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Regional Outlook

Burma's Armed Forces: Looking Down the Barrel

Andrew Selth

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About the Author

Andrew Selth

Andrew Selth is a Research Fellow with the Griffith Asia Institute. He has been studying international security issues and Asian affairs for 35 years, as a professional diplomat, strategic intelligence analyst and research scholar. In 2007, he was awarded a PhD by Griffith University and a post-doctoral fellowship by the Australian Research Council. Dr Selth has published four books and more than 70 peer-reviewed research monographs, book chapters and journal articles, most of them about Burma and related subjects. His last major work was *Burma's Armed Forces: Power Without Glory* (EastBridge, Norwalk, 2002).

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Executive Summary

As former US Defence Secretary Donald Rumsfeld stated in characteristic fashion in 2002, some security issues are easily researched and well understood, while others pose much greater problems. Failure to recognise these 'known knowns' and 'known unknowns', or to acknowledge information gaps, can lead to misconceptions and errors of judgement. Inevitably, for those working in this field there will also be mysteries – the 'unknown unknowns'.

The study of Burma's armed forces (or Tatmadaw) is a case in point. Because of its dominant position in Burmese society, the Tatmadaw has attracted considerable attention since the abortive 1988 pro-democracy uprising. Strategic analysts and other observers, however, are still in the dark about most key aspects of the armed forces as a military institution. There has never been a comprehensive assessment of Burma's military capabilities, of the kind demanded by governments, defence forces and strategic think tanks.

Anyone attempting to undertake such a study faces a range of analytical problems, at three distinct levels. At the first level are the various traps lying in wait for all those who engage in intellectual exercises of this kind, and who strive for precision, balance and objectivity. At the second level are the myriad challenges inherent in the study of a country's military capabilities. At the third level are the many difficulties encountered by anyone trying to conduct serious research on modern Burma.

Due mainly to the lack of reliable data, an accurate, detailed and nuanced assessment of Burma's military capabilities is currently impossible. It is difficult even to make confident judgements about Burma's basic order of battle and annual defence expenditure. Also, the internal dynamics of the armed forces, in particular their morale, loyalty and cohesion, are virtually a closed book to outside observers. Yet all these issues are critical to an understanding of Burma's security and the future of the country's military government.

Author's Note

After the Burmese armed forces crushed a nation-wide pro-democracy uprising in September 1988, Burma's official name (in English) was changed from its post-1974 form, the 'Socialist Republic of the Union of Burma', back to the 'Union of Burma', which had been adopted when Burma regained its independence from the United Kingdom (UK) in January 1948. In July 1989 the new military government changed the country's name once again, this time to the 'Union of Myanmar'. At the same time, a number of other place names were changed to conform more closely to their original Burmese pronunciation. The new names were subsequently accepted by the United Nations (UN) and most other major international organisations. Some governments and opposition groups, however, have clung to the old forms as a protest against the military regime's continuing human rights abuses and its refusal to hand over power to the civilian government elected in 1990.

In this paper the better-known names, for example 'Burma' instead of 'Myanmar', 'Rangoon' instead of 'Yangon', and 'Irrawaddy' instead of 'Ayeyarwady', have been retained for ease of recognition. Quotations and references, however, have been cited as they were originally published. Also, formal titles introduced after 1989 have been cited in their current form, such as 'Myanmar Army' and 'Myanmar Police Force'.

The armed forces have ruled Burma since 1962 but, from 1974 to 1988, they exercised power through an ostensibly elected 'civilian' parliament. On taking back direct political power in September 1988, the armed forces abolished the old government structure and created the State Law and Order Restoration Council (SLORC), which ruled by decree. In November 1997, apparently on the advice of a United States (US)-based public relations firm, the regime changed its name to the State Peace and Development Council (SPDC). It still rules by decree, but has announced a seven-step 'roadmap' to a 'discipline-flourishing democracy', the latest step of which was a constitutional referendum held in May 2008.

After the UK sent military forces into the royal capital of Mandalay and completed its conquest of Burma in 1885, Rangoon became the administrative capital of the country. It remains the commercial capital, but in October 2005 the regime formally designated the newly built town of Naypyidaw, 320 kilometres north of Rangoon, as the seat of Burma's government. When they appear in this paper, the terms 'Rangoon regime', or in some cases simply 'Rangoon', are used as shorthand for the central government, including the military government that was created in 1962 and re-invented in 1988. After 2005, the government is referred to as the 'Naypyidaw regime', or simply 'Naypyidaw', to reflect the administrative change that took place that year.

Another term used in this paper is *Tatmadaw* (literally 'royal force'), the vernacular name for Burma's armed forces. In recent years this term has gained wide currency in English-language publications on Burma.

1. Introduction

Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know.

US Defence Secretary Donald Rumsfeld
Press Briefing at the Pentagon
Washington DC, 12 February 2002¹

Since they were made in 2002, Donald Rumsfeld's comments about 'known knowns', 'known unknowns' and 'unknown unknowns' have been the object of much derisory comment in the news media and on the internet. Even President George W. Bush publicly teased him about them.² Yet, in his own inimitable fashion, the then US Secretary of Defence was making a perfectly valid point. Intelligence agencies, strategic think tanks and independent analysts have long known that some security issues are quickly recognised, easily researched and well understood, while others pose much greater challenges. There is rarely enough reliable data to answer all possible questions, or to permit the elimination of alternative interpretations. In addition, there will always be important matters about which observers remain completely unaware – until these issues are discovered or reveal themselves.

These problems assume many different guises, but they immediately become apparent when attempting to make comprehensive assessments of national military capabilities. For, in professional hands, this is a very demanding analytical exercise that goes well beyond the simple lists of equipment and broad generalisations about a country's defence posture that periodically appear in popular journals.

The study of Burma's armed forces (or Tatmadaw) is a case in point. Since General Ne Win's coup d'état in 1962, officials and other observers of the country have monitored public events, commented on certain well publicised developments and pondered observable trends. Defence Attaches posted to Rangoon have followed changes in the military hierarchy and noted arms and equipment displayed to the foreign community. To the extent that these issues have been understood, they can be called 'known knowns'. Increased efforts to research the Tatmadaw since the abortive 1988 pro-democracy uprising, however, have exposed the dearth of reliable information. More is available now than in the past but, in Donald Rumsfeld's terms, there is still a disconcertingly large number of 'known unknowns'. Also, Burma has its share of mysteries, and its armed forces continue to surprise observers, reflecting the many 'unknown unknowns'.

These information gaps have not dissuaded popular pundits and other commentators from making some bold pronouncements about the larger, better equipped Tatmadaw which has emerged in Burma over the past 20 years. Most have claimed 'inside knowledge' and unique insights. Whether or not these claims can be justified, it remains the case that a detailed, accurate and nuanced assessment of Burma's military capabilities – of the kind routinely demanded by governments, defence forces and strategic think tanks – is simply impossible to achieve. It is difficult even to make confident judgements about the Tatmadaw's basic order of battle and annual defence expenditure. There is almost no reliable information about the Tatmadaw's combat proficiency. As for the internal dynamics of the armed forces, in particular their morale, loyalty and cohesion, they too are virtually a closed book.

As a result of these and other challenges, the picture of the Tatmadaw gained from contemporary sources is often inaccurate, incomplete or lacking in nuance. There has been a tendency to accept unverified reports as fact, and to draw broad conclusions from fragmentary and anecdotal evidence. At times, closely reasoned analysis and cautious commentary has been crowded out by ill-informed speculation or politically biased assertion. A few commentators appear to have taken the Naypyidaw regime's claims at face value. Even academic observers normally aware of the pitfalls inherent in the analysis of armed forces have fallen into the traps of equating the acquisition of new weapon systems with the development of new combat skills, and assuming that an expanded order of battle automatically means increased military capabilities.

These problems have helped create a number of myths and misconceptions. Indeed, by surveying the works produced on this subject since 1988, it is possible to gain two quite different impressions of the modern Tatmadaw. At one extreme, it is portrayed as an enormous, well resourced and efficient military machine that completely dominates Burma and threatens regional stability.³ At the other end of the scale, it is characterised as a lumbering behemoth, lacking professional skills, riven by internal tensions and preoccupied with the crude maintenance of political power.⁴ In a few publications both propositions have been put forward. The truth about the Tatmadaw probably lies somewhere between these two extremes but, without hard evidence, determining the precise point on the spectrum is very difficult.

Anyone courageous – or foolhardy – enough to attempt a comprehensive assessment of Burma's military capabilities faces a wide range of analytical problems, at three distinct levels. At the first level are the personal and professional challenges faced by all those who engage in intellectual exercises of this kind, and who strive for precision, balance and objectivity. At the second level are the myriad difficulties inherent in any serious study of military capability. At the third level are the many complex problems encountered when conducting research on modern Burma. If all three are taken into account, the resulting assessment will still be incomplete but it can at least claim to be based on rigorous analysis, and thus publicly defensible. It is also likely to offer deeper insights into the state of the Tatmadaw and the possible future of Burma's military government.

2. The Imperfect Analyst

To know what one knows, and to know what one does not know, that indeed is knowledge.

Confucius
The Analects

The challenges facing strategic analysts in intelligence agencies, academic institutions and think tanks are already widely known. The controversies over the 11 September 2001 Islamist terrorist attacks and the 2003 US invasion of Iraq thrust such issues into the world's headlines, but well before then they were the subject of lively debates among professionals and independent commentators.⁵ This is not the place for an in-depth discussion of esoteric questions relating to the nature of scholarly enquiry, objective empiricism or analytical tradecraft. Suffice it to say that any attempt to make a comprehensive assessment of military capability – regardless of the country targeted, or the nature of the institution or person initiating the study – will be affected by such issues, to a greater or lesser degree.⁶

For example, it has long been recognised that analysts approach these kinds of projects with certain personal views, political inclinations and cognitive predispositions. They may try to set aside such influences, in order to deliver an accurate and balanced result, but such factors are still likely to affect the way the research question is framed, which methodology is employed and how the findings are presented. Lawrence Freedman has also cautioned that it is unrealistic to expect analysts completely to divorce themselves from their social and cultural milieu. Indeed, to avoid what he calls a 'paralysing eclecticism', they need to have a conceptual framework in which to situate their judgements.⁷ Even so, analysts need to be aware that they will always have unconscious biases or deeply embedded preconceptions, which can colour their treatment of an issue.

In Burma's case, some scholars and journalists – and most activists – have eschewed the ideal of objective, value-free analysis and allowed their political or personal views to influence their work. This has resulted in a large number of publications since 1988 that consciously – and at times unconsciously – have aimed to persuade as well as to inform.⁸ Some are unashamedly policy prescriptive, such as those produced by the International Crisis Group.⁹ There can be no objection to this approach, provided that the resulting product is acknowledged to constitute advocacy or policy advice, rather than unbiased journalism, objective academic enquiry or intelligence analysis. If the goal is a politically neutral, empirical assessment of Burma's military capabilities, however, then analysts are obliged to resist the temptation to let their own private philosophies and social agendas influence their judgement.

There is also the problem known as 'group think'. There are often subtle but strong pressures on analysts and commentators to share the conventional wisdom, and to express views that conform to those of the majority – or the most powerful.¹⁰ Since 1988, for example, an informal coalition of politicians, human rights campaigners and expatriate groups have attempted to dominate discussions of Burma in the news media and on internet sites. They have effectively painted a stark picture of the military government and armed forces that has informed both public opinion and official policy. Attempts to challenge this 'new orthodoxy' have usually provoked a harsh response.¹¹ This has inhibited open debate on a number of important issues. It has also discouraged original and independent research on Burma, thus limiting knowledge about the country and a wider understanding of its complex problems.¹²

Another challenge faced by analysts is 'mirror-imaging'. As Mark Lowenthal has written, this is the assumption that 'other leaders, states, and groups share motivations or goals similar to those most familiar to the analyst'.¹³ There is a need to develop an appreciation of different perceptions, different motivations, different rationales and actions based on national differences. For example, Burma's military leaders clearly view the world differently from the governments of many other countries, and perceive Burma's vital security interests in ways not even shared by many of their fellow citizens. It has been argued that, by failing to take this into account, Western policy makers have committed some serious errors of judgement.¹⁴ As Herb Meyer has observed, figuring out how governments and national leaders think – their 'mindset' – is one of the toughest questions to ask analysts, but it is also one of the most essential.¹⁵

Conversely, there is the danger of analysts going to the opposite extreme, and seeing a government or military institution as so foreign and strange that the customary rules of intellectual enquiry are suspended. The fact that Burma is a remote and in many ways unusual place has led some commentators to view it as a rare and exotic subject that is deserving of special treatment, including the use of criteria that they would not apply to more familiar countries. For example, the popularity of astrology, numerology and *nat* (spirit) worship in Burma does not mean that the Tatmadaw's officer corps is dangerously superstitious and prone to irrational behaviour.¹⁶ Also, reports of Burma's poverty, predominantly rural economy and failed state education system does not mean that Burma's armed forces consist largely of ignorant peasants.¹⁷ Yet, political cartoons aside, such caricatures periodically appear in the news media and on websites.

These sorts of problems usually arise through political bias, a lack of emotional detachment or simply weak analytical technique. However, they can reflect more insidious failings. For example, some comments made about Burma's armed forces since 1988 have appeared to reflect a certain arrogance on the part of observers – both civilian and military – from richer and technologically more advanced countries. At times, the rather dismissive attitude shown towards the Tatmadaw has been reminiscent of the thinly disguised racism found before the Second World War, when foreign analysts of Japan's armed forces questioned their ability to use modern weapon systems and to prevail against more 'civilised' countries.¹⁸ Whether it is by foreigners referring to the Burmese, or the other way around, there is no intellectual basis for the adoption of stereotypes.

Clearly, the sorts of challenges faced by strategic analysts and other researchers need to be kept in perspective. Not all publications about the Tatmadaw – whether they are found in books, journals, newspapers or on the web – suffer from all the weaknesses identified above. Indeed, there are many reports and commentaries that observe high standards and make major contributions to the open literature on modern Burma. Also, not everyone is interested in producing the kind of in-depth capability studies that are the usual fare of academic institutions and intelligence agencies. Even so, it is important to recognise that Burma-watchers – including those who comment on the country's armed forces – are only human, and as such are potential victims of the many traps that lie in wait for unwary analysts.

3. Measuring Military Capabilities

Perhaps the only conclusion which a study of previous attempts to estimate the military power of foreign nations reaches, is that a good deal of scepticism is necessary about any assessment which purports to be exact.

Philip Towle
Estimating Foreign Military Power

In addition to the personal and professional challenges faced by analysts looking at Burma's armed forces, there is another completely different set of problems surrounding the assessment of military capabilities. These too have long defied easy solutions.

There is no agreed definition of 'military capability'. Indeed, while they emphasise different things, this term is often used inter-changeably with 'military strength'. Strictly speaking, however, military strength is a quantitative measure that relates to the size and structure of armed forces, and their arms inventories. The term 'military capability' is more properly used for qualitative assessments which go beyond basic orders of battle to encompass a much wider range of factors – such as defence budgets, technological levels, professional skills, combat proficiency, sustainability and morale. Some definitions are even broader. For example, one Australian Defence Force study defines military capability simply as 'the ability to achieve a desired effect in a specific operating environment'.¹⁹

For obvious reasons, states and armed forces have long attempted to measure the military capabilities of their adversaries and anticipate their strategic thinking.²⁰ Such efforts can be traced back to the dawn of history, but the practice took a major step forward in the nineteenth century with the development of defence intelligence departments and the formal appointment of military attaches. Since then, vast bureaucracies have grown, dedicated to the analysis of foreign armed forces. In addition, independent organisations, academic institutions and publishing houses now produce their own estimates of military strength, and ponder the balance of world power. As Philip Towle has observed, 'there are probably more people concerned with such problems today than in all the rest of men's history put together'.²¹

As part of this process, there have been numerous attempts to devise templates for the measurement of military capability. The most rudimentary are field charts to record enemy orders of battle.²² Other formulae are more elaborate. Some include complex algorithms and modelling applications to measure combat effectiveness. In 2000, the RAND Corporation went further and devised an approach that encompassed a series of qualitative judgements, including the ability to undertake a range of specified combat operations. By adding components like the national economy, political leadership and foreign support, it also attempted to measure military capability as a factor in national power.²³ This was on the basis that 'military power expresses and implements the power of the state in a variety of ways within and beyond the state borders, and is also one of the instruments with which political power is originally created and made permanent'.²⁴

Whatever approach is taken, there is no simple or easy way to measure a country's armed forces and make useful judgements about their likely performance under different conditions. There are so many independent variables governing the creation, development, deployment and commitment of armed forces, that no single method can be considered definitive. In addition, regardless of how well a country's military capabilities might be assessed, it is still extraordinarily difficult to predict how those

forces might fare during a conflict. For, as Carl von Clausewitz wrote in 1832, 'war is the province of uncertainty'.²⁵ Regardless of how well structured, armed, trained, deployed and led armed forces might be, there will always be a host of unforeseen – and unforeseeable – factors that will affect the outcome of a battle, or a war.

Most descriptions of armed forces around the world concentrate on their order of battle – their size, basic structure and weapons inventory. Some publications go a little further and include brief descriptions of annual defence expenditures, arms acquisitions and manpower resources. A few mention paramilitary forces that can supplement the armed forces in time of war.²⁶ Despite its limitations, quantitative data of this kind can provide a useful picture of military strength, and permit simple comparisons between the armed forces of different countries. It still does not give an in-depth understanding of a country's real military capabilities, which require much more comprehensive qualitative assessments.²⁷ For, as Angelo Codevilla has written, 'good Order of Battle books are naturally the beginning of military analysis rather than its end'.²⁸ Yet to go further requires much more information and, usually, a major investment in resources.

Assessments of military capability are one of the core functions of defence intelligence agencies. At the strategic level, they seek to understand other countries' threat perceptions, defence policies and foreign military relations. They also attempt to calculate these countries' abilities to support their armed forces, both in peace and war. Close attention is thus given to issues like defence budgets, defence industries, stockpiles of strategic materiel and recruitment bases. Increasingly, there is a focus on scientific skills and the scope for technological innovation. At the operational and tactical levels, military intelligence officers focus more on the strength and disposition of individual units, their missions, weapons holdings, tactics and readiness.²⁹ At all levels, critical judgements need to be made about issues like logistics, training, leadership and morale, which are crucial components of combat performance.

Despite all these efforts, and the remarkable technological advances that have assisted in this process, the assessment of military capability is still an imperfect art. History provides numerous examples of countries failing accurately to gauge the strategic intentions or military capabilities of their adversaries. Often, these failures have arisen due to a lack of reliable data, but there have also been some notable failures of analysis.³⁰ There have also been cases where governments have mistakenly rejected the findings of their intelligence advisors, or have responded with defence policies that were later shown to be inappropriate.³¹ Yet, the importance attached to this activity is such that governments, think tanks and independent observers still routinely attempt to gather information and make assessments about the capabilities of foreign armed forces.

These assessments serve a number of purposes. They help provide governments with warning of possible military threats. Also, by illuminating the current and potential capabilities of other countries – adversaries and allies alike – they support long range planning by defence staffs, and assist in the development of national defence forces. If taken seriously, they can inform the acquisition of new weapon systems, and the pursuit of new skills. Capability assessments also serve as raw material for analyses of a country's threat perceptions, defence policies and international behaviour. A nuanced understanding of the military capabilities of particular states can also provide insights into the wider strategic environment, and alert analysts and politicians to the potential for miscalculation and conflict. For, as Geoffrey Blainey has written, 'wars usually begin when the fighting nations disagree on their relative strength'.³²

Whatever country is chosen, the assessment of national military capabilities poses a number of daunting challenges. If the chosen subject is Burma, however, then the analyst faces yet another range of problems.

4. Researching Burma

This is Burma, and it will be quite unlike any land you know about.

Rudyard Kipling
From Sea to Sea

Before 1988, Burma's armed forces were almost completely ignored by the academic community. They were also accorded a low priority by official analysts of strategic developments in the Asia-Pacific region. During the 1950s, there were concerns about the spread of insurgent communism in Burma, and in the 1960s Ne Win's coup and the installation of a socialist government caught the eye of international observers.³³ After that time, however, Burma's security problems and military capabilities seemed to have little relevance to broader regional or global trends. This situation changed dramatically in 1988, when the armed forces crushed a nation-wide pro-democracy uprising and took back direct political power. Since then, the Tatmadaw has attracted much greater attention from scholars, journalists and, it can be assumed, foreign governments.

Over the past 20 years, few studies of Burma have failed to include a description of the armed forces. Most of them, however, have focussed on the Tatmadaw's dominant political role, most recently its seven-stage 'roadmap' to a 'discipline-flourishing democracy'.³⁴ The regime's long record of human rights violations has also been given close attention. Works on Burma's troubled economy have referred to the allocation of vast resources to the military sector, and the direct involvement of the armed forces in various state and non-state enterprises. Most of these publications have referred *inter alia* to the regime's military expansion and modernisation program, which has seen the armed forces greatly increase in size and acquire a wide range of new weapons and equipment. Yet none of these works have described the armed forces in any depth, let alone made substantive comment on their military capabilities.

There have been a small number of publications devoted to the Tatmadaw as a military institution. Some have taken an historical approach.³⁵ From time to time, Burma-watchers have examined specific security issues such as the growing professionalism of the Tatmadaw, the internal dynamics of its senior leadership, and the increasing gap between the officer corps and the rank and file.³⁶ One scholar has studied the role of signals intelligence in Burma.³⁷ There have also been attempts to determine the Tatmadaw's order of battle.³⁸ Since 2002, however, two books have attempted to provide more comprehensive overviews of the Tatmadaw's development, characteristics and current status.³⁹ They have provided considerable detail on various aspects of the armed forces, but even these two specialised works were unable to provide a detailed and nuanced assessment of Burma's military capabilities.

This lacuna in the scholarly literature seems due mainly to the dearth of reliable data. For, of all the countries in Southeast Asia, Burma is the most enigmatic. Information is scarce, particularly when it relates to national security – a term with a very broad definition in Burma. More than any other regional government, its military regime (known since 1997 as the State Peace and Development Council) is the most opaque. Official statistics cannot be trusted and, while it is possible to glean some useful information from open sources, few foreign analysts speak or read the Burmese language. Only a trusted few academics have been allowed access to the Tatmadaw's archives. While Burmese scholars can enjoy certain advantages, they are usually constrained from revealing all they know and from commenting on issues deemed sensitive by the regime.

Despite their infinitely greater resources and access to privileged information, even foreign intelligence agencies appear to have trouble obtaining sufficient data about Burma's armed forces to formulate detailed capability assessments.⁴⁰

Another problem encountered by researchers is the highly charged atmosphere that has surrounded Burma since the 1988 uprising. Due largely to the regime's human rights abuses, most contemporary issues have become highly politicised. For example, there is a large activist community – both inside and outside the country – dedicated to the immediate replacement of the regime with a democratically elected civilian government. Others have seen greater value in a policy of 'constructively engaging' the SPDC and seeking reforms over a longer time frame. These two broad camps are bitterly divided. Such is the depth of feeling among them that published material about the Tatmadaw is often coloured by political and 'moral' considerations.⁴¹ All this has added to the challenges of separating rumour from reality, and making balanced and objective assessments.

It is with these factors in mind – and the difficulties faced by analysts at the two levels identified earlier – that a closer examination of Burma's military capabilities might be undertaken.

5. Snapshots in the Dark

One way to help convey uncertainty is to identify in the analysis the issues about which there is uncertainty or the intelligence that is essentially missing but that would, in the analyst's view, either resolve the unknowns or cause the analyst to re-examine currently held views.

Mark Lowenthal
Intelligence: From Secrets to Policy

As argued above, simply compiling the Tatmadaw's known – or presumed – order of battle does not provide sufficient information on which to base considered judgements about Burma's military capabilities. Nor is it possible in a paper such as this to examine all the analytical criteria listed by institutions like the RAND Corporation. By selecting a number of case studies, however, it is possible to gain some idea of the state of Burma's armed forces, while at the same time illustrating the difficulties encountered in making more comprehensive assessments.

All reputable formulae include baseline issues such as manpower, defence budgets, arms acquisitions and military proficiency.

Manpower

Ever since the armed forces created the State Law and Order Restoration Council in 1988, and launched its ambitious military expansion program, foreign observers have tried to determine the number of men and women in the Tatmadaw.⁴² Numerous estimates have been put forward, but none can be considered definitive.

It is not disputed that over the past 20 years the Tatmadaw has probably doubled in size, from a baseline of around 200,000. According to Maung Aung Myoe, who appears to have had access to official records, in 1988 the army numbered 184,029, the navy 8,065 and the air force 6,587.⁴³ In 2001, a Burmese military spokesman stated that there were '350,000 plus' in the Tatmadaw.⁴⁴ It has since become widely accepted that by 2002 the armed forces had grown in size to around 400,000. This was thought to consist of about 370,000 in the army, 16,000 in the navy and 15,000 in the air force.⁴⁵ Some sources have claimed that 435,000 is more accurate.⁴⁶ A few reports have put the figure at 488,000, but this seems to include the 72,000 believed to make up the paramilitary Myanmar Police Force.⁴⁷ The anonymous entry for the Tatmadaw on the Wikipedia website gives an active strength of 492,000, but does not give any basis for this claim.⁴⁸

In 1995, the SLORC announced a 'war establishment' of 500,000. This formal goal has been revised to 600,000, to take account of all the additional units formed since then.⁴⁹ This reportedly includes 23,000 in the air force and 22,000 in the navy.⁵⁰ These figures are purely notional, however, and are clearly well above the Tatmadaw's current 'implemented strength' – although in 1999 one Thai newspaper claimed, on the basis of leaked Burmese government documents, that there were 620,000 in Burma's armed forces.⁵¹ Even at about 400,000, however, the Tatmadaw would still be the second largest armed force in Southeast Asia (after Vietnam) and, by some counts, the 12th largest in the world. If the Wikipedia claim is closer to the mark – which is highly unlikely – it would be the largest in Southeast Asia and the 9th largest in the world.

The 400,000 figure is still widely cited, but in recent years the size of Burma's armed forces appears to have declined, probably to around 350,000.⁵² One US academic has claimed that the figure is now closer to 300,000, and a few observers believe the figure

could be even lower.⁵³ These estimates seem to be based on persistent reports of a high rate of desertions – mainly from the army – the regime's difficulties in finding new recruits, and the large number of child soldiers in the ranks.⁵⁴ In addition, many army units appear to be badly under strength. For example, after 1988 the number of infantry battalions was reported to have increased from 168 to 504.⁵⁵ At the time, the formal establishment of each battalion was 750 personnel, a figure later increased to 826. Yet in 2006 one source claimed – on the basis of allegedly leaked documents – that 220 army battalions were staffed with just 200–300 men, while the remaining 284 battalions each had fewer than 200 personnel. Some front line units reputedly had as few as 15 men.⁵⁶

The difficulty of making sensible estimates of personnel numbers has been exacerbated by rampant corruption, bureaucratic inefficiency and generally poor record-keeping. For example, Tatmadaw recruiting stations are known to have falsified their records to win bonuses or to avoid punishment for poor performance.⁵⁷ At the unit level, payrolls have been padded with non-existent personnel in order to siphon off funds and resources. Junior officers have reportedly been afraid to report desertions to their seniors, for fear of retribution. Large numbers of men – and children – press ganged into military service have apparently deserted, or 'defected' to armed insurgent groups. As a result of all these problems, it seems to have become increasingly difficult even for Burma's high command in Naypyidaw to know precisely what resources are available to them for deployment in the event of a crisis.⁵⁸

Manpower estimates are also complicated by suspect demographic statistics. *The Military Balance*, produced annually by the International Institute for Strategic Studies, and the Central Intelligence Agency's (CIA) *World Factbook*, both cite population figures around 48 million.⁵⁹ On this basis, they have calculated the numbers of men and women available for military service. The CIA has gone further and estimated the number of Burmese fit for military service, and the number reaching 'militarily significant age' each year. The UK government prefers a population figure of 52 million.⁶⁰ In 2008, Burma's Central Statistical Organisation told the Association of South East Asian Nations that the country's population was 58.6 million.⁶¹ Some unofficial estimates range as high as 70 million.⁶² Yet all these figures must be treated with caution. There has been no official census in Burma since 1983, and the last reliable nationwide census took place in 1931.

Given the fact that manpower estimates range from less than 300,000 to over 600,000 – a difference of more than a quarter of a million people – it would be a very bold analyst who claimed to know the number of men and women serving in Burma's armed forces. The current estimate of 350,000 is based on reliable sources, and seems to be broadly 'in the ballpark', but it is unlikely that anyone – possibly even including the members of the Tatmadaw's senior leadership – knows the real size of Burma's armed forces.

Defence Budgets

Similar problems surround attempts to calculate Burma's annual defence expenditure. Some unofficial estimates have put this as high as 50 per cent of the real budget.⁶³ In April 2009, the UK government stated that 'at least 30 per cent of Burma's gross national product is spent on general defence expenditure'.⁶⁴ The US government prefers an estimate of 2.1 per cent of gross domestic product.⁶⁵ Yet it is unlikely that anyone, either in Burma or outside it, knows exactly how much Naypyidaw spends on defence each year.⁶⁶

According to the official budget figures, Burma's allocation to defence has fluctuated considerably since 1988. In the 10 years following the armed forces takeover it grew rapidly from about 19 per cent of nominal government spending to a peak of 45 per cent in 1999. It hovered around the 40 per cent level until 2002, but then dropped back to around the 32 per cent mark, where it has remained.⁶⁷ As a guide to the regime's actual defence outlays, however, these figures are essentially meaningless. Not

only is their accuracy open to question, but the budget does not take into account the many other, often substantial, off-line accounts controlled by the armed forces. Nor do the budget figures capture all the informal deals that involve members of the armed forces, or any of the other activities involving the Tatmadaw, that directly or indirectly contribute to its continued operation.

For example, as the Tatmadaw has grown in size and complexity, so its recurring personnel and maintenance costs have also increased markedly. This appears to have put a considerable strain on the defence budget, so much so that during the late 1990s the regime found that it was no longer able to sustain a system of centralised logistic support. It declared a policy of self reliance for local military units, which were encouraged to grow their own food and establish commercial enterprises able to raise operating revenues. These activities were formally halted in 2004, in an attempt to re-exert central control over defence finances. They were 'threatening the institutional unity of the Tatmadaw'.⁶⁸ Commanders have continued to deal on the black market, however, and to coerce supplies from local communities, to feed their troops and keep their units operational. Among the lower ranks, many military families engage in small scale corruption and private enterprise to supplement their low salaries.⁶⁹

So diverse and widespread are these informal practices – most of which are likely to be invisible to the regime's accountants – that it would be impossible even for the military leadership in Naypyidaw accurately to calculate the extent to which the Tatmadaw relies on them for its continued existence. This uncertainty must also affect the reliability of the regime's formal estimates of expenditure.

Official budget figures are still useful for indicating the regime's spending priorities. The formal allocation for defence, for example, is more than double that for education and health combined. Even so, they need to be considered in context. The Tatmadaw performs many roles that in other countries would be conducted by civilian agencies. For example, most senior positions in the civil service are held by former or serving members of the armed forces, and military personnel are found in other uniformed services, such as the Myanmar Police Force. Soldiers are frequently employed building roads and bridges, and in other ways improving Burma's civil infrastructure. Also, through ventures like Union of Myanmar Economic Holding Limited and Myanmar Economic Corporation the armed forces manage a wide range of commercial enterprises.⁷⁰ Thus, formal budget allocations for 'defence' cover a wide range of non-military activities.

There are other problems in analysing Burma's annual defence expenditure. Not only are the official statistics untrustworthy, but foreign researchers have been unable to agree on an accepted method to make their own estimates. For example, the International Monetary Fund, US Arms Control and Disarmament Agency, Australian Defence Intelligence Organisation, Stockholm International Peace Research Institute (SIPRI) and IISS, among others, have all used different methods to calculate Burma's annual outlays on defence.⁷¹ To add to the confusion, their results are presented in different terms. Some are expressed as a percentage of central government expenditure, some as a proportion of gross domestic product, and some in terms of gross national product. Different exchange rates are used. Even allowing for the intrinsic unreliability of all these figures, comparisons between them are difficult.

All that said, there is wide agreement among strategic analysts that Burma probably spends proportionately more on defence each year than any other country in the Asia-Pacific region.⁷² Indeed, in its 2005 *Yearbook*, SIPRI provisionally ranked Burma among the top 15 military spenders in the world.⁷³ The actual figure for annual defence expenditure is always going to be open to debate but, by any estimation, it is a staggering sum for a country suffering from so many dire economic and social problems. Over the past 20 years a good proportion of this expenditure seems to have gone on the acquisition of new weapons and equipment.

Arms Acquisitions

One of the most obvious and well publicised aspects of the regime's military expansion and modernisation program has been the dramatic increase in its inventories of weapons platforms, weapons and equipment.⁷⁴ Yet here again, there are major difficulties in making any firm judgements about the types or numbers of arms purchased.

There is little doubt that, since 1988, the Myanmar Army has taken delivery of a large number of tracked and wheeled armoured vehicles, towed and self-propelled artillery pieces, artillery-based and missile-based air defence systems, transport vehicles, communications systems, small arms, ammunition and infantry equipment. The Myanmar Air Force has acquired MiG-29 and F-7 fighters, A-5 ground attack aircraft, G-4 counter-insurgency aircraft, Y-8 transports, K-8 trainers, at least three different kinds of helicopters, and a variety of electronic systems, including radios and radars. For its part, the Myanmar Navy has reportedly acquired – either by purchase from foreign countries or through an assisted domestic ship-building program – three corvettes, six guided missile patrol boats, more than a dozen coastal patrol boats and a number of auxiliaries. At least one frigate is currently under construction in local shipyards.⁷⁵

Few of these acquisitions appear to have been state-of-the-art. Most are at least one or two generations behind those systems in service with the major powers and advanced regional countries. For example, platforms like the F-7 and A-5 aircraft and the *Hainan* class patrol boats, all purchased from China, are based on designs that are decades old. So too are the Eastern bloc T-72 tanks and SA-6 surface-to-air missile systems. Also, most of the Tatmadaw's aircraft, naval vessels, tanks and artillery pieces have been purchased second-hand. Some were reportedly stripped of their more advanced components before delivery, further reducing their combat effectiveness.⁷⁶ The regime was determined to expand its inventories quickly, and chose to do so by buying large numbers of cheaper arms, rather than acquiring smaller numbers of more sophisticated – but more expensive – systems.⁷⁷ Also, these older arms were tried and tested, and at a technological level suited to the Tatmadaw's developing maintenance and combat skills.

For all the publicity given to these acquisitions, however, it has been very difficult to verify reports of particular arms sales. Opportunities for first hand observation are very limited. Access to Tatmadaw bases and depots is strictly controlled. Occasionally, new military vehicles have been seen crossing the China-Burma border, and sometimes military aircraft can be seen parked on the tarmac at Rangoon's Mingaladon International Airport. Public displays – such as parades on national days and exhibits in the Defence Services Museum in Rangoon – can give important clues to the Tatmadaw's past and present weapons holdings.⁷⁸ At some risk to themselves, a few current and former members of the Tatmadaw have been prepared to share their first hand knowledge of the regime's arms inventories with activists and academic researchers. Generally speaking, however, Burma-watchers have been forced to look elsewhere for data.

Documentary evidence is scarce. There are no official announcements of specific sales, but from time to time fragmentary information appears in Burma's state-controlled news media. Also, there are occasional reports of arms transfers to Burma in foreign newspapers, defence journals and current affairs magazines. Some appear to be accurate. A few other secondary sources – particularly those with informal connections to foreign intelligence agencies – can also be helpful.⁷⁹ Also, some insurgent and activist groups have compiled useful orders of battle, drawing on information derived from their own direct experiences, debriefs of Myanmar Army deserters and prisoners of war, and tactical radio intercepts. Yet these sources are still unable to provide details of individual contracts, the operational status of particular weapon systems, or where they are based.

Analysts encounter similar problems in trying to research Burma's defence industries. A number of older weapons factories – most built with the help of a German firm before

1988 – and shipyards appear to have been upgraded. Also, a number of new factories have been built, reportedly with Chinese, Singaporean, Israeli or Ukrainian assistance. Burma does not admit to making its own landmines, but it readily acknowledges the manufacture of mortars, light arms, ammunition and basic infantry equipment. Most are foreign weapons made under licence although, probably with some external assistance, Burma has designed and produced a number of its own systems. These have included naval vessels and light armoured vehicles.⁸⁰ Yet, once again, details of Burma's defence industries are closely protected. The few foreign experts allowed access to local manufacturing plants are usually quarantined and strictly forbidden from disclosing any information about them. Reports in the open literature are very difficult to verify.

Over the past 20 years, various academics, journalists and activists have compiled lists of Burma's arms purchases, but the results have been mixed.⁸¹ Even if most acquisitions can be identified, it is difficult under current circumstances to state with any confidence the numbers of particular weapons or weapon platforms delivered. All figures cited must be considered estimates only, as they are usually based on unconfirmed reports in the news media or on the internet. Except where they copy each other, few published sources are consistent.⁸² It is even more difficult to discover the peculiar characteristics of each system – for example, whether they were modified before or after sale. Even if the details of particular arms deliveries became known, it is not possible to account for all subsequent losses, whether on operations, through accidents, or simply due to a lack of spare parts. Nor is it known what obsolete equipment might have been taken out of active service, and put into storage for use in an emergency.⁸³

Without a reliable order of battle, there is a major gap in the literature on Burma's armed forces. As Angelo Codevilla has written, however, 'too often military analysis has been reduced to counting men and machines'.⁸⁴ The purchase of new arms and equipment is nothing more than a waste of resources if these acquisitions cannot be properly stored, professionally maintained, operated proficiently and employed effectively. For, ultimately, it is not just the possession of lots of impressive looking bits of hardware which denotes military capability, but what can be done with them.

Combat Proficiency

The RAND Corporation's study of national power measured military proficiency by testing the ability of armed forces to perform a variety of specific combat operations against an adversary, at different levels and under different conditions. Yet, here again, foreign analysts trying to study Burma's armed forces strike major problems. The lack of independently verifiable data, in particular informed judgements about the Tatmadaw's performance by trained military observers, makes such an approach very difficult.

Before 1988, the Tatmadaw was essentially a lightly armed infantry force, geared to regime protection and the conduct of counter-insurgency operations. The army's heavy equipment was obsolete, its logistics and communications were weak and operations were hampered by a lack of transport, fuel and ammunition. The navy and air force were both small, and operated almost entirely in support of the army. Their major weapons and weapons platforms were old and frequently made unserviceable by a lack of spare parts and skilled manpower. Even so, at the time the Tatmadaw was considered by many to be quite a professional institution. It had been on active service continuously since 1948, and was experienced and battle-hardened. The air force was considered 'the least impressive in Asia', but the army had the reputation of being tough and resourceful.⁸⁵ The military budget was tightly controlled, corruption was not a major problem and officers shared many of the same hardships as their men.

Some of these characteristics seem to have survived the passage of time, but over the past 20 years the Tatmadaw has changed dramatically. It is determining the nature and extent of those changes that poses the greatest challenges for strategic analysts.

On paper, the Tatmadaw now looks much more like a conventional defence force. The army is still by far the strongest Service, but the Air Force and Navy have developed into major forces in their own right. All three Services have much larger inventories of arms and equipment, technically capable of performing a much wider range of tasks. The Tatmadaw is also distributed more widely across the country, with permanent facilities in places where, before 1988, there was a minimal military presence. For example, there has been a major effort to build new army bases, airfields and naval stations around Burma's borders. In addition, command structures have evolved and the logistical support network seems to have expanded, to cope with the Tatmadaw's increased size and diversity. It has also begun to develop and practise a range of conventional warfare doctrines involving the deployment of its heavier and more advanced weapon systems.⁸⁶

Given the regime's aim to extend its control over the entire country, and defend Burma against external attack, it is not surprising to see the Tatmadaw distributed more widely. How well it can manage this larger and more complex structure, however, is unknown. Also, what military operations it can actually conduct, under what conditions, and to what level of proficiency, remains subject to speculation.

The inner workings of the Tatmadaw are almost invisible to foreign observers. Defence Attaches posted to Burma are severely restricted in where they can go and what they can see. They have very few opportunities outside of formal parades to observe the Tatmadaw in action. A few outsiders have reportedly been permitted to observe joint training exercises but, if this has indeed been the case, their impressions have not been made public.⁸⁷ Occasionally, Burma hosts visits by foreign warships, senior defence officials, and groups from the defence academies of regional countries, but these visitors appear to see little outside the program of formal calls and obligatory tours of cultural sites. Non-defence visitors to Burma and members of the diplomatic corps have even fewer opportunities to make first-hand judgements about the proficiency of the country's armed forces, particularly in combat roles.

Insurgents and foreign adventurers with direct experience fighting the Tatmadaw are in a better position to comment on its military proficiency – at least in counter-insurgency operations – but their reports have been inconsistent.⁸⁸ Some have described well-equipped and well led Myanmar Army units which made formidable opponents. Others have reported ill-disciplined and poorly equipped soldiers who needed to be forced into combat with threats and, possibly, drugs. Refugees and humanitarian workers have also been able to shed some light on Myanmar Army weapons and tactics, including its use of landmines, but again from a limited perspective.⁸⁹ Defectors and prisoners of war have provided additional information but, as always with such informants, their testimony needs to be treated with caution. In any case, many have been young soldiers of low rank with a limited understanding of the Tatmadaw's wider activities and capabilities.⁹⁰

Even these sources of information, however, are drying up. Since 1988, the Communist Party of Burma insurgency has collapsed and 17 major ethnic armies have negotiated ceasefire agreements with the central government. Campaigns are still being waged against a number of guerrilla groups, mainly along the border with Thailand, but Naypyidaw's writ now runs over more of Burma than at any time since Independence in 1948. The reduction in the level of fighting has been widely welcomed, but it has reduced the opportunities for first hand observation of the Tatmadaw's combat proficiency. Given that the armed forces now spend less time in the field, however, the ceasefires must have affected their overall skill levels. As Mary Callahan has noted, there is now at least one generation of army officers who 'probably have less experience fighting wars than in trying to build new roads'.⁹¹ Indeed, given the roles of some of the Tatmadaw's new conventional weapon systems, some units are unlikely ever to see action.

Nor has it been possible to observe the Tatmadaw abroad. Apart from minor forays across its borders, Burma has not conducted any foreign military campaigns. It sent a

staff detachment to the United Nations Operation in the Congo in the 1960s, and a few officers served in later UN peace-keeping missions, but Burma has not contributed any combat units to UN military operations.⁹² A proposal in 2001 for joint Burma–Malaysia training exercises seems to have died.⁹³ The Myanmar Navy participated in an international naval exercise in the Indian Ocean in 2006, its first known foreign deployment for 45 years. It made a good impression, but this rare public exposure did not reveal anything about the navy’s combat capabilities. Members of all three Services have undergone training overseas, for example in Yugoslavia, China, India, Pakistan and Russia. Regardless of the calibre of these individuals, however, they cannot be used to make judgements about the military capabilities of their Services, or the armed forces as a whole.⁹⁴

The Tatmadaw has studied developments in modern warfare – including the US campaigns in Iraq and NATO operations in Bosnia. These analyses appear to have influenced the acquisition of arms and equipment, and the development of new military doctrines.⁹⁵ A number of joint training exercises have been held. However, there is no reliable information about the Myanmar Army’s ability to mount large-scale conventional operations, such as the defence of Burmese territory against external intervention, ground-based air defence operations or amphibious warfare. Similarly, the Myanmar Navy has been effective against small unarmed fishing vessels, but its ability to conduct conventional anti-surface, anti-air or anti-submarine operations is a closed book. The Myanmar Air Force has acquired a large number of new aircraft since 1988, but how well it can defend Burma’s sovereign airspace, engage in battlefield air interdiction, mount strategic ground strike operations or conduct deep penetration attacks is simply unknown.

It would be a mistake to underestimate the determination of the Tatmadaw to master its new arms and equipment, and to develop the full range of capabilities necessary to respond to perceived internal and external threats. Yet, from the very limited evidence available to researchers, it would appear that it is facing a range of serious problems. The Tatmadaw’s rapid expansion and its acquisition of so many different weapon systems from so many different countries have apparently contributed to difficulties with doctrine, training, integration, logistics and maintenance. Dissatisfaction has been reported with some of the arms and equipment purchased from abroad, particularly from China.⁹⁶ It has been difficult to obtain spare parts for the older platforms, and keep them serviceable. Also, Burma still lacks the scientific and industrial base to keep its modernised armed forces operational without substantial external assistance.

More specifically, the army’s weapon systems are well below the technological levels of its most likely adversaries. Armoured, artillery and air defence units have reportedly complained about restrictions on training exercises, particularly limits on live firings. Some locally made infantry weapons and ammunition are apparently sub-standard.⁹⁷ The air force suffers from a shortage of skilled pilots, including for the MiG-29 interceptors. Flying hours are very restricted, air-to-air combat training is limited and live firings of missiles are believed to be rare. This must have an effect on skill levels. The F-7 fighters have a number of major weaknesses which makes them highly vulnerable in combat. The air-worthiness of many aircraft is questionable. Most naval vessels are old and fitted with obsolete arms and equipment.⁹⁸ Deployments are limited by resource and manpower constraints, again resulting in severe skills shortfalls.

Persistent reports of these and other problems raise serious doubts over Burma’s military capabilities. In terms of combat effectiveness, classroom instruction and scripted training exercises can never compensate for the lack of direct experience on the ground, in the air or at sea. Even if it can keep its arms functioning effectively, most are out-dated and vulnerable to counter-measures. In any case, proficiency in their use seems unlikely to be good enough for the Tatmadaw to prevail over a trained military force armed with more modern weapon systems. This is even before consideration is given to critical factors such as command and control, communications and intelligence. There is precious little hard information on which to base firm judgements, but the

recent claim that 'the Tatmadaw has transformed itself from essentially a counter-insurgency force into a force supported by tanks and artillery, capable of fighting a regular conventional war' must be considered premature.⁹⁹

All these judgements revolve around issues to do with arms and the Tatmadaw's ability to operate them effectively in different combat environments. Perhaps more than anything else, however, it is likely that intangible factors such as morale, loyalty and cohesion will decide whether the regime can translate the Tatmadaw's newly acquired material strength and developing professional skills into useable force.

6. Critical Intangibles

In war, considerations of morale make up three quarters of the game: the relative balance of forces accounts only for the remaining quarter

Napoleon Bonaparte
Correspondence

Over the past 20 years, there have been numerous reports in the news media and on activist websites questioning the morale, loyalty and cohesion of Burma's armed forces. A few more academically inclined works have also touched on these subjects. In some cases, the sources cited appear to be well placed to comment on the internal dynamics of the Tatmadaw, in particular the power struggles reported among the senior leadership. However, it is still risky to extrapolate from these reports and make firm judgements about the armed forces as an institution, and the future behaviour of its members under certain conditions.

Morale

As any professional military officer can attest, factors like morale and esprit de corps are critical, but notoriously difficult to measure. Also, they vary over time and between different parts of a large force. In Burma's case, however, there are some clues that can help a researcher draw some broad – albeit still tentative – conclusions.

During the Ne Win period, from 1962 to 1988, the military regime's denial of basic human rights and idiosyncratic economic policies won it few friends among the general population. Also, the Tatmadaw's ruthless counter-insurgency campaigns in the countryside – where it was seen by many as an occupying army – alienated a large proportion of the country's ethnic minorities.¹⁰⁰ Even so, most people in Burma seemed to draw a distinction between the regime and the armed forces, which was still widely respected – at least among the majority ethnic Burmese – for its contribution to the country's independence struggle. The Tatmadaw was seen as a reputable career for a young man, offering opportunities for social advancement. There was always the risk of death or injury on operations, and material benefits were few, but in those days the Tatmadaw was an all-volunteer force with a strong esprit de corps.

It is safe to say that this is no longer the case. The regime's brutal response to the nation-wide pro-democracy uprising in 1988 – in which more than 3,000 unarmed demonstrators were killed – began a process of public disillusionment with the Tatmadaw that has continued to the present day. The continued abuse of human rights, including the harsh treatment accorded to popular opposition leader Aung San Suu Kyi, has eroded support for the Tatmadaw. The regime's mistreatment of the revered Buddhist *sangha* or 'monkhood' during the September 2007 'saffron revolution' hardened popular opinion not only against Naypyidaw, but against the armed forces as an institution. From many accounts, this shift in public attitude appears to have had a profound impact on the morale of the Tatmadaw, in particular the rank and file.

Membership of the armed forces still offers young men – officers in particular – the opportunity to gain a job, an education, social advancement and a range of privileges. Since 1988, the regime has made an effort to create a virtual military state within the state of Burma. While most of the civilian population has suffered from increasing economic problems, a floundering public health infrastructure and the effective collapse of the state education system, many members of the Tatmadaw and their families enjoy access to well-resourced schools, hospitals and social services. Being a member of the armed forces can help servicemen protect their families against the regime's repression

and economic mismanagement. It can also provide opportunities for the accumulation of personal wealth, either through corruption or involvement in private business ventures.

Even so, life for the average soldier is very hard. Given the reduction in fighting, there is less risk of becoming a casualty of war. Despite the vast sums spent on new arms, however, on counter-insurgency operations 'the typical soldier is still fighting the same battle'. According to many reports, basic equipment, rations and even ammunition are still in short supply. Timely medical evacuation is rare. There are also consistent and credible reports of poor leadership and brutal discipline.¹⁰¹ Even back in their barracks, lower ranking servicemen and their families struggle to make ends meet. With salaries around 30,000 kyats (US\$30) a month, many privates live just above the poverty line.¹⁰² Corruption at senior levels is rife, and becoming increasingly obvious. This has led to considerable resentment at the growing gap in living standards between the officers and other ranks. Health problems are also a concern, particularly the increased number of soldiers testing positive for HIV, Hepatitis B and malaria.¹⁰³

In 2003, morale and discipline in the armed forces were said to be at 'an all time low'. This judgement was repeated in 2005 and similar claims have been made since.¹⁰⁴ As Mary Callahan has written;

Although the Tatmadaw's acquisition of higher-tech weaponry since 1988 has ushered in a revolution (by Burmese standards) in military affairs, its institutional development has frequently failed to keep pace with the demands of sustaining its vastly larger rank and file. In other words, no comparable revolution in military social affairs has taken place.¹⁰⁵

In 2006, an internal Tatmadaw report on these problems apparently expressed concern and urged officers to give a higher priority to the welfare of their troops. Since then, pay has been increased, and some units have provided amenities like movie halls and karaoke bars. Commanders have been told to provide food from unit welfare funds to offset reductions in official rations.¹⁰⁶ As far as can be judged, however, none of these measures seem to have been very effective.

Not surprisingly, given all these problems, there is now a serious shortage of recruits. There are still plenty of applicants for prestigious officer schools, such as the Defence Services Academy at Maymyo (Pyin Oo Lwin), which has in fact increased its annual intake. At lower levels, however, the Tatmadaw seems to be forced more and more to rely on 'conscripts', child soldiers and others forced into uniform against their will.¹⁰⁷ Such recruits can hardly be expected to give their full commitment to military service, or to the regime's political programs. This is also suggested by the high rate of desertions and unauthorised absences. By many accounts, including leaked government documents, this problem has increased in recent years, despite efforts to stem the outflow.¹⁰⁸

Cohesion

Over the past 20 years there has been a steady drumbeat of reports from journalists, activists and other commentators, to the effect that Burma's senior military leadership is irreparably divided, and the armed forces is about to disintegrate into mutinous factions. Clearly there have been internal tensions, as might be expected in any large institution, but the regime has proven remarkably resilient. Indeed, by continually re-inventing itself, it has become the most durable military dictatorship the modern world has known.

Tensions in the officer corps have had many causes, but most seem to spring from personal and professional differences. The Tatmadaw would not be unique among armed forces in experiencing a degree of competition among ambitious officers, factionalism – based for example on different professional backgrounds or functional corps – or rivalry between the three Services. Burma's pervasive culture of patron-client relationships has led to alliances and power struggles between different cliques.¹⁰⁹ Relations between officers based at Defence Headquarters and those in the field have

been strained. Given the fact that the Tatmadaw also constitutes the government, there are bound to be differences over certain policy issues, such as the country's close relationship with China, or the management of the economy. Before 1988, there were occasional rumblings against paramount leader Ne Win, and similar noises have been heard since then against Senior General Saw Maung and, after 1992, Senior General Than Shwe.

More recently, there have been reports of splits in the officer corps, and growing tensions within the ranks, but as always these have been hard to confirm.¹¹⁰ For example, following the demonstrations in 2007 it was claimed that two or three 'regional commanders' were dismissed for refusing to send their troops out to attack protesting monks.¹¹¹ There were also reports that a number of soldiers sent to Rangoon refused to obey orders. Well-informed observers have since raised doubts over some of these claims, but it does appear that at the time a few army units experienced discipline problems.¹¹² Also, the proposed transition from direct military rule to government by a military-dominated parliament has reportedly caused tensions. It has been suggested, for example, that those officers likely to remain in uniform are concerned about the transfer of certain powers to the former military officers who currently lead the regime's mass civilian organisation, the Union Solidarity and Development Association.¹¹³

To date, however, all these stresses and strains have been successfully contained. There are many well established mechanisms to identify and root out potential centres of unrest in the armed forces before they can become a serious challenge to the leadership. From time to time senior officers have been 'permitted to retire', but it has rarely been known precisely what led to these movements. Nor has it been easy to determine the significance of particular promotions and demotions.¹¹⁴ There was a major development in 2004 when Lieutenant General Khin Nyunt, Burma's then Prime Minister and head of the country's enormously powerful intelligence apparatus, was arrested and thousands of his subordinates purged. This development demonstrated some of the deep divisions within the ruling hierarchy but, even more so, it underlined the regime's ability to survive such internal rifts and still remain firmly in power.

A palace coup within the Tatmadaw's senior leadership could see significant changes in policy, but it would not necessarily mean the end of the regime. That is more likely to be threatened by widespread unrest among the rank and file (including junior officers), on whom the daily enforcement of military rule actually depends. This makes the issue of loyalty of paramount importance. Yet, here again, the hard, verifiable data needed for firm judgements is sadly lacking.¹¹⁵

Loyalty

For nearly 50 years, the men and women of the Tatmadaw have loyally supported successive military governments in Burma. As Angelo Codevilla has written, however, a strategic analyst must always ask: 'Loyalty to whom, and on what basis? For what purpose? Under what circumstances?'¹¹⁶

Given all the developments that have occurred in Burma since General Ne Win seized power, the continuing loyalty of the armed forces to its senior leadership has been quite remarkable. In 1962 it supported the coup d'état, in 1974 it put down demonstrations over the shabby burial of former UN Secretary-General U Thant, in 1988 it crushed a massive pro-democracy uprising, and in 2007 it suppressed the nation-wide 'saffron revolution'. Throughout this period, the Tatmadaw has helped other state agencies counter popular protests over the regime's inept and repressive government. It has also waged brutal campaigns against various ethnic minority groups. There have been occasional signs that some members of the armed forces have been unhappy about these roles, and would even support the installation of a democratically elected civilian government but, as far as is known, the majority have remained loyal.¹¹⁷

In one sense, isolated instances of disloyalty should not worry the regime. It faces no military threat from the country's few remaining insurgent groups, none of which are seeking to overthrow the Naypyidaw government. Nor does it need 400,000 men and women in uniform, armed with the latest weapons and equipment, to crush popular dissent and enforce the SPDC's idiosyncratic policies. As it has repeatedly demonstrated, it can easily do that with less than 200,000 – the number in the Tatmadaw before 1988 – armed only with the basic infantry weapons manufactured in Burma.¹¹⁸ Also, as seen during the disturbances in September 2007, despite any misgivings some soldiers may have about events, there were still units willing and able to use lethal force against civilian protesters, including Buddhist monks, when ordered to do so.

A weakening of commitment among the rank and file would be of concern, however, if the regime faced further civil unrest, perhaps led by the country's Buddhist monks, or a genuine external threat. After Cyclone Nargis devastated the Irrawaddy delta in 2008, for example, there were calls for an invasion of Burma – or at least 'coercive humanitarian intervention' – to deliver aid to the cyclone victims. Any attempt to 'bash Burma's doors down', as suggested by the Australian Prime Minister, would have been strongly resisted by the regime, probably using armed force.¹¹⁹ Some activists have questioned the loyalty of the Tatmadaw in such circumstances.¹²⁰ While a blatant challenge to the country's independence and sovereignty, a limited intervention of that kind would probably not have triggered a serious split in the armed forces. The same may not be true, however, in the event of a full scale invasion, specifically aimed at regime change.

Despite the fears of some generals – and the hopes of some activists – an invasion of Burma has never been likely.¹²¹ However, a considerable effort has been made to prepare for such an eventuality. One of the most obvious manifestations of the regime's concerns has been the acquisition of conventional weapon systems clearly unsuited to counter-insurgency operations. Another sign has been the continued refinement of a 'people's war' strategy that, *in extremis*, would see Burma's civilian population mobilised to defend the country. In these circumstances, loyalty to the military government by both the Tatmadaw and the people would be necessary. Given the sense of alienation felt by Burma's minorities, they are unlikely to throw their full support behind Naypyidaw. A case can also be made that the majority Burmans – including many in the Tatmadaw – are now so disillusioned with the regime that in such circumstances their loyalty cannot be guaranteed either.¹²²

The Tatmadaw subjects its members to extensive indoctrination programs, mirroring the public propaganda campaigns waged for the benefit of the wider population. They emphasise nationalist themes, and the Tatmadaw's continuing role in ensuring Burma's unity, stability and independence. There is no reliable measure of the overall success of these efforts, or of the impact they have on different parts of the armed forces. From the evidence available, however, they do not seem to have been successful in stemming a continuing fall in morale among the rank and file, and a weakening in the Tatmadaw's esprit de corps. What might at other times be dismissed simply as grumbling in the ranks and among some junior officers has now been exacerbated by a deep concern – some sources say even anger – among many in the armed forces over the regime's failure to live up to its promises.

All these reports raise serious questions about the armed forces' morale, cohesion and loyalty. In the absence of hard, verifiable data, however, it is difficult to make any firm judgements about the impact of these problems on the Tatmadaw's military capabilities and its combat performance.

7. Conclusion

Where these [sources] are meagre in quantity and/or dubious in reliability and accuracy scholarly expertise, understanding, manipulation and the extraction of every drop of insight has an essential role, but it must also recognise its limits and the fact it can only go so far and will leave many questions unanswered or even unasked. This commonplace experience, and for that matter assertion, is no reason to abandon the enterprise. It does serve to underline the provisional and even tentative character of all scholarship.

P.J. Perry
*Myanmar (Burma) since 1962:
the Failure of Development*

Hans Morgenthau once wrote that there were eight elements of national power. Only one was military strength.¹²³ Yet it can be argued that in Burma's case this element is more important than in many other countries, and thus deserves closer attention. Not only have the armed forces governed Burma for the past 47 years – and show no sign of surrendering that position – but they have depended on the direct exercise of military power to maintain their rule. Indeed, to the Tatmadaw's senior leadership, the armed forces, government and state have become conflated. To them, the integrity of the Tatmadaw, the survival of the regime and the security of the country are seen as indivisible. A perceived threat to one is considered a threat to all. This makes the assessment of Burma's military capabilities important not just in defence terms, but also in terms of its political future.

Since 1988, Burma's armed forces have dramatically increased in size and acquired a wide range of new arms and equipment. This ambitious expansion and modernisation program has attracted comment from numerous academics, journalists and activists. Attention has been focussed mainly on the Tatmadaw's arms procurement program. Yet, orders of battle on their own are poor measures of military capability. As Michael Herman has pointed out, 'Fairly arbitrary combinations of men and *materiel* are given a declaratory value, justified only because no better units can be suggested'.¹²⁴ True military capability assessments depend on qualitative judgements that encompass a much wider range of factors. They also take into account the personal, professional and methodological challenges encountered by all who conduct such intellectual exercises.

Yet, under current circumstances, a comprehensive, detailed and nuanced assessment of Burma's military capabilities is impossible. There is simply insufficient reliable data to permit the kind of complex analysis that is required. It is even difficult to answer such basic questions as how many men there are in the Tatmadaw, what budgetary support it receives each year, and what it has in its armouries. More importantly, analysts are unable to gauge how well the armed forces can maintain and operate their new weapon systems, and perform a wide range of military operations, under different conditions. Indeed, it is unlikely that even Burma's military leaders can make confident judgements about many of these issues. Ultimately, however, the Tatmadaw's ability and readiness to perform various roles – in both peace and war – will depend on its men.

The weight of available evidence suggests that Burma's armed forces are currently experiencing serious personnel problems. The level of discontent does not seem to have reached a point at which the regime needs to fear for its survival. Indeed, the military government has faced internal unrest before and survived to become even stronger.¹²⁵ As far as can be judged, however, there are now serious cracks in the Tatmadaw's normally solid support for the regime and all it stands for. Depending on how the political situation in Burma develops, and how economic and social conditions in the country

evolve, this development could become much more significant. In that regard, calculations of military strength are of less importance than judgements about the morale and cohesion of the armed forces, and their continued readiness to support military rule in the face of widespread popular opposition.

With all these issues in mind, caution needs to be exercised over any assessments of the Tatmadaw that claim to be authoritative. The 'known unknowns' vastly outnumber the 'known knowns'. Most conclusions drawn about the Tatmadaw's military capabilities can only be considered tentative, until more reliable data becomes available. This is not to imply that firm judgements are out of reach entirely, or that strategic analysts should feel constrained from offering their views, simply that the manifest difficulties of conducting research on the armed forces should be recognised and openly acknowledged. Also, allowance will always need to be made for developments of which outside observers remain unaware – the 'unknown unknowns'. To adapt Joseph Nye's helpful formulation, strategic analysts studying Burma need to become as familiar with Burma's mysteries, as they have become with its secrets.¹²⁶

Notes

- ¹ Several slightly different versions of the Defence Secretary's remarks can be found on internet sites. This version is taken from an audio recording posted on 'Rum remark wins Rumsfeld an award', *BBC News*, 2 December 2003, <<http://news.bbc.co.uk/2/hi/americas/3254852.stm>>.
- ² 'Known knowns, known unknowns and unknown unknowns: a retrospective', *CBS News*, 10 May 2009, <http://www.cbsnews.com/blogs/2006/11/09/publiceye/entry_2165872.shtml>. See also Hart Seely, 'The poetry of D.H. Rumsfeld', *Slate*, 2 April 2003, <<http://www.slate.com/id/2081042/>>.
- ³ As early as 1998, for example, the Tatmadaw was described as 'one of the most formidable modern fighting machines in the region'. Micool Brooke, 'The armed forces of Myanmar', *Asian Defence Journal*, (January 1998), p. 13.
- ⁴ See, for example, Aung Zaw et al., 'The enemy within', *The Irrawaddy*, vol. 8, no. 3 (March 2000), <http://www.irrawaddy.org/print_article.php?art_id=676>.
- ⁵ See, for example, Angelo Codevilla, *Informing Statecraft: Intelligence for a New Century* (New York: Free Press, 1992); and R.J. Heuer, *Psychology of Intelligence Analysis* (Washington, DC: Centre for the Study of Intelligence, 1999). Also useful is M.M. Lowenthal, 'Towards a reasonable standard for analysis: How right, How often on which issues?', *Intelligence and National Security*, vol. 23, no. 3 (June 2008), pp. 303–15.
- ⁶ See, for example, 'New Frontiers of Intelligence Analysis', papers presented at the conference on 'New Frontiers of Intelligence Analysis: Shared Threats, Diverse Perspectives, New Communities' (Sherman Kent School for Intelligence Analysis, Langley, 2004); and Rob Johnston, *Analytic Culture in the US Intelligence Community: An Ethnographic Study* (Washington, DC: Centre for the Study of Intelligence, 2005).
- ⁷ Lawrence Freedman, *US Intelligence and the Soviet Strategic Threat* (Houndmills: Macmillan, 1986), p. 184.
- ⁸ Needless to say, this is not to exclude argument aimed at proving or disproving a thesis, or testing an hypothesis. Rather, it refers to the fact that a number of scholars have actively participated in debates over official policy towards Burma. At least one has even argued that it is incumbent upon all those studying Burma to become actively 'engaged' with the 'fear and suffering' of the Burmese people. See, for example, Monique Skidmore, 'Scholarship, advocacy, and the politics of engagement in Burma (Myanmar)', in Victoria Sanford and Asale Angel-Ajani (eds), *Engaged Observer: Anthropology, Advocacy, and Activism* (New Brunswick: Rutgers University Press, 2006), pp. 42–59.
- ⁹ See, for example, *Burma/Myanmar after Nargis: time to normalise aid relations*, Asia Report No. 161 (Brussels: International Crisis Group, 20 October 2008). For other reports on Burma, see the International Crisis Group's website, <<http://www.crisisgroup.org/home/index.cfm?id=2958&l=1>>.
- ¹⁰ It has been suggested that this problem is more pronounced in defence intelligence agencies, due to the rigidly hierarchical structure of most armed forces. Freedman, *US Intelligence and the Soviet Strategic Threat*, p. 21. See also W.E. Odom, 'Intelligence analysis', *Intelligence and National Security*, vol. 23, no. 3 (June 2008), p. 319.
- ¹¹ See, for example, the 'Letters' page of *The Irrawaddy* news magazine. Also relevant is Michael Aung-Thwin, 'Parochial universalism, democracy Jihad and the Orientalist image of Burma: the new Evangelism', *Pacific Affairs*, vol. 74, no. 4 (Winter 2001–02), pp. 483–505; and D.I. Steinberg, 'Minimising the Miasma in Myanmar', *Foreign Policy in Focus*, 18 January 2007, <<http://www.fpif.org/fpiftext/3916>>.
- ¹² Andrew Selth, *Modern Burma studies: a view from the edge*, Working Paper No. 96 (Hong Kong, SAR: Southeast Asia Research Centre, City University of Hong Kong, November 2007), pp. 34–40, <http://www.cityu.edu.hk/searc/WP96_07_A_Selth.pdf>.
- ¹³ M.M. Lowenthal, *Intelligence: From Secrets to Policy*, (Washington, DC: CQ Press, 2009), p. 120.
- ¹⁴ See, for example, International Crisis Group, *Myanmar: the military regime's view of the world*, Asia Report No. 28 (Bangkok/Brussels: International Crisis Group, 7 December

- 2001); and M.B. Pedersen, *Promoting Human Rights in Burma: A Critique of Western Sanctions Policy* (Lanham: Rowman and Littlefield, 2008), pp. 79–124.
- ¹⁵ Herb Meyer, former Special Assistant to the Director of Central Intelligence, speaking in *Spies R Us: A History of the CIA*, Programme 1: 'The Focus of Evil', BBC Radio 4, 6 February 2003, <http://www.bbc.co.uk/radio4/history/cia_transcript1.pdf>. See also A.J. Gookins, 'The role of intelligence in policy making', *SAIS Review*, vol. 28, no. 1 (Winter–Spring 2008), pp. 65–73.
- ¹⁶ Senior General Than Shwe's policy decisions are routinely ascribed to supernatural influences, with little attention given to other possible explanations for his (admittedly idiosyncratic) behaviour. See, for example, Aung Zaw, 'Than Shwe, voodoo and the number 11', *The Irrawaddy*, 25 December 2008, <http://www.irrawaddy.org/print_article.php?art_id=14844>; and Rosemary Righter, 'A test of the UN's moral authority', *Timesonline*, 12 May 2008, <http://www.timesonline.co.uk/tol/comment/columnists/rosemary_righter/article3912799.ece>.
- ¹⁷ A large number of senior officers have rural backgrounds, but regulations have been introduced requiring them to earn tertiary degrees before promotion to higher ranks. Maung Aung Myoe, *Building the Tatmadaw: Myanmar Armed Forces Since 1948* (Singapore: Institute of South East Asian Studies, 2009), pp. 199–200. See also 'Why is Burma junta afraid of letting in foreign aid workers?', *Associated Press*, 9 May 2008; and Joshua Kurlantzik, 'Playing us for fools: Burma's government is run by a group of ignorant xenophobes. So how come it keeps outsmarting us?', *The New Republic*, 11 July 2008.
- ¹⁸ Douglas Ford, "'The best equipped army in Asia?': US military intelligence and the Imperial Japanese Army before the Pacific War, 1919–1941', *Journal of Intelligence and Counter Intelligence*, vol. 21, no. 1 (2008), p. 87. See also B.W. Menning, 'Miscalculating one's enemies: Russian military intelligence before the Russo–Japanese War', *War in History*, vol. 13, no. 2 (2006), pp. 141–70.
- ¹⁹ Alan Hinge, *Australian Defence Preparedness: Principles, Problems and Prospects: Introducing Repertoire of Missions (ROMINS), a Practical Path to Australian Defence Preparedness* (Canberra: Australian Defence Studies Centre, 2000), p. 15. See also US Department of Defense, *Dictionary of Military Terms* (New York: ARCO, 1988), p. 221.
- ²⁰ See, for example, John Keegan, *Intelligence in War: Knowledge of the Enemy from Napoleon to Al Qaeda* (London: Hutchinson, 2003).
- ²¹ Philip Towle, 'Introduction', in Philip Towle (ed.), *Estimating Foreign Military Power* (London: Croom Helm, 1982), p. 28.
- ²² See, for example, *The division in battle: intelligence*, Pamphlet No. 9 (Canberra: Australian Army, 1965), Annex C.
- ²³ A.J. Tellis, Janice Bially, Christopher Layne and Melissa McPherson, *Measuring National Power in the Post-Industrial Age* (Santa Monica: RAND, 2000), pp. 132–76.
- ²⁴ Peter Paret, 'Military power', *The Journal of Military History*, vol. 53, no. 3 (July 1989), p. 240.
- ²⁵ Carl von Clausewitz, *On War*, trans J.J. Graham (Harmondsworth: Penguin, 1968), p. 140.
- ²⁶ The best known of these publications is *The Military Balance*, produced annually by the International Institute of Strategic Studies (IISS) in London. Also, the UK-based Jane's Information Group produces a wide range of publications that list the orders of battle of most countries. See, for example, the section on 'Myanmar' in the periodical *Jane's Sentinel Security Assessment: Southeast Asia*.
- ²⁷ While the IISS describes *The Military Balance* as 'a comprehensive and independent assessment of the military capabilities of 170 nations, and a reference work on developments in global military affairs', it readily acknowledges the limitations of its data in making nuanced assessments of military capabilities. *The Military Balance 2008* (London: International Institute of Strategic Studies, 2008) p. 5. See also Michael Herman, 'Intelligence and the assessment of military capabilities: reasonable sufficiency or the worst case?', *Intelligence and National Security*, vol. 4, no. 4 (October 1989), pp. 765–99.
- ²⁸ Codevilla, *Informing Statecraft*, p. 422.
- ²⁹ Strategic intelligence is that required for the formation of policy and military plans at national and international levels. Operational intelligence is that required by commanders for the planning and execution of military operations. During wartime, US units usually keep track of enemy formations two echelons below their own. Thus,

divisions keep track of opposing forces down to battalion level, brigades monitor enemy units down to company level, and battalions monitor enemy units to platoon level.

- ³⁰ See, for example, E.R. May (ed.) *Knowing One's Enemies: Intelligence Assessment Before Two World Wars* (Princeton: Princeton University Press, 1986); and R.K. Betts, 'Analysis, war, and decision: why intelligence failures are inevitable', *World Politics*, vol. 31, no. 1 (October 1978), pp. 61–89.
- ³¹ See, for example, W.K. Wark, *The Ultimate Enemy: British Intelligence and Nazi Germany, 1933–1939* (London: Oxford University Press, 1986). A more contemporary perspective of this problem is provided by Kevin Russell, 'The subjectivity of intelligence analysis and implications for the US National Security Strategy', *SAIS Review*, vol. 24, no. 1 (Winter 2004), pp. 147–63.
- ³² Geoffrey Blainey, *The Causes of War* (Melbourne: Sun Books, 1977), p. 122.
- ³³ During the 1950s, Burma was seen by the US as another Southeast Asian 'domino' threatened by communist subversion. See, for example, *1952 policy statement by US on goals in Southeast Asia*, Key Document No. 2, The Pentagon Papers (Toronto: Bantam Books, 1971), p. 28; and Henry Kissinger, *Diplomacy* (New York: Touchstone, 1995), pp. 624, 632.
- ³⁴ See, for example, R.H. Taylor, *The State in Myanmar* (London: Hurst and Co., 2009) and D.I. Steinberg, *Burma: The State of Myanmar* (Washington: Georgetown University Press, 2001). Also useful is Martin Smith, 'Army politics as a historical legacy: the experience of Burma', in Kees Koonings and Dirk Kruijt (eds), *Political Armies: The Military and Nation Building in the Age of Democracy* (London: Zed Books, 2002), pp. 270–296.
- ³⁵ See, for example, M.P. Callahan, *Making Enemies: War and State Building in Burma* (Ithaca: Cornell University Press, 2003).
- ³⁶ See, for example, Tin Maung Maung Than, 'Burma: the "new professionalism" of the Tatmadaw', in Muthiah Alagappa (ed.), *Military Professionalism in Asia: Conceptual and Empirical Perspectives* (Honolulu: East-West Centre, 2001), pp. 163–78; Win Min, 'Looking inside the Burmese military', *Asian Survey*, vol. 48, no. 6 (November–December 2008), pp. 1018–37; and M.P. Callahan, 'Junta dreams or nightmares? Observations of Burma's military since 1988', *Bulletin of Concerned Asian Scholars*, vol. 31, no. 3 (1999), pp. 52–8.
- ³⁷ Desmond Ball, *Burma's Military Secrets: Signals Intelligence (SIGINT) from the Second World War to Civil War and Cyber Warfare* (Bangkok: White Lotus, 1998). See also Desmond Ball, *How the Tatmadaw talks: the Burmese army's radio systems*, Working Paper No. 388 (Canberra: Strategic and Defence Studies Centre, Australian National University, 2004).
- ³⁸ See, for example, Andrew Selth, *Burma's order of battle: an interim assessment*, Working Paper No. 351 (Canberra: Strategic and Defence Studies Centre, Australian National University, 2000); and *Civil and military administrative echelon of state peace and Development Council in Burma* (Mae Sot: Documentation and Research Department, Network for Democracy and Development, May 2007).
- ³⁹ Andrew Selth, *Burma's Armed Forces: Power Without Glory* (Norwalk: EastBridge, 2002); and Maung Aung Myoe, *Building the Tatmadaw*.
- ⁴⁰ For a rare admission of this fact, see 'The Military Capabilities and Limitations', presentation at a conference on 'Strategic Rivalries on the Bay of Bengal: The Burma/Myanmar Nexus', Washington, DC, 1 February 2001. For a summary report of the conference, see <<http://www.burmadebate.org/archives/spring01strategic.html>>.
- ⁴¹ This subject is discussed in Selth, *Modern Burma studies*.
- ⁴² The Tatmadaw is overwhelmingly male, the small number of Burmese women in uniform being restricted to junior medical and administrative positions.
- ⁴³ These figures are a little higher than those published by the IISS. Maung Aung Myoe, *Military doctrine and strategy in Myanmar: a historical perspective*, Working Paper No. 339 (Canberra: Strategic and Defence Studies Centre, Australian National University, 1999), p. 13. See also *The Military Balance 1988–1989* (London: IISS, 1989), pp. 159–60.
- ⁴⁴ Cited in Maung Aung Myoe, *Building the Tatmadaw*, p. 200. This was the same official who stated in 1999 that the Tatmadaw's strength was 'not over 350,000' and unlikely to grow any further. Barry Wain, 'Myanmar military growth worries the neighbours', *Asian Wall Street Journal*, 22 January 1999.

- ⁴⁵ Selth, *Burma's Armed Forces*, p. 296.
- ⁴⁶ See, for example, Andrew Tan, *Force modernisation trends in Southeast Asia*, Working Paper No. 59, (Singapore: Institute for Defence and Strategic Studies, 2004).
- ⁴⁷ A.H. Cordesman and Martin Kleiber, *The Asian Conventional Military Balance in 2006: Overview of Major Asian Powers* (Washington: Centre for Strategic and International Studies, 2006), p. 35.
- ⁴⁸ 'Myanmar armed forces', Wikipedia, <<http://en.wikipedia.org/wiki/Tatmadaw>>.
- ⁴⁹ Selth, *Burma's Armed Forces*, pp. 79–80; and Maung Aung Myoe, *Building the Tatmadaw*, p. 200.
- ⁵⁰ Maung Aung Myoe, *Building the Tatmadaw*, pp. 88, 90.
- ⁵¹ Citing what was described as a Tatmadaw payroll, the newspaper said that there were 586,196 in the army, 17,349 in the navy and 15,892 in the air force. 'Burma border situation: arms buildup noted', *Bangkok Daily News*, 31 May 1999.
- ⁵² Interview, Rangoon, January 2009.
- ⁵³ M.P. Callahan, 'Of *kyay-zu* and *kyet-su*: the military in 2006', in Monique Skidmore and Trevor Wilson (eds), *Myanmar: The state, Community and the Environment* (Canberra: ANU E Press and Asia Pacific Press, 2007), p. 36.
- ⁵⁴ *Sold to be Soldiers: The Recruitment and Use of Child Soldiers in Burma* (New York: Human Rights Watch, 2007), <<http://www.hrw.org/en/reports/2007/10/30/sold-be-soldiers>>. Lacking the necessary data, Human Rights Watch sensibly refrains from making any estimates of the number of child soldiers in the Tatmadaw.
- ⁵⁵ Maung Aung Myoe, *The Tatmadaw in Myanmar since 1988: an interim assessment*, Working Paper No. 342 (Canberra: Strategic and Defence Studies Centre, Australian National University, 1999), p. 13.
- ⁵⁶ Samuel Blyth, 'Army conditions leave Myanmar under strength', *Jane's Defence News*, 30 March 2006, <http://www.janes.com/defence/news/jdw/jdw060330_1_n.shtml>. See also Samuel Blythe, 'Myanmar army report spotlights morale problems', *Jane's Defence Weekly*, 4 April 2007, p. 14.
- ⁵⁷ Interviews, Rangoon, November 1999 and March 2008.
- ⁵⁸ Interviews, Bangkok and Rangoon, March 2008 and January 2009.
- ⁵⁹ The IISS gives the figure 47,373,958 while the CIA uses 48,137,741. 'Myanmar', *The Military Balance 2008*, p. 396; and 'Burma', *CIA Factbook*, <<https://www.cia.gov/library/publications/the-world-factbook/print/bm.html>>. The *CIA Factbook* was last updated on 14 May 2009.
- ⁶⁰ Foreign and Commonwealth Office, *Country profile: Burma*, 2 December 2008, <<http://www.fco.gov.uk/en/about-the-fco/country-profiles/asia-oceania/burma/>>.
- ⁶¹ *Selected ASEAN Basic Indicators*, <<http://www.aseansec.org/stat/Table1.pdf>>. The statistics are provided by ASEAN member states.
- ⁶² This figure appears to include three million Rohingyas – a predominantly Muslim ethnic group hailing from the sub-continent – half of whom currently live outside Burma. All have been denied Burmese citizenship. See, for example, Khin Maung Lay, 'Burma fuels the Rohingya tragedy', *Far Eastern Economic Review*, March 2009, <<http://www.feer.com/essays/2009/march/burma-fuels-the-rohingya-tragedy>>.
- ⁶³ See, for example, Antonio Graceffo, 'Operations inside Burma: an interview with Free Burma Rangers', *Tales of Asia*, 1 December 2007, <<http://www.talesofasia.com/rs-171-burma.htm>>.
- ⁶⁴ The United Kingdom Parliament, 'Burma', Answer from Mr Fatchett to Mr Rowe, *Hansard*, 22 April 2009, <<http://www.publications.parliament.uk/pa/cm199798/cmhansrd/vo980225/text/80225w07.htm>>.
- ⁶⁵ 'Burma', *CIA Factbook*.
- ⁶⁶ Selth, *Burma's Armed Forces*, pp. 130–54.
- ⁶⁷ *Defence economic trends in the Asia Pacific 2007* (Canberra: Defence Intelligence Organisation, 2007), pp. 5–6, <http://www.defence.gov.au/dio/documents/2007_DET.pdf>; and *Defence Economic Trends in the Asia Pacific 1997* (Canberra: Defence Intelligence Organisation, 1997), p. 13. See also *Burma: Foreign Economic Trends Report* (US Embassy, Rangoon, 1997).
- ⁶⁸ Maung Aung Myoe, *Building the Tatmadaw*, p. 206.
- ⁶⁹ Callahan, 'Of *kyay-zu* and *kyet-su*', pp. 46–8.
- ⁷⁰ Selth, *Burma's Armed Forces*, pp. 145–48; and Maung Aung Myoe, *Building the Tatmadaw*, pp. 175–87.
- ⁷¹ See, for example, Selth, *Burma's Armed Forces*, pp. 313–16.
- ⁷² *Defence Economic Trends in the Asia Pacific 2007*, pp. 5–6.

- ⁷³ This was subject to the caveat, however, that SIPRI lacked reliable data on Burma's annual defence expenditure. *SIPRI Yearbook 2005: Armaments, Disarmament and International Security* (Stocholm: Stockholm Peace and Research Institute, 2005), p. 318. See also Taisamyone, 'Disproportionate military expenditure in Burma', *Burma Digest*, 6 July 2007, <<http://burmadigest.wordpress.com/2007/07/06/editorial-disproportionate-military-expenditure-in-burma/>>.
- ⁷⁴ By way of illustration, an aircraft is a weapons platform. The missiles and bombs it carries are weapons. Together, they constitute a weapon system. The term 'equipment' includes items like the pilot's helmet.
- ⁷⁵ See, for example, Shiv Aroor, 'Fleet expansion in mind, Myanmar looks to India for expertise', *Indian Express*, 13 January 2006.
- ⁷⁶ Maung Aung Myoe, *Building the Tatmadaw*, pp. 202–04.
- ⁷⁷ Interview, Rangoon, March 1995.
- ⁷⁸ For example, observers in Rangoon were first alerted to the delivery of Chinese QBZ-95 assault rifles last year, when the bodyguards of senior Tatmadaw officers were seen in public armed with these weapons. Interview, Rangoon, January 2009. See also 'China exports its radical new assault rifle', *Strategy Page*, 28 February 2009, <<http://www.strategypage.com/htm/htweap/articles/20090228.aspx?comments=Y>>.
- ⁷⁹ No reputable intelligence agency is likely to hand over classified information, or reveal confidential sources and methods, but they can alert think tanks and trusted contacts to misleading information, and gently steer them towards more accurate and balanced judgements – assuming, of course, that the agencies themselves have access to more reliable data.
- ⁸⁰ Andrew Selth, 'Burma's defence expenditure and arms industries', *Contemporary Security Policy*, vol. 19, no. 2, (August 1998), pp. 23–49. See also David Capie, *Small arms production and transfers in Southeast Asia*, Canberra Paper No. 146 (Canberra: Strategic and Defence Studies Centre, Australian National University, 2002), pp. 55–66.
- ⁸¹ In addition to the IISS's annual *Military Balance* and various yearbooks published by Jane's, such lists are periodically compiled by journals like *World Defence Almanac*, *Military Technology*, *Asian Defence Journal* and *Military Powers Encyclopaedia*. See also Cordesman and Kleiber, *The Asian Conventional Military Balance in 2006*; and Aung Zaw, 'A growing Tatmadaw', *The Irrawaddy*, vol. 14, no. 3 (March 2006), pp. 22–4.
- ⁸² Compare, for example, the orders of battle published by the IISS, SIPRI and Jane's Information Systems. The Wikipedia website gives another version, at <http://en.wikipedia.org/wiki/Military_of_Myanmar>. The most recent treatment of this subject is Maung Aung Myoe, *Building the Tatmadaw*, pp. 105–34.
- ⁸³ For example, during the 1988 uprising the army deployed a number of Universal T-16 Bren Carriers that had been given to the Tatmadaw by the UK in the 1950s and, it is assumed, kept in storage for 30 years. See Bertil Lintner, *Outrage: Burma's Struggle for Democracy* (Bangkok: White Lotus, 1990), pp. 131ff; and Selth, *Burma's Armed Forces*, pp. 162, 177, n.32.
- ⁸⁴ Codevilla, *Informing Statecraft*, p. 420.
- ⁸⁵ One experienced observer described the army during this period as 'an effective and highly experienced military machine with a courage and stamina probably unique in the Southeast Asia region'. Bertil Lintner, *Land of Jade: A Journey from India through Northern Burma to China* (Bangkok: White Orchid Press, 1996), pp. 238, 255.
- ⁸⁶ Maung Aung Myoe, *Building the Tatmadaw*, pp. 16–46. See also Aung Zaw, 'Than Shwe's "the art of war"', *The Irrawaddy*, vol. 17, no. 2 (April 2009), <http://www.irrawaddy.org/article.php?art_id=15412>.
- ⁸⁷ The reported appearance of observers from the People's Liberation Army at some of these joint exercises has given rise to speculation that China is providing advisors to the Burmese armed forces. See, for example, 'Burma, China to hold joint military exercises in coastal region' *Burma News Update*, August 2000, p. 8; and Selth, *Burma's Armed Forces*, p. 99, n.112.
- ⁸⁸ Accounts by foreigners who claim to have fought in Burma vary greatly in their reliability. See, for example, David Everett with Kingsley Flett, *Shadow Warrior* (Camberwell: Michael Joseph, 2008); Mike Tucker, *The Long Patrol: With Karen Guerrillas in Burma* (Bangkok: Asia Books, 2003); and T.J. Bleming, *War in Karen*

Country: Armed Struggle for a Free and Independent Karen State in Southeast Asia (New York: iUniverse, 2007).

- ⁸⁹ See, for example, Free Burma Rangers, *Burma army using new landmines against villagers in northern Karen State* FBR Report, 19 December 2008, <<http://www.freeburmarangers.org/Reports/2008/20081219.html>>. See also International Campaign to Ban Landmines, *Myanmar/Burma*, Landmine Monitor Report 2008, <<http://www.icbl.org/lm/2008/countries/myanmar.php>>.
- ⁹⁰ See, for example, *Comments by SLORC Army Defectors* (Karen Human Rights Group, 20 June 1994); 'Interview with an SPDC Child Soldier', Karen Human Rights Group, *Report from the Field*, 26 April 2006; 'Life inside the Burma army: SPDC deserter testimonies', Karen Human Rights Group, *News Bulletin*, 9 May 2008; and 'Interview with an SPDC deserter', Karen Human Rights Group, *News Bulletin*, 28 July 2008.
- ⁹¹ Callahan, *Making Enemies*, p. 220. See also Callahan, 'Junta dreams or nightmares?', p. 54.
- ⁹² *The Blue Helmets: A Review of United Nations Peace-Keeping* (New York: United Nations Department of Public Information, 1996) Appendix.
- ⁹³ 'Malaysia, Myanmar look to expand ties', *Jane's Defence Weekly*, 30 May 2001, p. 14.
- ⁹⁴ For a rare interview with Myanmar Air Force pilots training overseas (in this case, at the Socialist Federal Republic of Yugoslavia Air Force Military Academy at Zadar in Croatia), see Radoljub Matovic, 'G-4 in the Union of Myanmar', *Military Avionics* (1990).
- ⁹⁵ Maung Aung Myoe, *Building the Tatmadaw*, pp. 33–42. See also William Ashton (pseudonym for Andrew Selth), 'Myanmar: invasion fears prompt search for air defences', *Asia-Pacific Defence Reporter*, vol. 27, no. 2 (March 2001), pp. 32–4.
- ⁹⁶ See, for example, Bertil Lintner, 'Myanmar's Chinese connection', *International Defence Review*, vol. 27, no. 11 (November 1994), p. 26.
- ⁹⁷ Clifford McCoy, 'Myanmar's losing military strategy', *Asia Times Online*, 7 October 2006, <http://www.atimes.com/atimes/Southeast_Asia/HJ07Ae01.html>.
- ⁹⁸ These kinds of problems are discussed in Selth, *Burma's Armed Forces*, *passim*, and Maung Aung Myoe, *Building the Tatmadaw*, pp. 201–04.
- ⁹⁹ Maung Aung Myoe, *Building the Tatmadaw*, p. 193.
- ¹⁰⁰ As Martin Smith has pointed out, 'Burma is one of the most ethnically diverse countries in the world', but about two thirds of the population is ethnic Burman. See Martin Smith, *State of strife: the dynamics of ethnic conflict in Burma*, Policy Studies No. 36 (Washington, DC: East–West Centre, 2007), p. 8.
- ¹⁰¹ See, for example, McCoy, 'Myanmar's losing military strategy'; and *Abuse under orders, the SPDC and DKBA armies through the eyes of their soldiers*, KHRG Report 2001–01 (Karen Human Rights Group, March 2001), <<http://www.khrg.org/khrg2001/khrg0101.html>>.
- ¹⁰² See, for example, Maung Maung Oo, 'Shopping for', *The Irrawaddy*, vol. 9, no. 6 (July 2001), <http://www.irrawaddy.org/article.php?art_id=2299&page=1>.
- ¹⁰³ Maung Aung Myoe, *Building the Tatmadaw*, p. 201.
- ¹⁰⁴ It is not known, however, on what basis these judgements were made. See Callahan, *Making Enemies*, p. 218; and Aung Zaw, 'The enemy within'.
- ¹⁰⁵ Callahan, 'Of *kyay-su* and *kyet-su*', p. 42.
- ¹⁰⁶ Brian McCartan, 'Moment of truth for Myanmar's military', *Asia Times Online*, 27 September 2007, <http://www.atimes.com/atimes/Southeast_Asia/II27Ae05.html>. See also Blythe, 'Myanmar army report spotlights morale problems', p. 14; and 'Lack of army food could lead to corruption', *Democratic Voice of Burma*, 29 April 2009.
- ¹⁰⁷ There is currently no national service system in place in Burma. However, through various means young men are often forced to join the armed forces and in that sense are conscripted.
- ¹⁰⁸ Blythe, 'Army conditions leave Myanmar under strength'; and Blythe, 'Myanmar army report spotlights morale problems'. See also Min Lwin, 'Desertions, assassinations plague Burmese armed forces', *The Irrawaddy*, 9 October 2008, <http://www.irrawaddy.org/article.php?art_id=14420>.
- ¹⁰⁹ For a discussion of the nature of power relationships in Burma see D.I. Steinberg, *Turmoil in Burma: Contested Legitimacies in Myanmar* (Norwalk: EastBridge, 2006), 37–49.
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- ¹¹¹ Bertil Lintner, 'Myanmar: reflections', *Asian Analysis* (November 2007), <<http://www.aseanfocus.com/asiananalysis/article.cfm?articleID=1075>>.
- ¹¹² Interviews, Rangoon, February 2008. A comment attributed to this author by *The Irrawaddy*, predicting a mutiny during the 2007 demonstrations, was a complete fabrication. No such comment was made. See Violet Cho, 'Crackdown was not unexpected', *The Irrawaddy*, 26 September 2007, <http://www.irrawaddy.org/article.php?art_id=8746>; and 'A correction', *The Irrawaddy*, 8 October 2007, <http://www.irrawaddy.org/opinion_story.php?art_id=7197&page=36>.
- ¹¹³ Larry Jagan, 'Splits emerge in Burma's army over country's roadmap', *Mizzima News*, 21 March 2008, <<http://www.mizzima.com/component/content/article/323-splits-emerge-in-burmas-army-over-countrys-roadmap.html>>; and Larry Jagan, 'A split in the ranks?', *Bangkok Post*, 29 March 2009, <<http://www.bangkokpost.com/news/investigation/14206/a-split-in-the-ranks>>. Some observers now question whether the USDA will be used as a political party to contest the elections for Burma's new parliament. See 'Junta-backed USDA unlikely to contest 2010 election', *Mizzima News*, 18 December 2008, <<http://www.mizzima.com/news/election-2010/1469-junta-backed-usda-unlikely-to-contest-2010-election.html>>.
- ¹¹⁴ Win Min, 'Internal dynamics of the Burmese military: before, during and after the 2007 demonstrations', in Monique Skidmore and Trevor Wilson (eds), *Dictatorship, Disorder and Decline in Myanmar* (Canberra: ANU E Press, 2008), pp. 29–50.
- ¹¹⁵ Andrew Selth, 'Burma's armed forces: how loyal?', *The Interpreter*, web log of the Lowy Institute for International Policy, 6 June 2008, <<http://www.lowyinterpreter.org/post/2008/06/Burma's-armed-forces-How-loyal.aspx>>.
- ¹¹⁶ Codevilla, *Informing Statecraft*, p. 418.
- ¹¹⁷ In 1988, it was claimed by one senior opposition figure that 60 per cent of the army supported democratic rule. See Bertil Lintner, 'Backdown or bloodbath', *Far Eastern Economic Review*, 22 September 1988, p. 14. During the uprising that year, a small number of military personnel marched with the demonstrators. More importantly, in the 1990 elections some districts containing large military cantonments returned pro-democracy candidates.
- ¹¹⁸ Periodic calls for an international arms embargo against Burma usually include the claim that such a measure is needed to deny the regime the weapons it needs to remain in power. Yet the regime does not rely on imported arms, most of which are clearly unsuited to internal security roles. See, for example, Naing Ko Ko, 'Burma junta deserves a universal arms embargo', *Burma Digest*, 14 February 2008, <<http://burmadigest.info/2008/02/14/burma-junta-deserves-a-universal-arms-embargo/>>.
- ¹¹⁹ Jonathan Pearlman, 'Rudd says donors must bash in doors', *Sydney Morning Herald*, 10 May 2008.
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- ¹²³ H.J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: Alfred Knopf, 1949), p. 74 and *passim*.
- ¹²⁴ Herman, 'Intelligence and the assessment of military capabilities', p. 772.
- ¹²⁵ This was the view, for example, of veteran Burma-watcher Robert Taylor in 2004. Aung Zaw, 'Interpreting the state of Burma: an interview with Robert H. Taylor', *The Irrawaddy*, vol. 12, no. 2 (February 2004), <http://www.irrawaddy.org/article.php?art_id=303>.

¹²⁶ Joseph S. Nye, 'Peering into the future', *Foreign Affairs*, vol. 73, no. 4 (July/August 1994), p. 86.