. However, the early operations conducted by the Mesopotamian Expeditionary Force were severely constrained by the paucity of information available in India (the operational and administrative base for the campaign until 1916) on the hydrological and navigable condition of the rivers. British-Indian planners were taken by surprise when the Euphrates proved too shallow to be navigable by military craft. Meanwhile, on the Tigris, they only belatedly realised that ‘the method of navigation and type of craft required are quite unique and unlike anything employed on the inland waterways of India’.\textsuperscript{10}

\textsuperscript{7} Letter No.105, The First World War Letters of Lt J.W. McPherson, Volume XI, 80/25/1, Imperial War Museum, London.
\textsuperscript{10} Aylmer Haldane, \textit{The Insurrection in Mesopotamia, 1920} (London: Blackwood, 1922), 120.
Climate and terrain intersected on numerous occasions during the campaigns. The Mesopotamian rivers experienced strong seasonal variations in depth and strength of current. Melting snows upriver caused widespread spring flooding yet the summer heat led the rivers to fall to a depth of only four or five feet in the autumn. These placed important constraints on strategic, tactical and operational movements throughout 1915 and early-1916. A British official stationed in Basra graphically captured the scale of the problem as he described how the annual spring flood transformed the alluvial soil into ‘a particularly glutinous kind of mud … in which cars and carts stick fast, and horses and camels slide in every direction’.11

Conversely, the advance upriver toward Baghdad in 1915 occurred between September and November, when the Tigris was at its lowest, and most unsuited to the river craft that provided the primary logistical line to the supply bases in Basra. In early 1916, adverse weather played a direct role in all three operations to relieve the besieged British-Indian garrison at Kut al-Amara. The urgency of the situation dictated that operations take place without regard for climatic or ecological conditions. Consequently, the relief operations took place during the height of the spring floods, and were further hampered by heavy rain. The official British eyewitness to the Mesopotamia campaign, Edmund Candler, wrote that after the failure of the first attempt in January 1916, ‘there was a freezing wind and the wounded lay in pools of rain and flooded marsh all night; some were drowned; others died of exposure’. Later, in April 1916, the third attempt occurred in conditions in which ‘the water was clean across our front six inches deep, with another six inches of mud … the second-line of trenches was knee-deep in water; behind it there was a network of dugouts and pits into which we foundered deeply’.12

British forces made similar errors of judgment with regard to climatic and ecological factors in Palestine in 1917-18. Logistical and administrative reorganisation meant that the advance northward from Gaza toward Jerusalem did not begin until 31 October 1917. The late season meant that the troops, their support personnel and animal transport suffered greatly from freezing rain and wintry conditions as they passed through the Judean hills in November and December. Appalling weather nearly derailed the advance as tracks and roads became impassable, and many men and animals fell victim to exposure and frostbite. Conditions were exacerbated by the fact that the soldiers and labourers lacked appropriate cover or winter clothing, and a contemporary observer marvelled that the Egyptian labour units ‘did not desert in a body to the enemy. They could hardly have been worse off in Turkish captivity.’13

11 Hubert Young, *The Independent Arab* (London: John Murray, 1933), 44.
13 Coates Ulrichsen, *Logistics and Politics*, 44.
At Gallipoli, the failure of the initial Anglo-French naval attempt to force its way through the narrow Strait of the Dardanelles and make its triumphant way to Istanbul meant that a land attack had hurriedly to be prepared. Between April 1915 and January 1916, a patchwork of isolated beachheads served as the jumping-off points for successive British and ANZAC (Australian and New Zealand Army Corps) offensives against Ottoman positions on the high ground overlooking the beaches. One such landing (X beach in Cape Helles), for example, consisted of a strip of sand two hundred metres long and ten yards wide. Lacking land-borne communications and mutually supporting lines of supply, the small beachheads rapidly became clogged with jetties, encampments, makeshift field hospitals, improvised forward headquarters and supply depots. Furthermore, the steep cliffs offered the Ottomans a vantage-point from which to pour down fire on the beachheads from up to three sides.14 Ellis Ashmead-Bartlett, the outspoken war correspondent attached to the campaign, later wrote that ‘No army has ever found itself dumped in a more impossible or ludicrous position, shut in on all sides by hills, and having no point from which it can debouch for an attack, except by climbing up them.’ 15 Forced by necessity to campaign in this inhospitable terrain, and worn out by military fatigue that affected the Ottoman forces just as much as the British and ANZAC troops, the campaign ended with a violent thunderstorm in late-November that flooded both sides’ trenches and positions, and an intense blizzard that inflicted thousands of casualties through frostbite and exposure. The ferocity of the wintry weather played a significant role in forcing the issue of evacuation in the minds of senior British civilian and military leaders, and led to the remarkably successful pullback in December 1915 and January 1916.16

Campaigning in hostile terrain was not, of course, unique to the Middle Eastern zones of combat. The fighting that took place in East Africa imposed physical and medical hardships placed on combatants and non-combatants that arguably exceeded those in any other theatre of war.17 In Europe, the British offensives in Flanders in the autumn of 1917 provide a particularly vivid example of the ecological and climatic challenges in other sectors. Nevertheless, the fighting on the Western Front took place in an industrialised context. This existing infrastructure facilitated the mass-production of goods that supplied and transported the military machinery up to the

battlefront, which (instead) is where problems began to mount. In the Middle East, the difficulties of conducting an industrialised war, in which motorised transport, heavy artillery and airplanes gradually assumed greater prominence, magnified many times the logistical and administrative complexities. These challenges hampered operational fluidity and held back the possibilities for speed and tactical manoeuvre offered by the otherwise more open terrain.18

Logistics and Administration

The challenges described above magnified the already-immense logistical challenges posed by the scale and complexity of mass, industrialised warfare. Works by John Lynn and Martin van Creveld have added important detail to the logistical dimensions of industrialised conflict. Lynn examined the rapid technological changes brought about by the industrial revolution in Europe and North America in the nineteenth century. These, he argued, transformed ‘both the means of transport and the items consumed’ and ‘redefined modern logistics’ and, with it, the nature of modern warfare.19 Meanwhile, van Creveld suggested that the First World War revolutionised the concept of logistics as machine-produced goods replaced food and fodder as the main items of consumption. This created new dependencies on factories and rail- and road-based lines of supply and transportation, effectively tying the armies to their logistical networks.20

Numerous factors complicated and magnified the logistical and administrative difficulties facing belligerents in the Middle Eastern theatres of the war. On a ‘human resources’ level, the campaigns in the Middle East were very much secondary to the central focus of the war in Europe. This was as true of the Ottoman Empire, for whom developments in Palestine and Mesopotamia did not pose the same regime threat as the fighting in the south-eastern Balkans, as it was for the French, British and Russians. For this reason, the military personnel despatched to the Middle East were frequently inferior in quality to the elite resources sent to the main fronts. In 1917-18, for example, the Ottoman high command starved the Palestine and Mesopotamia fronts of resources as their attention turned to the opportunities for pan-Turanian expansion in the Caucasus and Persia following Russia’s exit from the

18 Coates Ulrichsen, Logistics and Politics, 44.
This extended to the non-combatant and administrative support as well. For their part, British officials regarded the Indian Expeditionary Force which arrived in Basra in November 1914 as containing units unfit for European service, as well as being devoid of any forms of land transport.22

These problems were compounded by the ecological and climatic issues described in the previous section. The scarce availability of local resources at the onset of military operations placed great strain on logistical machines to supply and transport the military forces. So, too, did the tools of industrialised warfare, which greatly increased the demands on the cadres of local man- and animal-power, and food and fodder initially required to construct the lines of communication and supply. In addition to the relative absence of roads or railways (which meant the majority of supplies initially had to be carried into theatre), the creation of transportation networks added greatly to demands on local resources, as the construction material also had to be manhandled into place over long distances and harsh terrain.

An example of the difficulties facing combatants is the Ottoman attempts to supply its forces operating in the Caucasus and Mesopotamia. Both regions were as far from Istanbul and the industrial centre of the empire as possible. Their peripheral status was further complicated by the underdeveloped railway network which barely extended beyond modern-day Turkey (with branch lines to Damascus and northern Palestine, and the famous Medina narrow-gauge railroad). This meant the Ottoman troops fighting the British-Indian armies in Mesopotamia and the Russians in the Caucasus were separated by up to 400 miles of desert and mountain respectively from their nearest railhead. As with other combatants in the Middle East, the Ottoman forces therefore relied on local man- and animal-power and—on the rivers of Mesopotamia—on primitive river craft constructed, as they had been for centuries, from animal hides.23

British logistics were complicated by the need to meet the burgeoning demands of simultaneous campaigning in Gallipoli, Salonika, Mesopotamia and (from 1916) Palestine. Egypt and India developed into the primary supply and administrative hubs for the campaigns. These multiple requirements stretched the limited existing resources of the Force in Egypt and the Army of India to their limits as they assumed

responsibility for maintaining the maritime security of the British Empire. The Government of India raised and dispatched four Indian Expeditionary Forces to France, East Africa, Egypt and Basra between August and December 1914. This exhausted its pre-war reserves of officers, transport cadres and other non-combatant branches such as medical personnel, and British civil and military leaders in India feared the Indian Army’s organisational and logistical capacity was nearing breaking-point. Indeed, in March 1915 the Viceroy of India, Lord Hardinge, felt that his military resources had been denuded to the extent that ‘India was left with practically no margin to meet unforeseen circumstances’. He thus informed London that India had done its duty to the empire and added that ‘it is quite impossible … to do more’.24

In Egypt, the rapid build-up of British, Indian and Australian and New Zealand (ANZAC) forces in late-1914 and early-1915 similarly threatened to overwhelm existing resources. The haphazard arrival of military units played havoc with the small British garrison and its modest network of logistical and administrative facilities, while in 1915 the planning for the campaigns at Gallipoli and (subsequently) Salonika further increased the sense of looming chaos. Personnel acting on behalf of the Mediterranean Expeditionary Force (fighting at Gallipoli) and the Force in Egypt competed against each other for resources on the open market.25 This confusion impacted the conduct of operations at Gallipoli as the lack of suitable deep-water ports in the eastern Aegean meant that Alexandria became its main supply base. An advanced base was established at the port of Mudros on the Aegean island of Lemnos and 120 transport ships maintained the force of 75,000 men in rations, ammunition and reinforcements of troops and pack animals.26

Matters reached a head as the Anglo-French failure to break through the Straits led to a stalemate at Gallipoli. A major new history of the campaign published in 2011 by the Imperial War Museum’s Oral Historian, Peter Hart, noted how it consisted of ‘troops from all over the world, thrown together with no planning or forethought … with the various units broken up on different ships and their equipment randomly intertwined below decks’.27 Considerable difficulties confronted commanders in supplying the five beachheads with personnel, ammunition, foodstuffs and water

24 Coates Ulrichsen, Logistics and Politics, 28.
26 Letter from John Maxwell to Sir Ian Hamilton, 31 March 1915, Papers of Sir Ian Hamilton, 7/1/15, Liddell Hart Centre for Military Archives (LHCMA), London.
stocks. By July 1915, the commander of the Mediterranean Expeditionary Force, General Sir Ian Hamilton, was ‘in despair’ at the lack of labour and insufficient lighters to unload the transport ships from Egypt. This, he wrote, meant that ‘ships arrive carrying things urgently required, and then, before they can be unloaded, sail away again … with all the stuff on board’. He added that ‘there are ships containing engineering plant that have been five times out here and five times have gone away again without anyone being able to unload them owing to want of lighters’.28 Hamilton confessed to Sir John Cowans, Quartermaster-General at the War Office in London, that ‘I worry just as much over things behind me as I do over the enemy in front of me’.29

The conduct of large-scale industrial warfare across the large open spaces of sea, desert and mountainous terrain of the Middle East and Caucasus underscore the uneasy relationship between the logistical requirements of modern conflict and the more ‘traditional’ and primitive means of supplying them. This adds an important qualification to van Creveld’s assertion of a logistical revolution that took place during the First World War. On the contrary, the campaigns in the Middle East remained highly reliant on local resources—of food and fodder as well as manpower and animals—until very late in the war. Notably, the belated introduction of mechanised transport and substantial road and railway networks in 1917-1918 did not lessen dependence on these items. Instead, they required significant additional labour to construct and maintain them, thereby demonstrating how industrial requirements actually augmented (rather than replaced) demands on traditional resources.

Logistical requirements were interlinked with military demands on locally-produced resources necessary to sustain the war effort of each belligerent. The logistics of industrialised warfare as it evolved required combatant states to out-produce as well as out-fight their enemy. During the war, the penetrative power of the wartime state expanded (at different paces) as grand strategy gradually encompassed the mobilisation of national economic, commercial and human (non-combatant) resources. In the European powers this built upon existing bureaucratic and institutional structures that provided the framework for moves toward forms of ‘total war’. A different challenge faced civil and military planners away from the consolidated structures of European states. Both political constraints and industrial limitations significantly restricted the organisational capabilities of the Ottoman and

28 Letter from Sir Ian Hamilton to Lord Kitchener, 15 July 1915, Hamilton papers, 7/1/6, LHCMA.
29 Letter from Sir Ian Hamilton to Sir John Cowans, 2 July 1915, Hamilton papers, 7/1/7, LHCMA.
Russian states as well as the Anglo-Indian imperial system as it evolved after the Great Rebellion of 1857.

Important contextual factors inhibited the preparedness for—and conduct of—military operations in the Middle East although Erickson has emphasised how Ottoman soldiers (if not their support services) were of a very high calibre and demonstrated their resilience throughout the war, often in appalling conditions.\(^{30}\) Ottoman, Russian and British-Indian policy makers all faced shortcomings in their ability to organise and extract societal resources, a difficulty made more pronounced by the location of the campaigns in the most peripheral regions of the Ottoman Empire. A small local manufacturing base hampered Ottoman production of war materials such as pig iron, steel, chemicals and refined petroleum products. Moreover, the Empire’s sole gunpowder factory, shell and cartridge factory, and cannon and small arms foundry were all located in the vicinity of Istanbul. Consequently, the war material needed to be transported across hundreds of kilometres of poor roads and incomplete railway networks to the battlefronts in the east.\(^{31}\) In addition, the more immediate danger to the Empire posed by the campaigns at the Dardanelles and in Macedonia meant they took priority over Mesopotamia and Palestine in 1915-1916, while following the Russian withdrawal from the war in 1917 official attention turned to the possibility of making territorial gains in the Caucasus.\(^{32}\) Nevertheless, in spite of all these constraints, the Ottoman Empire managed to sustain an albeit-faltering war effort for four long years, repel the Gallipoli attacks in 1915, and tie up very large numbers of Russian and British forces in the Caucasus, Palestine, and Mesopotamia. As the Turkish economic historian Sevket Pamuk has noted, ‘despite all these shortcomings, it is remarkable that the Ottoman war effort did not experience a total collapse’ as “the Ottoman side managed to stay in the war and continue to hold its own on most fronts until the end in 1918.”\(^{33}\)

The Russian war effort was also focused elsewhere. Battles on an enormous scale took place in East Prussia against the Germans and in Galicia against the Austro-Hungarian Empire. By early 1915, Russia had lost more than one million soldiers and much of its industrial and agricultural heartland, as well as twenty million inhabitants, lay under enemy occupation. Further battles in the summer and autumn

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\(^{30}\) Erickson, Gallipoli & the Middle East, 18-19.

\(^{31}\) Sevket Pamuk, ‘The Ottoman Economy in World War I,’ in Broadberry and Harrison, Economics of World War One, 116.


\(^{33}\) Pamuk, ‘Ottoman Economy in World War I’, 131.
meant that one and a half million soldiers were in enemy captivity, to say nothing
of those killed and wounded, with 90,000 surrendering on one day in August 1915
alone.\footnote{34} It was against this backdrop of an existential threat to its very survival that
the Russian war effort in the Middle East and Caucasus unfolded. These areas had
been considered secondary in Russian pre-war military planning and were viewed
through the prism of internal security rather than conflict with the Ottoman Empire
or Persia. A major local complication was simmering centre-periphery tension which
escalated into a violent backlash in 1916 by Muslim communities in Central Asia
against conscription into the Russian Army.\footnote{35}

Mobilisation in India was held back by a set of political constraints imposed
by the British authorities and reinforced in the years after the 1857 rebellion. The
mutineers’ attempt to capture the Ferozepore Arsenal alerted British officials to the
dangers of creating a military-industrial complex in India. Furthermore, the Peel
Committee established after 1857 to examine measures to prevent another mutiny
breaking out recommended that the post-mutiny Indian Army be confined to
internal security duties requiring small quantities of low-grade weaponry.\footnote{36} These
decisions considerably hampered the expansion of the arms industry in India for
the next half-century. British policy prioritised Indian de-industrialisation and
conspicuously under-utilised its abundant natural resources and manpower. This
ensured that India lacked skilled labourers, technicians, supervisors and managers,
in addition to engineering and metallurgy factories and machine-building facilities,
as virtually all plant, equipment, stores and skilled personnel had been brought in
from abroad before 1914.\footnote{37}

British insecurity about their position in India therefore translated into a fear
of training an indigenous pool of military and technological expertise among
Indians. Armament factories were particularly affected and consequently their
output remained tiny, and the Indian Army remained reliant on Britain for technical
expertise and machinery. In its year of peak production in 1908-9, the Ferozepore
Arsenal, the largest in India, produced a mere 12 artillery pieces and 22,000 shells.\footnote{38}

\footnote{34} Martin Gilbert, \textit{A History of the Twentieth Century: Volume One: 1900-1933} (London:
\footnote{35} Strachan, \textit{First World War}, p.715.
\footnote{36} Kaushik Roy, ‘Equipping Leviathan: Ordnance Factories of British India, 1859-1913’, \textit{War in
History} 10:4 (2003), 400-01.
\footnote{37} M.D. Morris, ‘The Growth of Large-Scale Industry to 1947,’ in D. Kumar and T. Raychaudhuri
\footnote{38} Roy, \textit{Equipping Leviathan}, 400.
This introduced an additional layer of complexity into the logistical machinery as many items required for Mesopotamia simply could not be obtained in India but had to be ordered (and shipped) from the United Kingdom first. In the case of river craft desperately needed for Basra in 1915-1916, the resulting delay in delivery had dire consequences for the Indian Expeditionary Force as it struggled (and failed) to relieve the besieged garrison at Kut al-Amara.39

Local Resources and the War at Sea

The shortcomings in industrial resources and extractive capabilities listed above took on greater significance as the fighting dragged on. Any early aspirations that the war might be short were quickly disabused, as early as September 1914 in the case of the belligerents on the Western Front. By the time the Ottoman Empire entered the war on 2 November, the First Battle of Ypres was well under way, signalling the end of mobile operations and the solidifying of entrenched positions in France and Flanders, while the battles on the Eastern Front assumed a still-greater order of magnitude. Thereafter, the launching of submarine warfare and economic blockade preyed on vulnerabilities in the lengthening lines of communications and supply as the war spread to the Middle East and Africa. This placed a premium on producing locally-produced resources and mobilisation of man- and animal-power in order to alleviate the strain on overstretched shipping and land-borne transportation networks.

A major recent volume on the economics of the First World War emphasised the significance of economic factors to the outcome of the conflict. Stephen Broadberry and Mark Harrison argued that ‘the outcome of global war was primarily a matter of the levels of economic development of each side and the scale of resources that they wielded’.40 This built on earlier pioneering research by Avner Offer and Christopher Wrigley into the economic dimension of the war. Offer highlighted the existential aspect of maintaining shipping routes and sea lanes for the imperial powers, particularly Britain, for whom ‘the transport and supply of land forces, even across the Channel, to say nothing of the long hauls across the Atlantic and Indian oceans, depended on the Royal Navy’s capacity to secure them’.41 This was a logical extension of developments in the international trading system before 1914

39 Coates Ulrichsen, Logistics and Politics, 46.
40 Stephen Broadberry and Mark Harrison (eds), The Economics of World War I (Cambridge: Cambridge University Press, 2005), 1.
that internationalised the production and distribution of commodities such as foodstuffs (particularly grain) according to the principle of comparative advantage. Thus, Wrigley noted how the war disrupted the relationship between the European industrialised ‘centre’ of the international economic system and the comparatively under-developed ‘peripheral’ areas.42

Economic dislocation had local and regional, as well as international, repercussions, and its impacts were magnified considerably in areas where the margin of subsistence was already thin. These included the cutting-off of intra- and inter-regional trade routes as the Ottoman Empire and the Caucasus became divided into warring spheres of influence, the effect of economic blockade and imposition of massive demands on local resources arising from the presence of thousands of additional military mouths to feed, and competition between overlapping campaigning and agricultural calendars for labourers and animals. An uneasy balance thus developed between civilian and military demands for resources. This did not leave much room for error and the fragile equilibrium broke down on numerous occasions during the war. The famine that struck Syria, Lebanon and parts of Palestine in 1915-1916 was the most pronounced example of the economic dislocation caused by the war. However, by 1918, people throughout the region, from North Africa to Persia and India, were facing conditions of real hardship and acute starvation.

Destabilising combinations of these factors interacted in different ways to hit individuals and communities throughout the region. Their impact was compounded by the difficulties of transporting supplies to (and between) the battlefronts throughout the war. As the previous sections made clear, the relative absence of transport infrastructure or industrial resources in the Middle Eastern battlefronts meant that almost all supplies and reinforcements initially had to be brought into position over long lines of communication. British supplies for the campaigns in Mesopotamia and Palestine had to navigate either the Mediterranean (for supplies coming from the United Kingdom) or Arabian Sea routes (for supplies from India). Ships transiting the Mediterranean were vulnerable to enemy U-boats (leading in mid-1916 to the temporary re-routing of transports to the much longer Cape route), while shipping from India for Mesopotamia was complicated by the seasonal Arabian Sea monsoon as well as wholly inadequate port facilities in Basra until 1917.43 The Ottomans also

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depended greatly on seaborne supplies as major shortcomings in road and rail-based infrastructure meant that the bulk of internal and external transportation and trade had been carried by sea before 1914.\textsuperscript{44}

The early stages of the campaigns suffered from bottlenecks created by insufficient port facilities to receive and send on all the logistical requirements of modern warfare. Previous sections alluded to the difficulties of landing stores at the Gallipoli beachheads. Elsewhere, a major base, supply depot and trans-shipment hub was constructed at Qantara, on the Suez Canal, to service the British forces in Sinai and Palestine, while in Mesopotamia, a visiting British delegation to Basra found, as late as 1916, that harbour installations were ‘very remarkably absent’ from the major base for the British-Indian struggles at Kut al-Amara.\textsuperscript{45} The initial absence of wharves and jetties meant that transports lined the Shatt al-Arab awaiting their turn while stores were first unloaded onto lighters and then a second time onto the shore, and—in many cases—further loading onto scarce river craft for transport up-river This labour-intensive and time-consuming process was made more difficult by the innumerable creeks punctuating the shoreline and hindering lateral onshore communications. Annual flooding each spring constituted a further obstacle to port development, leading one contemporary chronicler to describe ‘the familiar Mesopotamian conditions … while there was too much water for the Army there was not enough for the Navy’.\textsuperscript{46}

As the war continued and the campaigns expanded in scope, the nature of the shipping problem evolved. From an issue of initial physical constraint it developed into one of insufficient capacity. This occurred as requirements for manpower, materiel and other resources continued to increase while conditions for international shipping worsened. These intersecting challenges reflected the rapid ‘mission creep’ in the extra-European campaigns as they expanded from initial ‘sideshows’ into major military commitments. By 1916, all belligerents felt the impact of these diverging trends, with routes through the Mediterranean especially hard-hit. German and Austro-Hungarian U-boats operating from seven bases along the Adriatic coastline wrought havoc on Entente merchant and naval vessels plying between Marseilles and Taranto (in Italy) and Egypt. During the last quarter of 1915, a mere four U-boats sank 21,000 tons of shipping, but poor liaison among British, French and Italian naval commands, and a lack of available convoy escort destroyers, complicated effective

\textsuperscript{44} Pamuk, \textit{Ottoman Economy}, 115.  
\textsuperscript{45} Coates Ulrichsen, \textit{Logistics and Politics}, 45.  
In December 1915, the Chief of the Imperial General Staff in London, General Archibald Murray (and soon to be Commander-in-Chief of the Egyptian Expeditionary Force), drew the attention of Secretary of State for War Lord Kitchener to the submarine menace in the Mediterranean. In bemoaning the lack of coordination between the British, French and Italian navies in the Mediterranean, Murray quipped that 'all I know is that there are more Naval Commanders-in-Chief knocking around here than there are submarines!!!' 

Shipping difficulties worsened considerably from 1916 onward. British, French and Italian shipping losses in the Mediterranean escalated in 1916 to a peak of 113 ships and 248,018 tons of cargo between October and December as inter-allied cooperation remained slack. In December 1916, the British General Staff submitted a memorandum which baldly acknowledged that in Egypt ‘we are faced with a situation which amounts practically to a break-down in our shipping arrangements … we have, in fact, reached a stage where the available shipping is inadequate to meet requirements’. At an Anglo-French conference in London later in the month, Britain’s First Sea Lord, Admiral John Jellicoe, then warned of great difficulties in finding sufficient merchant shipping to supply the forces in Salonika and Egypt. He added that it was even harder to provide escorts for transport and troop ships, and that these difficulties made it nearly impossible to consider any increase of force in either theatre.

In January 1917 the German Chancellor, Theobald von Bethmann Hollweg, announced the beginning of a strategy of unrestricted submarine warfare. This built on earlier developments in the war at sea. German U-boats had targeted commercial shipping entering and leaving British waters with increasing intensity since early in 1915. The sinking of the RMS Lusitania off the Irish coastline on 7 May 1915 was the highest profile early casualty, though it raised questions as to what constituted a legitimate target as the liner was carrying substantial quantities of small arms ammunition destined for the British war economy, in addition to its 1959 passengers and crew. 128 Americans were among the 1198 deaths and the sinking caused outrage in the United States and a severe deterioration of relations with Germany,
although not to the point of a declaration of war.\textsuperscript{52} German military pressure for a policy of unrestricted submarine activity increased throughout 1916 owing to the impact of the British blockade of German ports and the outcome of the Battle of Jutland on 31 May. Jutland demonstrated that the German High Seas Fleet was not strong enough to defeat the Royal Navy in a conventional battle, and that alternative methods would be required to attack the lines of supply to the British Isles.\textsuperscript{53}

Although the implications of the German decision to launch unrestricted submarine warfare were felt most directly when the United States declared war on Germany in April 1917, it had important consequences for the campaigns in the Middle East. Entente shipping losses from the German-Austrian Mediterranean U-boat Flotilla operating out of Pula (in modern-day Croatia) escalated in the first quarter of 1917. The amount of tonnage lost to the Mediterranean Flotilla and submarine-laid mines rose from 78,541 tons in January to 105,670 tons in February before falling back to 61,917 tons in March and climbing steeply to peak at 254,911 tons in April 1917. Although losses subsequently fell back from this high-point owing to the emergence of counter-measures, the figures for May and June (170,626 and 164,299) remained two- to- three times higher than those of January to March.\textsuperscript{54}

Specific counter-measures were identified at the four-power (British, French, Italian and Japanese) conference that took place in Corfu in late-April 1917. These included recommendations that navigation occur at night along patrolled coastal routes wherever possible, along with greater protection for shipping through the belated deployment of convoys and escorts. Protective cover for merchant shipping and naval transports was especially important on the non-coastal routes that took ships into open water, most notably from Malta to Crete, Crete to Egypt, Malta to Egypt, and Marseilles to Algiers.\textsuperscript{55} Nonetheless, these took time to implement and came too late for the significant expansion in the Palestine and Mesopotamia campaigns, which also occurred in the spring of 1917. The increase in the combatant size and territorial scope of military operations in both theatres created new difficulties of supply and transportation already stretched to the limit. They hastened British moves toward maximising the use of local resources (both in the supply centres of Egypt and India and in the areas under occupation) to alleviate demands on shipping wherever possible.

\textsuperscript{54} Halpern, \textit{Naval War in Mediterranean}, 312.
\textsuperscript{55} Ibid., 345.
In this context, the maximal development of resources available locally became a strategic objective. This was especially the case for the British (and Indian) war effort as the strain of supporting geographically disparate campaigns increased sharply. In addition to meeting the logistical requirements of the campaigns in Palestine and Mesopotamia, Britain and India also had to supply the forces in Salonika and East Africa as well. These burgeoning demands led the Quartermaster-General at the War Office in London, Sir John Cowans, to urge in the summer of 1916 that local resources be utilised as much as possible. The War Office also decided that India would become the supply base for all British and imperial forces east of Suez, and that Indian resources be utilised to meet Mesopotamian demands as far as possible. Near simultaneously, officials in Britain urged their counterparts in Egypt to maximise their own resources of fodder to reduce demands for shipment of this bulky commodity to Sinai, Palestine and Mesopotamia.

Nevertheless, the escalating demands for food and fodder and the imposition of large numbers of additional mouths to feed stretched resources to their limits. In Mesopotamia, Basra and its hinterland were hit hard by poor local harvests in 1912 and 1913. Substantial imports of rice and wheat from India averted a crisis but these ceased with the onset of war in 1914. Elsewhere in the Ottoman Empire, successive poor harvests between 1914 and 1916 and a plague of locusts in 1915 led to conditions of severe famine afflicting the vilayets of Syria, Lebanon and Palestine. Their impact was magnified by the impact of predatory wartime demands for resources. Repressive Ottoman measures restricted the flow of food supplies to the region for fear that they would fall into enemy hands. Moreover, the extractive impact of Ottoman requisitioning of labour, draft animals, cattle and agricultural appliances for military use imposed further strains on the local civilian population, as did the internal displacement of peoples and the disruption to trading routes and patterns.

The uneasy balance between civilian and military access to resources gradually broke down in the face of rising demand and faltering supply. A major complicating factor was the timing of the campaigning seasons each spring, which coincided with

60 Gideon Biger, ‘The Turkish Activities in Palestine During World War I Revised’, in Yigal Sheffy and Shlalu Shai (eds), *The First World War: Middle Eastern Perspective* (Tel Aviv: s.n.), 60-2.
the spring harvest and peak demands for labour. Military demands for labour and
draft animals thus interfered with rural labour markets and the agricultural cycle.
Furthermore, in areas such as Egypt which had been drawn into international
markets and commercialised agriculture, improvements to irrigation ensured that
agriculture had become a year-round activity by 1914. Unlike in nineteenth-century
demands for labour (such as the corvée), an agricultural ‘off-season’ no longer existed,
while the opportunity cost of enlistment rose sharply in 1917 and 1918 as emerging
shortages in rural labourers also drove up agricultural wage rates.61

In Russia, the strain posed by the campaigns against the Ottomans led to a much
heavier regional imprint as the military authorities searched for new sources of
manpower and local resources. This provoked a fierce backlash from the populations
of Central Asia which had enjoyed a relatively high level of autonomy from centralised
demands before 1914. In June 1916, a decree introducing conscription for military
service coincided with the labour-intensive demands of the cotton harvest. This
proved the tipping-point for an uprising of Kazakh, Uzbek and Kyrgyz rebels that
built upon existing sources of wartime hardship and grievance. These included local
peasant communities’ discontent at shortages of manufactured goods and foodstuffs
as well as military purchasing of horses at prices below market levels. Against this
backdrop of escalating anger at local scarcities, the drafting of Muslims for military
service against their co-religionists in the Ottoman Empire provided the spark that
lit the tinder-box. The resulting uprising was brutally put down with between one-
quarter and half a million people forcibly displaced and deported from their homes
in 1916.62

The military footprint sharpened in all theatres of war in 1917 and 1918, not
only in the Middle East. A form of ‘remobilisation’ occurred in the United Kingdom
as strategy evolved toward a form of ‘total warfare’ characterised by more directly
interventionist state activity.63 In France and Russia, rising social tensions led to
mutiny and revolution respectively in 1917, while the impact of the blockade on
German towns and cities tightened.64 The political, economic and social costs of
the fighting took an increasing toll on war-weary populations in every belligerent.
Escalating food demonstrations occurred in Paris in May and June 1917 while

61 Coates Ulrichsen, Logistics and Politics, 123.
62 Peter Gatrell, Russia’s First World War. A Social and Economic History (Harlow: Pearson, 2005),
188-90.
During the First World War (Cambridge: Cambridge University Press, 2002), 12.
Perspective’, in Chickering and Forster (eds), Great War, Total War, 176.
food riots in the Italian city of Turin killed more than 500 people in August as the linkages between food and resource supplies and civilian morale became acutely clear to policy-makers.\textsuperscript{65} Even in these European states, which enjoyed a degree of legitimate political authority that allowed them to make heavier demands on its citizenry, popular acquiescence was begin to reach breaking-point by 1917. In the very different circumstances of the colonial constructions in the Middle East, no such legitimacy existed to buttress these new extractive pressures. Instead, more predatory (and external) institutional structures were imposed to manage and regulate the mobilisation of resources.\textsuperscript{66} Lacking social roots or the local legitimacy to reach down into society, a new dialectical narrative of resistance to power began to emerge across the Middle East.

### The Role of India

Britain's campaigns in the Middle East reflected the strategic importance of maintaining its Indian Empire and the arteries of maritime routes and naval stations that sustained it. A wide range of military, economic and political connections developed during the nineteenth century as the political economy of British India increasingly became linked to strategic developments in the Middle East. By 1914, therefore, an array of ideational and also institutional linkages imparted a degree of cohesion to Britain's imperial periphery, and constituted a reservoir of ties that facilitated and regulated the diffusion of ideas between the dispersed sites of empire. The career of Sir Evelyn Baring (later Lord Cromer) is a notable example of this trans-national network of governing mentalities, as his formative career experiences in India profoundly shaped his vision of rule in Egypt as Agent-General from 1883 to 1907.\textsuperscript{67} Another was Richard Meinertzhagen, who joined the Staff College at Quetta in 1913 and spent Christmas that year travelling through Mesopotamia. In a diary he published in 1960, he recalled how 'the Government of India asked me to collect information about road and river transport, what boats and animal transport are available, roads etc.' He later gained some fame as an intelligence officer in the Palestine campaign in 1917.\textsuperscript{68} Such connections became significant during the Great

\textsuperscript{65} Ian Beckett (ed.), \textit{1917: Beyond the Western Front} (Leiden: Brill, 2009), xii-xiii.
\textsuperscript{68} Richard Meinertzhagen, \textit{Army Diary 1899-1926} (London: Oliver & Boyd, 1960), 58.
War as officials and officers from the imperial civil service and military in India (and Egypt) played key roles in conducting and administering the campaigns in Mesopotamia and Palestine respectively.

In the absence of any meaningful threat to India during the months following Britain's declaration of war on Germany on 4 August 1914, defence planners and strategists in London decreed that imperial interests could best be defended through restoring the balance of power in Europe. This would remove the threat to imperial lines of communications posed by German control over the Channel ports in the Low Countries. The decision underscored how the British Empire depended above all on the maintenance of its maritime supremacy and ability to project its naval power. Accordingly, two Indian infantry divisions (the 3rd Meerut and 7th Lahore Divisions) were dispatched to France (via Egypt) in August 1914, where they played a vital role in stemming the German advance through France at the First Battle of Ypres in November.

Between August and December 1914 the Government of India also assumed responsibility for raising and dispatching four Indian Expeditionary Forces. These sailed to East Africa, Egypt and Mesopotamia in addition to France. Their mobilisation was a response to emerging threats to Britain's maritime security as German cruisers interfered with the flow of men and munitions from the Dominions to Britain. In September 1914, three cruisers—the *Emden*, *Konigsberg* and *Karlsruhe*—played havoc with shipping in the Bay of Bengal, East Africa and Caribbean respectively, and delayed the transportation of troops from Australia and New Zealand as naval escorts had to be organised at short notice. Thus, the elimination of the network of German coaling and wireless stations in East and West Africa and the Atlantic became a short-term priority. By December 1914 this had been achieved through the hunting and sinking of the cruisers in the Indian Ocean and the defeat of the German Asiatic Squadron at the Battle of the Falkland Islands.

India supplied the bulk of the troops and food supplies for these extra-European contingents. This represented a continuation of the Indian Army's pre-1914 function as a strategic imperial reserve. Its new function became necessary in the autumn of

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1914 for two reasons. The most urgent was Britain’s reliance on imported foodstuffs, as detailed in the previous section, which rested on making the sea lanes safe from the threat of disruption. This was related to the second reason, which was to smooth the passage of troops, munitions and supplies from the empire to Britain and the European theatre of war. Crucial to this was safeguarding the security of the Suez Canal following the declaration of war with the Ottoman Empire in November 1914. In this context, the continued control of the Persian Gulf sheikhdoms to safeguard the strategic approaches to India meant that the maintenance of British supremacy in the broader Indian Ocean region became an important imperial objective.73

Nevertheless, India’s capacity to contribute to the war effort was constrained in two significant ways. The first was that the Government of India remained responsible for funding the expansion of the Indian Army and the maintenance of its armies deployed overseas. While this spared the British exchequer of additional strain, it meant that military financing was held back by powerful assumptions among British governing elites concerning the need for a light-touch state in India. Tax revenues were kept at a very low rate (accounting for a mere 5-7 per cent of national income) and public expenditure also was subjected to the prevailing policy of fiscal conservatism.74 Importantly, these policies continued into the first two years of the war even as military (and administrative) requirements on India grew exponentially, creating bottlenecks and a diverging gap between policy intent and capability that culminated in the debacle in Mesopotamia in 1916.

This meshed with the second impediment that held back the mobilisation of Indian resources for the British campaigns in the Middle East, which was the legacy of decades of British policies to de-industrialise India before 1914. During this period, India was transformed gradually from being an exporter of manufactured goods, primarily textiles, to being a supplier of primary commodities and an import market for finished consumer goods. Partially done for reasons of ‘national security’ after the 1857 rebellion shook British rule in India to its core, and partially to protect British commercial enterprise, the net result was that India was denuded of indigenous skilled expertise and industrial capacity, both of which remained almost entirely reliant on British skilled workers for what amounted to the small ‘military-industrial’ complex that did exist in India in 1914.75 It was only later in the war, in

1917 and 1918, when military exigency finally led to a sharp change in the structure of taxation and public expenditure in India, belatedly enabling the Government of India to raise and equip the mass armies of soldiers and labourers that formed the backbone of the Egyptian and Mesopotamian Expeditionary Forces and made possible the rapid advances of late-1918.

For these reasons India became interlinked with the British campaigns in the Middle East at multiple levels. Its wartime experience is therefore a part of this paper, as decisions and events in India had immediate and serious implications for the conduct of the campaign in Mesopotamia, as well as for British military and civilian planners in Egypt and the territory that came under British control in Palestine. As with the contours of British influence in Egypt, the wartime processes of mobilisation and extraction of man- and animal-power and local resources required the colonial state to hastily expand its political footprint and penetrate much deeper into society. A re-working of state-society relations gradually occurred (in both India and Egypt) as the British civil and military authorities embedded themselves within local social organisation and interfered with existing structures and hierarchies of power. This took different forms in each case, reflecting the uneven exposure to centralised control—both British and Ottoman—prior to 1914, as well as the differing ways that British power and influence was structured and projected.

Conclusion

This paper has provided an overview of the major contextual factors that framed the military campaigns in the Middle East during the First World War. Issues of climate and ecology, logistics and administration, and local resources and the war at sea interacted with each other to magnify the impact of the fighting on the local populations involved. So, too, did the mismatch between the voracious demands of modern industrialised warfare and the largely pre-industrial terrain in which the campaigns were fought. Moreover, the location of the fighting often at great distance from population centres meant militaries were reliant on long and vulnerable lines of communication and supply. This increased their dependence upon locally-produced resources yet also necessitated the mobilisation of large amounts of non-combatant man- and animal-power to maintain the military machines in the initial lack of motorised transport.

The experience of conducting industrial warfare in desert terrain, over long and vulnerable lines of supply, thus highlights the uneasy relationship between the logistical requirements of modern conflict and the traditional means of supplying and constructing them. This adds an important qualification to Martin van Creveld’s
assertion of a logistical revolution, as the conduct of the campaigns in the Middle East remained highly reliant on ‘traditional’ items of food and fodder until very late in the war. Even the introduction of large quantities of mechanised transport and networks of railways and roads in 1917-1918 did not lessen reliance on these items, as vast amounts of manual- and animal- power was required to construct and maintain them. Viewed in this context, the fact that the artillery bombardment before the third battle of Gaza in October 1917 represented the heaviest non-European bombardment of the entire war, with a gun concentration equivalent to that of 1 July 1916 on the Somme, testifies both to the complexity and eventual success in meeting the logistical demands in the Middle Eastern campaigns during the latter stages of the First World War.
This is a history conference. It is now my job also to comment on the present, and what happens next. To do that, though, our only source is the past and our interpretation of it, imperfect as it is.

We’re now fifteen years deep into the 21st century. Compared to the turn of the century, the security environment is deteriorating: violent disorder from Eastern Europe to the Levant, the unravelling of Afghanistan, and escalating rivalries in East and South Asia. Maps themselves—with nine dash lines and partitioned borders—are again instruments and symbols of struggle.

How middle powers like Australia respond to this deterioration matters hugely. We should ever rely entirely on the good will of neighbours or distant allies to keep defence spending down. A good red-teaming shows that.

Others disagree—former Prime Minister Paul Keating used to say that Australia must seek its security in Asia, not from Asia.¹

But we cannot bank on the promise that globalisation and international institutions will pacify Asian powers into a tranquil commercial peace. New wealth can heighten, not dampen, ambition and insecurity. China’s adventurism in the South China Sea shows that. And Washington has not shifted over half of its naval assets into Asia in order to combat piracy or drug-dealers. Interdependence can constraint conflict, it’s true, but there are too many major cases of dangerous confrontations—sometimes

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This chapter is based on the conference keynote address. It draws upon the author’s recent work, *The Global Village Myth: Distance, War and the Limits of Power* (Washington, DC: Georgetown University Press, 2015).

spiralling into war—during periods of interdependence to hang Australia’s security on its promise.

Amidst this insecurity there is a darker version of the idea of a shrinking, globalised world. Today’s disorders worry observers not only because of its bloodiness, but because we fear that our world is a dangerously small globe, closing in.

We sense that security is indivisible, there is no over here and over there, that violent threats can spread like a virus. This idea too is dangerous. Inflating threats and trying to pre-empt/neutralise every risk can also lead to exhaustion and overstretch.

History can help put this in perspective. Today I want to give a brief biographical sketch of an idea, the idea of the flat, shrinking world. I’ll argue that we have been here before. The notion of technology killing distance, or removing the protective power of distance, is an old one.

And today, as before, it is one-dimensional and misleading. Distance does still count—but not necessarily in the form we imagine it. If countries like Australia play their cards well, they can make sure that the prospect of threatening its maritime and air approaches remains remote.

The Argument

Rumours of the death of distance have been exaggerated. Distance continues to exert its force and can be a source of security as well as a tyranny.

But in the strategic world, distance is a dynamic creation, not a bounty of nature. We need to work harder to discriminate between physical and strategic concepts of space.

Technology may shrink physical space, it does not necessarily shrink strategic space— the ability to project power affordably, against resistance, across the earth.

For much of the debate, strategic and physical space are jumbled. Robert Kaplan argues, with force, that Geography is taking its ‘Revenge’. But how, precisely, does geography reimpose itself? There is an ambivalence in Kaplan’s use of the term ‘geography’, a master concept that he loads with different meanings at different times.

At one level, Kaplan’s work is a powerful manifesto for renewed attention to maps, showing for example how nature’s unequal dispensation gives China with its 19,000-mile Pacific coastline an ability to radiate power through the open sea in ways denied to Russia, denied warm water access and whose only ocean frontage was historically blocked by Arctic ice. But Kaplan’s ambivalence over what ‘geography’ really means and under what conditions it prevails leads him into self-contradiction. At turns he is fatalistic about geography’s power, framing it as a structural fact that acts on its subjects almost irresistibly. If the earth’s terrain is the base structure and ‘first order of reality; [and] ideas, however uplifting and fortifying, only the second’, the mountains and waters that divide peoples play havoc with their projects. Kaplan points to the earth’s natural barriers, such as the Hindu Kush, as the most impressive force. But at other times he turns this on its head, finding that transformative human inventions count more than nature, that ‘individual acts of men—the building of a canal—prove more historically crucial than the simple fact of geography’. But canals surely involve ideas as well as materials, so here the second order of reality overturns the first. This sounds more like the revenge of technology and human agency, not geography as Kaplan conceives it. At other times he identifies technology taking its revenge over geography and its dividing power, noting that ‘globalization—the information age, the collapsing of distance’—erases spatial barriers in America’s Caribbean backyard.

Because Kaplan conflates geography—that is, the description of the earth—with geopolitics—that is, the study of human interaction with it—these contradictions do not get resolved. Kaplan shifts uneasily between geography as a primordial fact of life that acts on its subjects, with coastlines, mountain ranges and oceans as driving forces of history, and geography as something that humans act on, building canals to transform their world. It’s not clear, then, whether geography or human ingenuity are taking revenge. And it is this worry—the difference between the natural environment and human interaction with it—that we should address.

**Anti-Geography**

A unifying theme of this conference has been that ‘geography matters’; that it imposes constraints and friction on the exercise of military force; that geopolitics (or the struggle for dominance of regions and chokepoints and resources) is taking its revenge; and that distance exerts a tyrannical effect.

Most people here at some level buy into what we call ‘historical security materialism’. By that phrase, I simply mean the spatial dynamics of power, how humans have pursued security from violence in, and through, their natural environment.
But who is disagreeing with us? I think we should ‘name’ the adversary that we, here, are implicitly replying to. And that adversary is a powerful tradition of ‘anti-geography’.

Anti-geographers aren’t literally against studying geography. But they deny that the material environment matters as a first-order reality.

Some of them are technologists, like Philip Bobbitt or Robert Keohane, who believe that new terrorism or tools like cyber-power and the offensive force of electrons are distance-destroying, and know no boundaries.³

Some of them are liberal optimists, like Chris Fettweis or Anne-Marie Slaughter, those who believe that the decisive forces of our time are not geography, but the pacifying logic of global markets, interdependence, non-state actors and institutions.⁴

Some universalists, like Daren Acemoglu, James Robinson and Niall Ferguson, privilege the choices states make as the prime explanation for their success or failure, arguing that polities succeed not because of where they are located or what they have, but because of the institutions they adopt.⁵

Some anti-geographers simply don’t like how geopolitics smells. To them, especially the tradition of critical geographers, classical geopolitics works to naturalise the business of imperial domination. It is historically too close to German militarism, in particular through the link between Karl Haushofer and Lebensraum. After all, it was the Kaiserreich that most intensively turned maps into military tools, employing over 500 officers in a land survey section. As one sceptic notes, ‘Few ideologies are as whimsically all-encompassing, as romantically obscure, as intellectually sloppy, and as likely to start a third world war as the theory of


the history of geopolitics is a history of ‘bad ideas—sometimes mad ideas—that have led countries to wars and recessions’.\(^6\)

What unites these anti-geographers is the ideology most resistant to geographical limitation: liberalism, and its cousin in this context, globalism. This anti-geographic ideology is also lethal, and dangerous, not least because it is so convinced of its own enlightenment.

One of the most imposing critiques of geopolitics came from Australia’s strategic thinker Michael Evans, who wrote in 2005 that Australia’s way of war was not defined by the tyranny of distance, but the tyranny of dissonance, the gap between geopolitical thought in peacetime, centred on the defence of Australia, and the wartime practice of expeditionary wars to uphold the liberal order.\(^8\)

But Evans’ own account shows an ambivalence about distance. On the one hand, he quotes approvingly the claim that today’s security environment is marked by ‘the death of geography, the death of distance, increasing sensitivities and vulnerabilities’. Yet only a few pages later, Evans argues that ‘the primary aim of Australian strategy must be, wherever possible, to seek to counter all threats to the nation’s interests at a geographical distance rather than on home soil’.

There’s a tension here. Has distance been ‘killed’, or should we act to restore it? I agree that prudent defence goes beyond the front door. But without consideration of distance to help guide the national interest, how do we choose where to go? If the world is small and borderless, as his first quote suggests, and location irrelevant, then we are quickly going to find ourselves spread thinly across the earth trying to hold down every potential risk. That is where liberal security, untempered by geography, leads.

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\(^8\) Michael Evans, *The Tyranny of Dissonance: Australia’s Strategic Culture and Way of War 1901–2005* (Canberra: Land Warfare Studies Centre, 2005), arguments discussed at 92, 97.
George Orwell questioned the idea in 1944, after the rapid, mobile war machines of the Axis powers had been blunted across the English Channel, the frozen wastes of the Soviet Union and the waters of the Pacific. Orwell noticed ‘the automatic way in which people go on repeating certain phrases’, like ‘the abolition of distance’ and the ‘disappearance of frontiers’. He might have been writing of today.

**Biography of the Idea**

These issues are not unique to our time. The study of modern geopolitics, indeed, flows from anxiety about this very thing, the dangerous interaction of technology with terrain.

Classical traditions treated geography as a series of limits laid down by heaven, a naturalistic vision of the world where nature was the driving force, that humans had to learn to live with.

But modern geopolitics is a response to the great, revolutionary disruption of the industrial revolution. New tools held out the possibility that humans could master their environments. And then master others.

The father of modern geopolitics in the Anglosphere, Halford Mackinder, was not simply a geographer. He was a technologist, fixated with the rise of (what he believed) was the most momentous technology of his time, the railway.

This could enable a conqueror to seize command of Eurasia, the world’s pivotal power center, harnessing the resources of this vast continental landmass to gain access to the oceans, and bid for world mastery.

The fear of a global power imbalance informed Anglo-American grand strategy in the great wars of the twentieth century. Imperial Japan’s surprise attack on Pearl Harbor in December 1941 persuaded Americans that old geographic barriers were obsolete. President Franklin Roosevelt articulated the new globalism. New long-range capabilities, from naval aviation to airpower, combined with predatory ideologies like fascism, meant that the US faced the threat of encirclement, economic suffocation or even invasion. America could no longer create security through insulation or hemispheric dominance. The dangerous combination of ideology and technology

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9 George Orwell, ‘As I Please’, *Tribune*, 12 May 1944.
demanded a strategy aiming for what FDR called ‘total security’, in a strategy across five continents and seven seas.\textsuperscript{11}

At the centre of the story is not just offensive technologies, but the rise of American power, and horizons, and the national security state. National security supplanted the more limited concept of ‘defence’, America’s outer defences were no longer continental or even hemispheric but extra-regional.

The government’s effort to mobilise Americans around a concept of worldwide security was intellectually assisted by academics such as Edward Mead Earle, Nicholas Spykman and Arnold Wolfers.

This brought about a revolution in cartography. Magazine Mogul Henry Luce used his flagship outlets \textit{Time}, \textit{Life}, and \textit{Fortune} to create new maps visualising a shrinking globe with red arrows threatening an embattled North American continent. The new maps were based not on the optic of the sailor, with the world divided by oceans, or the equator-based Mercator Map but that of the pilot, the world as an unbroken monosphere, with a new North Pole projection, putting the US much closer to Japan and the Soviet Union.\textsuperscript{12} The Eurasian battle ground was now next door.

This mental map also shaped defence planning. While there was a vocal ‘Pacific First’ faction, the globalists carried the day over time. Within the Joint Strategic Survey Committee, that advised the chiefs, they suggested that new weapons required keeping the enemy at maximum distance, while moving US bases nearer them.

America’s perceived frontier grew and grew. One measure of this growth was the debate about retaining a forward base in Iceland. General Stanley Embick, a sceptic, argued that a base in Iceland was inessential and could damage relations with the Soviet Union after the war. Yet he lost that fight. And the reply of Assistant Secretary of War John McCloy’s representative was revealing, that Embrick ‘presents a rather restricted concept of what is necessary for national defence’.\textsuperscript{13}

\textsuperscript{11} President Franklin Roosevelt to Ambassador Joseph C. Grew, 21 January 1941, President’s Secretary’s Files; Diplomatic Correspondence, Box 43, Japan, January–September 1941, Franklin D. Roosevelt Library.


\textsuperscript{13} Joint Chiefs of Staff, National Archives, RG 165 Box 143 Sec. IV Case 115, Memorandum, Lt. Gen. S.D. Embick to Mr J.D. Hickerson, 9 June 1945; Memorandum, Harrison A. Gerhardt [on behalf of John McCloy] for General Hull, 16 June 1945; Joint Strategic Survey Committee, ‘Position That Should Be Taken by the U.S. Relative to Probable Russian Proposals Relative to the Straits, and (2) the Internationalisation of the Kiel Canal’, 4 July 1945.
Here was laid the seductive logic of security without limit, global insecurity and falling dominoes. We can be thankful that the US enlarged its sense of security. But the gradual abandonment of geographical discipline worked its mischief.

The notion that only absolute security without compromise would do, would help propel the intense demands for escalation during Korea and MacArthur’s drive beyond the 39th parallel, the tragic effort to maintain a perimeter defence in Vietnam, and the belief that Saddam Hussein was both an unacceptable threat and easy target, the impatience with distinction between battlefield and strategic weapons.

So where does that leave us today?

Today

This logic was codified by the 9/11 Commission that interpreted 9/11 as a brutal lesson in the need for a ‘Global Strategy’:

National security used to be considered by studying foreign frontiers, weighing opposing groups of states, and measuring industrial might. To be dangerous, an enemy had to muster large armies. Threats emerged slowly, often visibly, as weapons were forged, armies conscripted, and units trained and moved into place. Because large states were more powerful, they also had more to lose. They could be deterred.

Now threats can emerge quickly. An organization like al Qaeda, headquartered in a country on the other side of the earth, in a region so poor that electricity or telephones were scarce, could nonetheless scheme to wield weapons of unprecedented destructive power in the largest cities of the United States.

In this sense, 9/11 has taught us that terrorism against American interests ‘over there’ should be regarded just as we regard terrorism against America ‘over here’. In this same sense, the American homeland is the planet.14

This analysis offers a shallow view of the strategic prehistory before 9/11 and a flawed account of AQ. Before 9/11, deterrence at times failed to deter. Life was full of surprises and intelligence failures, from Japan’s sudden attack on Czarist Russia in 1904 to the shock of the Arab strike on Israel in 1973. Nations did not necessarily lumber slowly into place with ample warning. Even if they did arm and prepare over time, it was often unclear whether mobilisation was defensive in nature. Some

struck in the dead of night with small amphibious forces, as did Argentina over the Falklands in 1982.

The Cold War, which the 9/11 Commission blithely portrays as a period of stability and certainty, was haunted by fears that the nuclear deterrence system would fail through accident, surprise attack or inadvertent escalation.

Al Qaeda did not emerge quickly, but originated in the late 1980s, more than a decade before 9/11. Its hostile intentions against America were on record and its capabilities were visible in multiple prior attacks.

The notion that an attack on urban targets by a known adversary represented an unimaginable ‘black swan’ event is not only baseless but could also be a misleading alibi. It relieves policymakers for their culpability in a failure to act on intelligence warnings. As the Commission’s own inquiries show, the CIA gave repeated warnings to incurious policymakers between 2000 and 2001 with the system ‘blinking red’. 9/11 was a preventable attack that could have been curtailed primarily through competent homeland policing, rather than an eruption from a turbulent security environment the existence of which must be uncritically assumed.

In 2001 Al Qaeda’s weapons did not wield weapons of ‘unprecedented destructive power’. The weapons were mobile phones, box-cutters and commercial airliners. Damage inflicted on 9/11 was not unprecedented in scale or quality. And, contrary to the implicit claim about the irrelevance of distance, it makes a great deal of difference strategically where armed force is generated and projected from.

Looking back, the scale and complexity of the 9/11 attacks were not a harbinger but an aberration. Vigilance is always needed, but the environment makes it far more difficult for a terrorist group to project power with such intensity. For Al Qaeda, the counterpressure of the US and its allies made the world larger.


16 Threat reports before 9/11 had surged from June and July, and in August 2001 Tenet had heard a briefing entitled ‘Islamic Extremist learns to fly’. The 9/11 Commission concluded that ‘In sum, the domestic agencies never mobilised in response to the threat. They did not have direction and did not have a plan to institute. The borders were not hardened. Transportation systems were not fortified. Electronic surveillance was not targeted against a domestic threat. State and local law enforcement were not marshalled to augment the FBI’s efforts. The public was not warned.’ This is also the recollection of the former senior CIA analyst national intelligence officer for the Near East and South Asia Paul Pillar, that ‘the 9/11 disaster occurred despite strong strategic warning’, Intelligence and U.S. Foreign Policy: Iraq, 9/11, and Misguided Reform (New York: Columbia University Press, 2011), 279; ‘Think Again: Intelligence’ Foreign Policy 191 (2012), 51-6.
Distance

It would be easy just to observe the enduring logistical difficulties of projecting and sustaining power. My argument, though, is not primarily about geography, or the description of the earth. Rather, it is about distance, or that which separates. Distance, in the world of power politics, is a strategic property or quality that humans create, and should be distinguished from physical space. It can be a verb, distare (to distance oneself), as well as a noun.

Due to the correlation of force, the English Channel for the Luftwaffe and Wehrmacht in 1940 was far wider than the Atlantic Ocean was for the Conquistadores. Water has no intrinsic ‘stopping power’: it is the interaction of human capabilities that can turn it into a barrier or a highway. In this sense, countries like Australia are not necessarily far away or near due to some natural dispensation.

This may sound like a basic statement. But it is remarkable how often physical and strategic space get conflated.

This matters directly to Australia. One of the most momentous developments on Australia’s doorstep is the growth of Indonesia, and in turn, the growth of its military capabilities. Historically we could be reassured that Australia’s maritime and air edge, and its powerful friends, kept a healthy equilibrium.

But an under-prepared Australia could discover, in the future, that natural distance affords less protection, that the world does seem to be closing in. To keep the relationship safe and productive, Canberra’s responsibility is to ensure that the intermediate space is, so to speak, still fortified.

Asia’s maritime peripheries are a good place to re-examine expansion over/ despite ‘water’ and its so-called ‘stopping power’, especially given the broader fear that a rising China would use its superior weight to impose itself to make East Asia Chinese, where distance would count for little. As I argue, this region has moved into an era of sea denial, where despite (or because) of the ability to project violence over great distances, it is far easier to find and sink ships than transport them securely into another state’s nautical environs. As Christopher Layne, observes, weapons systems in hands of competent and determined enlarge rather than shrink the world strategically.17

In my study of this, in *The Global Village Myth*, I conduct an estimate of a worse case scenario for Taiwan in conditions ideal for China, if China attempted an invasion, if Taiwan was left without American help and, to load the dice further, if China only needed to get ashore a 1:1 ratio of offensive versus defensive forces. Given the current and projected correlation of forces, Taiwan could still inflict costly stings, preserving enough forces under even massive bombardment against an air-dominant China to ‘thin the herd’ of advancing forces. The dynamics of distance would also work in indirect ways. Given the reality of the Taiwan Strait and its careful monitoring, China would face the dilemma of launching a surprise strike but without sufficient preparation of an amphibious force, or the preparation of an amphibious force that would sacrifice surprise.

New weapons and instruments have widened, rather than shrunk, Asia-Pacific space. Surveillance assets in the hands of watchful defenders make it harder to inflict a sudden surprise long-range attack like Pearl Harbor. Tools of ‘access denial’—such as long-range anti-ship missiles—makes it easier for states to fend off enemy fleets and raise the costs of aggression. Even weaker enemies can inflict a devastating dying sting on aggressors. This makes it harder for America to intervene in a war with China—but harder also for China to expand. Conquest over water has become an expensive rarity.

Such are the material demands of modern navies for resupply and maintenance, that forward bases are now more important, not less. Paradoxically, modern tools of access denial place those bases in the cross-hairs. The sophistication of modern military technology that puts such a high premium on bases with their storage tanks, ammunition depots or repair facilities also renders bases at Yokosuka or Okinawa increasingly vulnerable. China’s stocks of long-range ballistic missiles such as the DF-15 and the DF-21 missiles threaten to disable American naval and air bases in the ‘first island chain’ of the western Pacific, in Japan and Okinawa, forcing the US to operate from thousands of miles further eastward, thereby depleting its forces’ staying power.

For Australia, this argument might sound like a pretty maritime and air heavy vision. But a maritime denial posture works better with a strong land presence, driving up the scale of forces an interloping enemy has to project, presenting more and larger targets.

Given the difficulties of overcoming the barriers of strategic space, the security order in East and South Asia needs to move more firmly to one of a watchful, negotiated co-existence between great powers, because militarily and geopolitically, it is unlikely that any one state will be able to dominate. And this is because technology,
when married with prudent doctrine, is enlarging the world strategically at least as much as shrinking it. This development, properly observed and handled, could become the basis for security. Given the difficulty both the United States and China will face in attempting to displace one another to become the sole dominant power in Asia, the key question for both will be how to adjust their statecraft to these constraining realities.

Australia’s defence forces also face the question of working out how to use scarce resources to balance their two traditional roles, as expeditionary forces and continental defenders.

With enough political will—and some more dollars would be nice—countries like Australia can restore strategic distance as a shield. Distance, it turns out, might be a tyranny but is also an asset, and above all, a creation.
Index

A
adaptive culture, 229, 250–251, 252
advisory missions, see also Korean Military
Advisory Group (KMAG)
personail qualities for, 229–231, 250–251, 254–255
aerial photography, 119, 121, 124–125, 126, 132, 133, 140
aerial reconnaissance, 119, 126, 131, 141
aerial survey, 122
Air Ferry route, 259
air superiority, 122
aircraft, reconnaissance, 72–73, 119–120
airfields, 259, 263–264
Al Qaeda, 320–321
American Office of Naval Intelligence, 130
amphibious operations, 71, 129–130, 135–140, 143, 153–159
Antarctica, 186–189
Assam, 8–10, 214
Atlantic, battle for, 114
Australia
geo-political culture, 49–54
geo-political interests, 55–56
zones of climate, people and security interests, 181–192
Australian Naval and Military Expeditionary
Force (ANMEF), 29–30, 32, 36, 38, 41, 44, 45, 48, 51, 52, 54
B
Balikpapan operation (1945), 143–164
allied air operations, 148–150, 158
casualties, 163
logistics resupply, 162
Oboe operations, 151
tactical planning, 156–162
transit to Morotai, 154
balloons, reconnaissance, 120
Burma, 8–10, 214
C
cartography, see maps
charts, maritime, 139, see also maps
chemical warfare, 4
China
Imperial, 193–211
island-building project, 186
precipitation levels in Imperial times, 203–208
temperature change in Imperial times, 203–208
climate change, 18, 166–175
and Australia’s security interests, 181–192
and conflict, 176–181
impact on Asia-Pacific area, 185
CO₂ emissions, 18
Cold Wars, 16–17, 178–179
compensation to Pacific Islanders, 278–286
coral extraction, 263–264
counter-insurgency doctrine
definition, 90–91
in Iraq, 92–95, 96–99, 100–101, 103–104, 106–107, 108–110
principles, 91–112
counterpart system, 231
D
deception, 133
deforestation, 8, 12
demography changes, 174–175
deserts, 292
E
East Africa, 294, 297
Eastern Congo, 11–13
economics of war, 301–302
environmental determinism, 211
environmental refugees, 12
escape kits, 135
European Eastern Front (1914-17)
distances, 63–64
fortresses, 62, 67–68
impact of the environment on the approach
to warfare, 74–75
natural features, 58–60
political borders, 58
railroad system, 60–61, 64–67, 68–69, 74–75
reconnaissance aircraft, 72–73
road system, 62, 69
F
  famine, 302
  Fijian Military Force, 270–271
  fiscal resources, 5
  fisheries, 264–267
  flash spotting, 125
  flooding, 7, 293
  food gardens, 264–267
  food security, 9, 177
  fossil fuel depletion, 18

G
  Gallipoli, 294, 297
  geographic intelligence, 115, 141–142
    Normandy invasion, 135–140
    strategic, 115–117
  World War I, 117–126
  geology and intelligence, 117–118
  geo-political interests, Australia, 55–56
  geo-strategy
    Australia’s culture, 49–54
    definition, 20–21, 144
    Japanese, WWII, 144–148
  global food economy, 4
  Great Acceleration, the, 167
  Guatemala, 14–15

H
  health risks, 13
  historical security materialism, 315
  Hot Wars, 178–179
  Hue, battle for, 78–89
    counter-attack, 86–89
    defence of, 81–84
    geography, 78–81
    Viet Cong attack on, 84–86
  human geography, vii
  hydro-geological studies, 127

I
  India
    independence and partition (1947), 213–228
    strategic importance of, 308–311
  Indian Army, 213–228, see also Punjab Boundary Force
  indigenous people
    defence forces, 270–273
    remuneration of, 276–278, 279–284
    supporting military operations, 269–270, 273–276
    training to fight, 212f, 233–235
  industrial warfare and the environment, 3
  intelligence
    geographic, 115, 117–126, 141–142
    geological, 117–118
    strategic, 115–117
  Intergovernmental Panel on Climate Change, 168

J
  Jorgenson affect, 165

K
  Korean Army Training Center (KATC), 245–246
  Korean War and the environment, 10–11

L
  Labour Corps, Gilbert Islands, 274
  logistics of industrial warfare, 298

M
  maps, see also charts, maritime
    going, 127
    silk, 135
    topographical, 119, 122–123, 126, 137, 139, 143–145
  maritime life, 17
  Marne campaign, 53, 120
  Mesopotamia, 292–293, 296
  Middle East, military operations in World War I
    challenges, 289–290
    climate and ecology factors, 290–295
    logistics and administration, 295–301
  migration, 177, 189, 192
  military advisors, 236
    limitations, 231
  military advisory missions, 230
  Military Intelligence (MI) 9, 135
  mining, 117–118

N
  New Britain, see New Guinea campaign (1914)
  New Guinea campaign (1914), 19–56
    military operation, 22–38
    operational influence of geography, 41–44
    strategic influence of geography, 39–41
    tactical influence of geography, 44–49
  Normandy invasion, 131, 135–140
  nuclear weapons testing, 16

O
  oil fuel, 42
Pacific Islands Regiment, 272
Pacific islands, strategic relationships with, 284–286
Palestine, 293
physical space, 314
precipitation, changes in, 171, 173
Priepet Marsh, 68–69
Punjab Boundary Force, 215, 217, 222, 225–226

railways, 60–61, 64–67, 68–69, 74–75, 289
refugees, 7–9, 14
rivers, impact on military operations, 128
road system, 289
Rwanda, 11–13

sea level rises, 182
sea transport, 302–305
soil erosion, 13
soldier-diplomats, 229
Solomon Island Defence Corps, 272
sound ranging, 125
Special Operations Executive (SOE), 131–132
strategic communications, 40
strategic corporal, 94
strategic geography, 115–117
strategic patience, 108
strategic space concept, 163, 314
strategy and geography, 115–117
submarine cables, 40
submarines, 131, 301, 304–305

temperature change, 171–172
Territory of Papua and New Guinea, 279
Tet Offensive, 78, 89
three-dimensional models, 133
tides, 129–130
timber for construction, 4–5, 9, 15, 260–263

urban environments, 6

V-weapon, 132

water, potable, 117–118, 124, 127–128, 135, 292
water security, 13, 18
weather, 137–138
wildlife and biodiversity, 17
winter, impact on military operations, 128, 291
wireless intelligence, 125, 126
World War I and the environment, 3–5, 117–126, 290–295, see also European Eastern Front (1914-17)
World War II and the environment, 6–10, 127–140

Yosu-Sunchon rebellion, 236–237
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