

IR/PS  
Stacks  
U  
1  
W67  
v. 352



# STRATEGIC & DEFENCE STUDIES CENTRE

WORKING PAPER NO.352

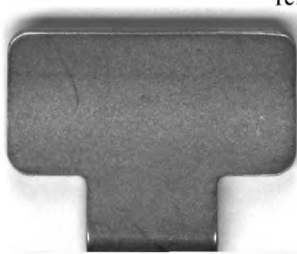
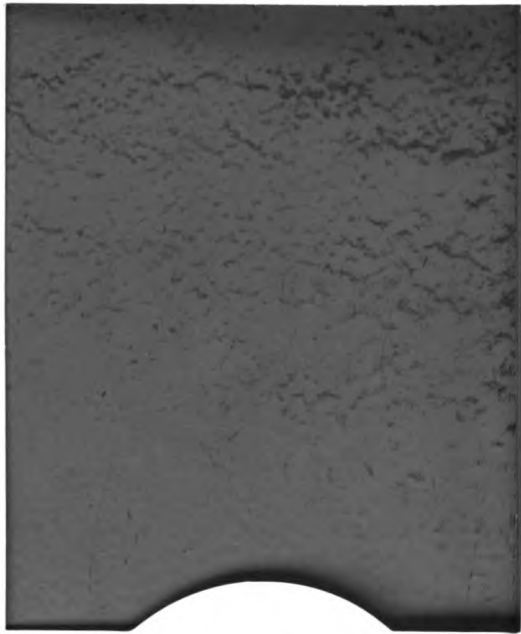
## LANDMINES IN BURMA: THE MILITARY DIMENSION

*Andrew Selth*

Working paper (Australian  
National University,  
Strategic and Defence  
Studies Centre)  
IR/PS Stacks  
UC San Diego  
Received on: 03-29-01

AUST

Generated on 2020-12-07 22:49 GMT / https://hdl.handle.net/2027/uc1.31822029516960 / http://www.hathitrust.org/access\_use#cc-by-nc-nd-4.0  
Creative Commons Attribution-NonCommercial-NoDerivatives



***SDSC Working Papers***

Series Editor: Helen Hookey

Published and distributed by:

Strategic and Defence Studies Centre

The Australian National University

Canberra ACT 0200

Australia

Tel: 02 62438555 Fax: 02 62480816



3 1822 02951 6960

INT'L RELATIONS/PACIFIC STUDIES LIBRARY  
UNIVERSITY OF CALIFORNIA, SAN DIEGO  
LA JOLLA, CALIFORNIA 92093

**WORKING PAPER NO.352**

**LANDMINES IN BURMA: THE  
MILITARY DIMENSION**

*Andrew Selth*

*Canberra  
November 2000*

National Library of Australia  
Cataloguing-in-Publication Entry  
Selth, Andrew, 1951- .  
Landmines in Burma: the military dimension.

**Bibliography**  
ISBN 0 7315 2779 8                      ISSN 0158-3751

1. Insurgency - Burma. 2. Land mines - Burma. 3. Burma -  
Armed forces - Weapons systems. I. Australian National  
University. Strategic and Defence Studies Centre. II. Title.  
(Series: Working paper (Australian National University.  
Strategic and Defence Studies Centre); no.352).

355.0332591

© Andrew Selth, 2000

41-3-01

Generated on 2020-12-07 22:49 GMT / https://hdl.handle.net/2027/uc1.31822029516960  
Creative Commons Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access\_use#cc-by-nc-nd-4.0

## ABSTRACT

Since the signing of the 1997 Mine Ban Treaty in Ottawa, considerable attention has been given to the problem of uncleared landmines around the world and the thousands of casualties they cause each year. Yet, in all the literature produced on this subject to date, and discussions of the problem in various international forums, mention is rarely made of Burma. This is despite the fact that anti-personnel (AP) landmines have been, and are still being, manufactured and laid in large numbers in that country, with serious consequences for both combatants and non-combatants alike. Neither the Burmese armed forces (known as the *Tatmadaw*), nor the country's numerous armed insurgent groups, have shown any sign of restricting their use of these weapons. To the contrary, in recent years the use of AP landmines by both sides has significantly increased, making them a major feature of armed conflict in Burma and exacerbating a problem which threatens to haunt that country and its neighbours for years to come.

## AUTHOR'S NOTE

After the creation of the State Law and Order Restoration Council (SLORC) in September 1988, Burma's name was officially 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 in January 1948. In July 1989 the military regime changed the country's name once again, this time to *Myanmar Naing-Ngan*, or the 'Union of Myanmar'. At the same time, a number of other place names were changed to conform to their original Burmese pronunciation. These new names were subsequently accepted by the United Nations 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 human rights abuses and its refusal to hand over power to an elected civilian government. In this study the better known names, for example Burma instead of Myanmar, and Rangoon instead of Yangon, have been retained for ease of recognition.

This study stems largely from research conducted in Burma and Thailand in late 1999. However, the author would like to acknowledge the contribution made by Yeshua Moser-Puangsuwan of Non-Violence International, who compiled the Burma chapter of *Landmine Monitor Report 1999* (Human Rights Watch and the International Campaign to Ban Landmines, New York, 1999), and the Burma chapter of the forthcoming *Landmine Monitor Report 2000*. The author and Yeshua Moser-Puangsuwan jointly published an article entitled 'Burma's Forgotten Minefields' in *Jane's Intelligence Review*, Vol.12, No.10, October 2000.

This Working Paper represents the author's views alone. It has been drawn entirely from open sources, and has no official status or endorsement. Unless otherwise stated, publications of the Strategic and Defence Studies Centre are presented without endorsement as contributions to the public record and debate. Authors are responsible for their own analysis and conclusions.

## LANDMINES IN BURMA: THE MILITARY DIMENSION

Andrew Selth\*

### Introduction

It has been estimated that there are currently about 110 million uncleared anti-personnel (AP) landmines around the world, scattered through more than 70 countries.<sup>1</sup> The serious social, economic and humanitarian problems posed by these weapons, and the thousands of casualties they cause every year, have prompted a major international campaign to ban their use. So far, 135 countries have signed or acceded to the 1997 Ottawa Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, commonly known as the Mine Ban Treaty (MBT).<sup>2</sup> Ninety-four countries have formally lodged instruments of ratification.

However, in all the literature produced on this subject to date, and discussions of the mine problem in various international forums, mention is rarely made of Burma.<sup>3</sup> This is despite the fact that anti-personnel landmines have long been, and are still being, manufactured and laid in large numbers in that country, with serious consequences for both combatants and non-combatants alike. Indeed, the number of casualties produced by these weapons each year exceeds those of Burma's mine-afflicted neighbour, Cambodia, which has been the subject of much greater world attention.<sup>4</sup> Researchers for the International Campaign to Ban Landmines (ICBL) now place Burma second only to Afghanistan as the Asian country faced with the most critical landmine problem.<sup>5</sup>

Neither the Burmese armed forces (known as the *Tatmadaw*), nor the country's numerous armed insurgent groups, have shown any sign of restricting their use of these weapons. To the contrary, in recent years the use of AP landmines by both sides has significantly increased, making them a major feature of armed conflict in Burma and exacerbating a problem which threatens to haunt that country and its neighbours for years to come.

---

\* Andrew Selth is a former visiting fellow at the Strategic and Defence Studies Centre, Australian National University.

### **Mine Warfare in Burma**

Landmines, explosive booby traps and improvised explosive devices (IED) have been used in Burma for many years.<sup>6</sup>

At first, these weapons played a relatively minor role. During the Second World War, for example, 'the dispersed style of fighting and lack of prior experience of mine warfare by both sides [in Burma] meant that mines were seldom used'.<sup>7</sup> In any case, Japanese mine warfare was 'unpredictable and unsophisticated'.<sup>8</sup> With its institutionalised confidence in victory, and emphasis on aggression and movement, the Imperial Japanese Army did not formulate either a strong doctrine or detailed tactical concepts for the use of landmines. Partly for these reasons, Japan's Burma Area Army did not build the strong defensive positions, supported by minefields, which were encountered by the Allies in places like the Philippines and Okinawa. Also, Japanese mines were not as powerful or robust as those manufactured by Germany and Italy. The Allies had better landmines and a more developed doctrine for their use, but the nature of Lieutenant General Slim's fast-moving campaign to drive the Japanese out of Burma militated against the laying of large fixed minefields.<sup>9</sup> In fact, 'throughout most of the Pacific Theatre, mine warfare had little operational import'.<sup>10</sup>

After Burma regained its independence from the United Kingdom in January 1948, several groups took up arms against the fledgling government of prime minister U Nu.<sup>11</sup> They were later joined by a number of other ethnic separatist organisations. In the long drawn-out guerrilla campaigns which followed, anti-personnel landmines were again used. However, circumstances dictated that, at least for the next decade, they would still play a relatively minor role in the bitter fighting which took place around the country. Although Burma was awash with infantry weapons after the Second World War, both the Burma Army (BA) and the various insurgent forces opposing it faced considerable difficulties in obtaining regular or plentiful supplies of modern munitions. This prevented the extensive use of commercially produced landmines, and forced the protagonists to rely more on locally produced booby traps and improvised explosive devices, the latter sometimes manufactured from unexploded ordnance (UXO). These weapons still resulted in a large number of casualties over the years, but they tended to be less effective and had more limited operational lives.

There was one major exception to this rule. During the early to mid-1950s, there were regular shipments of modern arms by the United States and Taiwan to the Nationalist Chinese (*Kuomintang*, or KMT) military forces which had escaped from China after the communist victory in 1949, and established themselves in northeastern Burma. These secret shipments, mainly

by unmarked Curtiss C-46 and Douglas C-47 transport aircraft under contract to the US Central Intelligence Agency (CIA), included both anti-personnel and anti-tank (AT) landmines.<sup>12</sup> The large KMT military bases built up in places like Mong Hsat and Mong Pa Liao were defended by elaborate fortifications which probably included defensive minefields.<sup>13</sup>

From the 1960s onwards, landmines became much easier to obtain in Burma and, as a result, their rate of usage seems to have increased significantly. The Burma Army was able to get supplies of AP and anti-vehicle (AV) mines from its own arms factories, which had been established with West German assistance (mainly during the 1960s and 1970s).<sup>14</sup> Despite General Ne Win's *coup d'état* in 1962, and the installation of a military government in Rangoon, Burma also received modest shipments of munitions from Western countries like the United States.<sup>15</sup> These shipments almost certainly included AP and AV landmines. Around the same time, China dramatically increased its supply of arms (including landmines) to the Communist Party of Burma (CPB) guerrillas based on Burma's northern border.<sup>16</sup> Other Burmese insurgent groups and narcotics-based private armies were able to purchase landmines on the black market in Thailand, including from corrupt members of the Thai Police and Royal Thai Army (RTA).<sup>17</sup> The insurgents financed these deals by selling precious stones, jade and narcotics, or from the income obtained by taxing the lucrative (but technically illegal) cross-border trade between Burma and Thailand.

Since the 1970s, the use of anti-personnel landmines has been a common feature of armed conflict in Burma.<sup>18</sup> All forces engaged in the civil war have used these weapons, and casualties among both combatants and non-combatants alike have risen accordingly. This problem soon became well known to many living in Burma and along its international borders, but the Rangoon regime made efforts not to expose the full effects of its mine warfare to public scrutiny.<sup>19</sup> Periodic criticisms by the regime of insurgent groups using landmines were rarely followed by an acknowledgement of the *Tatmadaw's* own practices in this regard. Also, Burma's political isolation and highly controlled news media ensured that little information about the extent of these practices leaked out to the wider world. It has only been since the increased international awareness of the global landmine problem engendered by the 1997 Ottawa Convention that greater attention has been given to this issue, and the Rangoon regime has had to justify its policies. Yet even now there is considerable reluctance on the part of the Burmese armed forces to abandon their use of landmines, which are seen as an essential weapon in the continuing struggle to defeat their domestic opponents.

#### 4 *Strategic and Defence Studies Centre*

Burma's two paramount intelligence agencies, the Office of Strategic Studies (OSS) and Directorate of Defence Services Intelligence (DDSI), have stated recently that landmines are no longer being made or used in Burma, as 'there is no longer any need for them'.<sup>20</sup> They, and other official agencies like the Ministry of Foreign Affairs and Myanmar Red Cross Society, have consistently attempted to portray Burma's civil war as a thing of the past, stressing that almost all the country's major insurgent groups have either collapsed or entered into cease-fire agreements with the central government.<sup>21</sup> While it is true that the CPB did collapse in 1989, and drug lord Khun Sa's Mong Tai Army (MTA) surrendered to the *Tatmadaw* in 1996, most other armed groups have yet to secure more than a verbal cease-fire agreement with the regime. They have kept their weapons and maintain their right to resume armed struggle if the cease-fire arrangements break down. Indeed, the regime's truce with the Karenni National Progressive Party (KNPP) has already been broken and fighting between the *Tatmadaw* and the KNPP's Karenni Army has resumed. Other insurgent groups which have never entered into any agreement with the Rangoon regime, like the Karen National Union (KNU), are dismissed by the OSS as weak, divided and disorganised.<sup>22</sup>

Despite these official denials, it is clear that the manufacture and use of anti-personnel landmines in Burma is not only continuing, but has grown significantly in recent years. According to reliable reports, the Burma Army is placing increasing reliance on landmines to defeat those insurgents who continue to hold out against the regime, probably capitalising on the greater availability of modern AP mines from a new arms factory built in central Burma about two years ago.<sup>23</sup> For example, mines are being used extensively against the KNU's Karen National Liberation Army (KNLA) guerrillas in Karen State, Mon State and Irrawaddy Division. Burmese troops have admitted to laying more than 7,000 mines in one operation alone against the Shan State Army (SSA) in Shan State. They are also being used against the Karenni Army in Kayah State.<sup>24</sup> The pro-Rangoon Democratic Karen Buddhist Army (DKBA) is laying large numbers of mines, particularly in Karen State. The *Tatmadaw* also maintains an extensive minefield in Arakan State, stretching for almost the entire length of Burma's land frontier with Bangladesh.<sup>25</sup> Further north, along Burma's border with the northeastern states of India, the Burma Army has laid AP mines as part of its counter-insurgency campaign against the Chin National Army.<sup>26</sup>

Of the 29 insurgent groups identified in the *Landmine Monitor Report 2000*, at least 18 currently engage in mine warfare (although some claim only to use command-detonated mines).<sup>27</sup> Those insurgent groups which have not yet 'entered the legal fold' (as the regime describes the cease-fires) are also



using landmines more than ever before. For example, the KNLA and its allies (like the All Burma Student Democratic Front, or ABSDF) are relying heavily on landmines, IEDs and explosive booby traps in their continuing operations against the *Tatmadaw* along the Burma-Thai border. More than ever, these insurgents are using such weapons instead of troops to protect their base areas and supply lines. They are also mining roads and pathways to restrict the movement of Burma Army patrols and logistics convoys. This shift in tactics seems to have been prompted in large part by the fall of the Karens' fixed bases at Manerplaw and Kawmura in 1995, and the KNLA's subsequent reversion to mobile guerrilla warfare.<sup>28</sup> Landmines are seen as a readily available force multiplier, which can help make up for the insurgents' inferiority in numbers and arms. Adding to the pressure felt by the insurgents has been the massive military expansion and modernisation programme introduced by the Rangoon regime after 1988, and the split in the KNLA which produced the DKBA in 1994.<sup>29</sup>

According to the ICBL, 10 of Burma's 14 states and divisions are currently affected by landmines, with a heavy concentration in eastern Burma.<sup>30</sup> Far from diminishing, as stated by the OSS and DDSI, mine warfare in Burma is becoming an even more serious problem.

## Methods and Results

The scope for using landmines is limited only by the imagination of those laying them. The record shows that, over the past 50 years, both the Burma Army and various Burmese insurgent groups have become skilled in devising ways of employing landmines to greatest effect.

It is difficult to identify any formal doctrine governing their use by either side, but landmines in Burma have been employed for both offensive and defensive purposes. For example, they have been used to initiate ambushes and to channel attacking troops into a killing zone. They have been laid outside the perimeter of both permanent positions and temporary camps, to warn of approaching enemies and defend against attack.<sup>31</sup> They have been widely used along lines of communication, such as railways, roads and pathways, to hinder the movement of troops and supplies.<sup>32</sup> They have also been laid as barriers to prevent the use of certain routes across Burma's international borders. For example, *Tatmadaw* military engineers are reported to have laid extensive minefields along the border with Bangladesh since 1993, to hinder the movement of Muslim Rohingyas into and out of Burma.<sup>33</sup>

Mines also reduce the mobility of those being attacked, and increase a force's logistics burden, by causing casualties who require evacuation and

## 6 Strategic and Defence Studies Centre

costly medical treatment. As Jonathan Falla observed, after witnessing Karen landmine victims living along the Thai-Burma border:

Soldiers have long recognised that smaller mines create bigger problems for the enemy. Dead, he requires only burial. Maimed, he'll need doctors and nurses, transport, blood, drugs, surgery and quite possibly lifelong welfare support.<sup>34</sup>

Mines also undermine the confidence of a military force and sap its morale. The constant fear of tripping a landmine makes movement slower and more tentative. Nor does the psychological dimension of mine warfare stop there. The sight of mine victims can reduce the recruiting levels of a largely voluntary military force like the Burma Army and, at least in democracies, help undermine the popularity of a war among the voting public.

As a general rule, the nature of the guerrilla wars being waged in Burma and the scarcity of resources have not encouraged the mining of large tracts of land, and landmines have rarely been laid simply in order to deny territory to the other side. They have been used, however, by the Burma Army and pro-Rangoon insurgent groups to encourage local villagers either to leave particular areas (often to go to centralised 'resettlement' camps), or to stay away from villages which have already been cleared or destroyed by the *Tatmadaw*. Also, dams, pipelines and other elements of the local civil infrastructure have been mined or booby-trapped. Paddy fields in insurgent areas have been sown with mines in order to prevent local villagers from using them, or harvesting their crops.<sup>35</sup> These policies seem to be part of a deliberate strategy by the Burma Army, known as the 'four cuts', to deny insurgent forces food, funds, recruits and intelligence.<sup>36</sup> In the Maoist parlance once favoured by the *Tatmadaw*, landmines are seen as a means by which the army can help deny the guerrilla fish a sea of peasants in which to swim.

Within these broad parameters, AP landmines in Burma have been laid in three main ways, depending on which kind of weapon is employed.<sup>37</sup> The most common have been stake fragmentation mines like the POMZ-2, which are detonated by a tripwire stretched across a track or hidden in vegetation. They can be used alone or in clusters, the latter often arranged in a zigzag pattern connected by tripwires. Most are on short stakes near ground level, with the aim of maiming the victim, but they can also be set on sticks at waist height in order to cause a larger number of casualties and more severe wounds. Small blast AP mines, like the Chinese Type 72 or US M-16, tend to be buried just beneath the surface of tracks or approaches to defended positions, but they can also be laid seemingly at random through the undergrowth. Sometimes the two types of mine are used together, either for

mutual protection or so that one mine can capitalise on the effects of the other. RTA sappers, for example, have discovered *Tatmadaw* blast mines surrounded by stake mines, along the international border.<sup>38</sup> The other main method relates to the use of directional mines, such as the US M-18 Claymore. These mines are usually command detonated, and thus lend themselves readily to ambushes and the defence of fortified positions. However, they can also be rigged to be detonated by a tripwire, either at ground level or (secured to a tree) at chest height.

There have been no confirmed reports of scatterable or air-delivered anti-personnel landmines being used in Burma.

Anti-vehicle landmines have been used, against both road traffic and railway trains. Some are command detonated but most are activated simply by the weight of the vehicle. Not surprisingly, given the nature of the wars being waged in Burma, this has mainly been an insurgent practice. It is the *Tatmadaw* which relies most heavily on road and rail transport to move troops and supplies. Such attacks also make more of an impact and draw public attention to the insurgent cause. During the early days of the civil war the railways were a favourite target of anti-government groups. In the mid-1950s, for example, the Rangoon-Moulmein railway was subject to continual attack, with trains regularly being blown up and looted by Karen insurgents.<sup>39</sup> Even now, landmine attacks against trains continue to occur, and in certain areas road traffic is still at risk from insurgent mines laid against military supply convoys.<sup>40</sup> The Burma Army has also used AV mines, however, mainly to prevent supplies and reinforcements from reaching the insurgents by road from Thailand.<sup>41</sup> The DKBA is also known to have used AV mines to slow down pursuit by the Royal Thai Army after launching raids against Karen refugee camps in Thailand.<sup>42</sup>

As a result of all these practices, Burma has suffered a large number of casualties from landmines over the years. Reliable statistics are very difficult to obtain but, according to the US State Department, in the early 1990s casualties from landmines were thought to account for about 15 per cent of all military losses in Burma.<sup>43</sup> Yet combatants have not been the only ones killed or maimed. So have been many local villagers, particularly in the border areas where the fighting has lasted longer, and usually been the most bitter.<sup>44</sup> For example, in 1993 it was estimated that each year in Burma more than 1,500 people were fitted with artificial limbs as a result of landmine explosions. Many more never received any attention and died as a result of their wounds.<sup>45</sup> The number of casualties each year probably declined after the negotiation of cease-fires with most of the main insurgent groups, and the consequent reduction in fighting, but the recent increase in landmine usage by

both sides has returned the rate of casualties to earlier levels. The ICBL has estimated that, in 1999, 1,500 people were killed or injured by landmines. Two-thirds of these were probably military personnel.<sup>46</sup> Sixteen per cent were reported to be women, while 12 per cent were children.<sup>47</sup>

These figures are likely to grow. For example, Thai hospitals along the Burma border have reportedly treated as many mine casualties in the first three months of 2000 as in all of 1999.<sup>48</sup> According to one well-informed official in Rangoon, most landmine victims now come from Karen State, with others coming from Karenni State, Shan State and, to a lesser extent, Arakan State.<sup>49</sup>

Greatly exacerbating this problem has been the very poor management of the mines laid. Both the Burma Army and various insurgent groups have failed to keep accurate or comprehensive records of where their mines have been placed. According to Non-Violence International, one former insurgent commander is reported to have stated that: 'For each mine we lay, half kill the enemy. The other half kill our own soldiers, kill our villagers and the animals'.<sup>50</sup> During the fall of the KNLA's base at Manerplaw, for example, the militant All Burma Students Democratic Front revealed that all casualties taken were caused by its own defensive minefield, not enemy fire.<sup>51</sup> For security reasons local villagers are often not informed of the whereabouts of mines. Even if they are told by the insurgents which paths and fields are mined, they rarely know the precise location of these weapons.<sup>52</sup> If questioned by members of the *Tatmadaw*, villagers are usually reluctant to reveal their knowledge of any mines laid nearby for fear of being accused of collaborating with the insurgents, a crime sometimes punished by death.

Often, Burma Army soldiers too do not know exactly where their own mines have been laid. The *Tatmadaw* reportedly operates on the basis of 'registered' and 'lost' mines. According to the ICBL:

Registered mines are laid as a defensive perimeter around military camps, or along supply lines, at certain times. The locations of these mines are recorded, and when the operation is finished these mines are removed. Lost mines are never recovered.<sup>53</sup>

Yet even in the case of registered mines proper maps are rarely produced. The army does not have the global positioning system (GPS) equipment necessary to record precise details of minefields, but even basic recording techniques seem to be ignored. Often, when a BA unit leaves an area, details about the local hazards are simply described in terms of 'six mines on the small hill near the camp'.<sup>54</sup> Even if better information is provided, the smaller plastic blast mines now being used by the Burma Army can be moved or even

washed away during heavy rainfalls, to new locations unknown to anyone until they are detonated. Nor does the *Tatmadaw* appear to trade information about the location of its minefields with its allies, like the DKBA.<sup>55</sup> Burma Army and DKBA units do not tell local villagers where mines have been laid, for fear that they will warn the insurgents.

One saving grace in the past was that the landmines were made of metal, and were liable to rust, rendering them inoperable after a few rainy seasons. The dry cell batteries required for detonation by some insurgent mines rarely lasted more than six months, due to their limited power and the harsh climatic conditions. Also, the wooden stakes used to set up some kinds of AP fragmentation mines, like the POMZ-2, had a relatively short life in areas where the climate was hot and wet. According to one Burmese officer with experience fighting the CPB, some mines used by the Burma Army during the 1960s and 1970s became unserviceable because the explosive charge tended to be eaten by ants.<sup>56</sup> The more modern AP mines now being used by both the *Tatmadaw* and insurgents, however, have much longer lives. They are made from more durable materials, do not rely on batteries, and remain serviceable a lot longer after being laid. Also, it appears that, where possible, stake mines are being placed on metal spikes so that they are effective for longer periods.<sup>57</sup>

### Landmines Used in Burma

A wide range of anti-personnel and anti-vehicle landmines have been used in Burma over the years.

Details are hard to obtain, but it would appear that before 1988 the Burma Army had access to common Eastern-bloc stake-mounted fragmentation mines such as the Soviet-designed POMZ-2 and POMZ-2M.<sup>58</sup> (China also makes versions of these mines, designated the Type 58 and Type 59 respectively.) A tripwire detonated mine, the POMZ-2 weighs about 2.3 kilograms (kg), contains about 75 grams of trinitrotoluene (TNT) and has an effective range of about four metres. It can be detonated by an actuation force as low as 2 kg.<sup>59</sup> Over the past few years the *Tatmadaw's* supplies of these mines have apparently been boosted by a locally produced version of the POMZ-2, designated the MM-1. Another kind of stake-mounted fragmentation mine, quite similar in appearance to the POMZ-2 and POMZ-2M, has also been made and used in Burma in the past, but has yet to be fully identified.<sup>60</sup>

Before 1988 Burma's arms factories also made a simple pressure-activated AP blast mine, which was issued to the *Tatmadaw* for use against

insurgents. This weapon, however, has not yet been identified. Given the seminal influence of the Germans on mine warfare, and the technical assistance provided to the Burmese arms industry by the German government during the 1960s and 1970s, it is possible that the *Tatmadaw's* AP blast mine around this time was a modified German design.<sup>61</sup> Alternatively, it could have been a copy of one of the more common Eastern-bloc mines, like the Soviet PMN AP blast mine.

Before the collapse of the CPB in 1989, China provided it with large numbers of Type 58 AP blast mines (a close copy of the Soviet PMN mine). These mines appear also to have been acquired by other insurgent groups, some of which have continued to use them to this day. More recently, they have been adopted by the Burma Army as one of its standard landmines. The Type 58, or at least a very close copy, is now being manufactured in Burma at a new Chinese-built factory in central Burma, under the local designation MM-2.<sup>62</sup> According to the Karen Human Rights Group and the International Campaign to Ban Landmines, the MM-2 is 'modelled on a cheap Chinese-made mine which is flat, round and partly made of plastic; however, the Burmese version is made of metal'.<sup>63</sup> This type of mine usually weighs about 550 grams, almost half of which is the TNT explosive charge. In recent years insurgent groups have encountered large numbers of these mines, and the Royal Thai Army has cleared many mines of this type, with recognisable Burmese government markings, from along the international border.<sup>64</sup>

It appears that, before 1988, the *Tatmadaw* also imported (or was given as part of military aid packages) a number of other AP and AV landmine types. These would have probably come from countries like the United Kingdom, the United States, the Soviet Union and Yugoslavia, all of which provided arms to Burma at one time or another.<sup>65</sup> For example, the Burma Army was (and still is) quite familiar with US-manufactured M-18 (Claymore) directional AP mines, M-16 A1 bounding fragmentation AP mines and M-14 anti-personnel blast mines (or landmines similar to these models).<sup>66</sup> According to the US State Department, M-18 Claymore mines (or locally produced copies) seem to have been particularly favoured by the *Tatmadaw* in its operations against insurgent groups during the 1980s.<sup>67</sup> It is also believed that the United States and perhaps a number of other countries (like Yugoslavia) provided anti-tank mines to Burma in the 1950s and possibly the 1960s.<sup>68</sup> For example, the US M-7 A2 anti-tank mine was once widely employed by the Burma Army, but it is not known if this is still the case.<sup>69</sup> Given the restrictions placed on US arms sales to Burma since 1988, this seems unlikely, unless copies have been manufactured locally or acquired on the black market.

Since the *Tatmadaw* took back direct control of the country in 1988, and created the State Law and Order Restoration Council (SLORC), it has faced an arms embargo at the hands of its traditional suppliers. This embargo has continued under the SLORC's successor, the State Peace and Development Council (SPDC), which was created in 1997 to give the impression of a change in government, and a new set of policies. As a consequence of this ban, the Burmese armed forces have been forced to look further afield and now rely on a much wider range of sources for their arms and military equipment. Most have come from China, which since 1989 has become Rangoon's staunchest ally, but Singapore, Pakistan, Israel, Russia, Poland, Yugoslavia, North Korea and Portugal are also known to have sold arms and ammunition to Burma's military regime over the past 12 years. Few have done so openly, and a number have even denied their relationship with Rangoon in order to escape international criticism. China, Singapore, Pakistan and Israel all produce landmines and are the most likely of these countries to have included such weapons in their arms shipments to Burma.<sup>70</sup>

For example, there is strong evidence that since 1989, after the CPB collapsed and bilateral relations with China rapidly improved, the Beijing government has supplied Burma with a variety of anti-personnel landmines.<sup>71</sup> In addition to those weapons noted above, one well-informed source in Rangoon has suggested that arms shipments from China have included the Type 69 AP bounding fragmentation mine, similar in design and function to the American-made M-16, popularly known as the 'Bouncing Betty'.<sup>72</sup> Both US and Chinese mines of this type have been used by the *Tatmadaw* in operations against Karen insurgents in Irrawaddy and Tenasserim divisions. Large numbers of Chinese Type 72 AP landmines have also been acquired by the Burma Army in recent years. This cheaply produced, plastic-bodied blast mine is small enough to fit into a person's hand, but has a potent TNT/RDX explosive charge. In addition, there has been at least one report of a Chinese Type 59 'shoebox' AP mine (a copy of the ubiquitous Russian PMD-6 mine) being used by the Burmese armed forces.<sup>73</sup>

Other mines suspected of having been supplied to Burma since 1988 include the Italian VS-50 blast mine and Valmera 69 bounding mine, but to date this has not been confirmed. Both are modern, minimum-metal weapons, with proven capabilities. The Defence Services Historical Museum in Rangoon, which has recently added a large display about mine warfare in Burma, includes exhibits of the Chinese Type 59 AT mine, the Israeli No.26 AT mine, and the Italian VS 1.6 mine.<sup>74</sup> The Type 59 mine (a copy of the Soviet TMN-46 AT blast mine) could have been acquired during operations against the CPB before 1989, or alternatively could have been provided to the

*Tatmadaw* by a range of other countries (like Israel) which also produce this particular weapon.<sup>75</sup> It is possible that the more modern Italian and Israeli mines are currently being used by the Burma Army, but this cannot yet be confirmed.

There have been several reports of at least two other AP mines being used in Burma, which have yet to be clearly identified. A number of organisations in close touch with villagers along the Thai-Burma border, such as the Karen Human Rights Group, Non-Violence International and the Jesuit Refugee Service, have all reported that the Burma Army uses a landmine which they have described as the M-76. This is in fact the LTM-76. There is also an almost identical mine known as the LTM-73.<sup>76</sup> While in outward appearance these mines look a little like the Israeli No.12 bounding fragmentation AP mine, they are usually described as stake fragmentation mines.<sup>77</sup> Similar doubts surround their origins. The markings on the outside of the mines are in English, and follow the NATO style, leading some observers to believe that these mines are American. Yet others disagree, saying that they do not resemble any US mine known.<sup>78</sup> There is also some confusion over whether these mines are imported by the *Tatmadaw* or are manufactured locally.

Like the armed forces, Burma's various insurgent groups have acquired their landmines from many sources. They have bought US, Russian and Chinese mines on the black market or, as in the case of the CPB, were directly supplied by China. The former seem to have included large quantities of US M-14 AP blast mines (or at least copies of the M-14 made in Singapore or Vietnam). These small, plastic-bodied mines contain nearly 30 grams of tetryl explosive and are very difficult to detect. At least four different insurgent groups have them in their inventories.<sup>79</sup> Chinese Type 58 and Type 59 stake mines, and Type 58 AP blast mines, are also common. The lightweight Chinese Type 72 blast mines being provided to the *Tatmadaw* have also been acquired by some insurgent groups.<sup>80</sup> Other weapons obtained from black-market traders have included US M-18 Claymore directional mines and possibly even the smaller Thai version of this mine, known as the Model 123 'mini-Claymore'.<sup>81</sup> In addition to those weapons purchased from black marketeers, or even on the grey international arms market, the insurgents have captured stocks of mines from the *Tatmadaw*, including the M-1, M-2 and locally produced versions of the M-18.

Supplies of black market mines have tended to fluctuate over the years, but there has always been someone willing and able to provide them to Burmese insurgent groups. For example, the wars in Vietnam, Laos and Cambodia over the past 40 years saw a massive influx of weapons into the



region, many of which were diverted to the black market by Vietnamese, Khmer and Thai traders. Additional arms were stolen from RTA armouries, or from aid shipments to Thailand by the United States.<sup>82</sup> Sometimes a number of insurgent groups have joined together to obtain supplies.<sup>83</sup> Prices have varied, but many mines are now very cheap. For example, according to the ICBL, in 1999 a US- or Vietnamese-made M-14 anti-personnel mine cost about US\$5.00, while a M-18 Claymore mine sold for about \$11.00.<sup>84</sup> The Chinese Type 72 AP blast mine is widely available on the world market for about US\$3.00 each. It is sometimes sold for as little as US\$1.00.<sup>85</sup> While Burmese insurgent groups had goods to sell, and could tax the cross-border trade with Thailand, trade in such weapons was brisk. Since 1988, however, the income of some groups has dropped markedly, forcing them to rely more on locally made IEDs. Those insurgent groups trading in narcotics, however, still have the funds to buy large numbers of commercially made landmines.

### Landmine Manufacture in Burma

While the military regime in Rangoon has always been able to find countries willing to sell it arms, even after the imposition of an embargo by the Western democracies, it has never been comfortable relying on foreigners for essential military supplies. Since the late 1950s, the *Tatmadaw* has gradually built up an extensive network of its own defence industries, capable of producing a range of basic arms and ammunition, including anti-personnel and anti-vehicle landmines. There is strong evidence that in recent years this capability has been significantly increased.

For many years before the SLORC's takeover in 1988, Burma had the means to produce its own landmines. From 1957 onwards, with considerable help from the West German government, General Ne Win's military regime built a number of factories capable of manufacturing automatic rifles, machine guns, grenades, mortars and small-arms ammunition. In the late 1960s, the Germans helped to build a plant designed to make high explosives for both military and civilian use. A second high-explosive filling plant, based on the manufacture of TNT, was constructed in the early 1980s.<sup>86</sup> Most of these factories were situated in a heavily guarded defence industrial complex on the western side of the Irrawaddy River near Prome. There were a number of other plants near Magwe.<sup>87</sup> Known as *Ka Pa Sa* factories (after the initials of *Karkweye Pyitsu Setyouin*, the Burmese name for the Directorate of Defence Industries), these factories were under the direct control of the Ministry of Defence. Given their level of sophistication, and the quality of technical advice available from Germany, these factories would have found the manufacture of basic AP and AV landmines a relatively simple task.

While details are difficult to obtain, it would appear that most of the mines produced in these factories were copies of proven models with which the Burma Army was already familiar. These included common Eastern-bloc, stake-mounted, fragmentation AP mines, like the POMZ-2 and POMZ-2M.<sup>88</sup> As noted above, Burma has also manufactured another stake mine, very similar to the POMZ-2, which has yet to be clearly identified. It is possible that it is a local variant, perhaps modelled on a Yugoslav AP stake mine like the old PMR-1.<sup>89</sup> A blast AP mine was also produced, although it has been described by a Burmese army officer as being:

of poor quality, little better than those used by the insurgent groups. The trip plates were steel and tended to rust. It did not last more than six years.<sup>90</sup>

In addition, Burma has long produced a *shi-twe* directional AP mine, to all appearances a close copy of the US M-18 Claymore mine.<sup>91</sup> These weapons were known collectively to the Burma Army as *lu-that* (anti-personnel) mines. Some anti-vehicle mines were probably also made, although the nature of the insurgent wars being fought in Burma would have meant that priority was given to the production of AP mines.<sup>92</sup>

While the output from these factories was probably able to satisfy the Burma Army's basic needs before 1988, it does not appear to have been enough for the new generation of military leaders which came to power that year. About two years ago, a secret agreement was reportedly signed with China for the construction of a completely new factory near Meiktila, in central Burma, solely to produce landmines. Although different sources disagree on the progress made on the factory since then, it is clear that serial production of some basic mine types is already well advanced.<sup>93</sup> This initiative seems to have been prompted in part by the expansion and modernisation of the *Tatmadaw* since 1988. Despite the reduction in threats to the Rangoon government, Burma's military capabilities are being dramatically increased in almost all categories. The construction of this new factory also seems to be part of a wide-ranging import substitution programme, aimed at reducing Rangoon's dependence on foreign military suppliers.<sup>94</sup> Rangoon's very close relationship with China, particularly as an arms supplier, would make the People's Republic the logical choice to build such a plant.

From the limited information available, this new factory produces at least two types of AP landmines, designated the MM-1 and MM-2. Some reports list as many as five types in production. As noted above, the MM-1 is essentially the Chinese Type 59 stake-mounted fragmentation mine, with slight modifications to the detonator and weather cap. As the Chinese Type 59

is a close copy of the old Soviet POMZ and POMZ-2M mines, it would already be familiar to the Burma Army. The MM-2 design closely follows that of China's Type 58 AP blast mine, itself a copy of the old Soviet PMN landmine. Two variants of the MM-2 have been confirmed. One has the usual arming assembly and detonator plugs on opposite sides of the mine body. The other, found on the Bangladesh border, appears only to have the arming mechanism on the side of the mine.<sup>95</sup> All these mines can be manufactured very cheaply, using relatively simple technology. The characteristics of the MM-3, MM-4 and MM-5 landmines are still unknown, although it is possible that one is an anti-vehicle mine. Burma's locally produced directional mine may have also been given a new 'MM' designation (possibly the MM-5). Following the practice adopted by Burma's defence industries in the past, it is presumed that these 'MM' designations mean (in English) Myanmar Mine 1, Myanmar Mine 2 and so on.<sup>96</sup>

Most informed Burma-watchers believe that China is still providing technical assistance and spare parts for the Meiktila factory, as well as some of the key components used in the manufacture of these mines.<sup>97</sup> There are also rumours in Rangoon that Singapore (which manufactures its own range of plastic-bodied AP and AV mines, including some foreign designs under licence) may have assisted in the establishment and operation of this plant. Singapore is secretly assisting Burma in other areas of arms manufacture, for example in the production of a new family of infantry weapons, but claims that it is also helping to produce landmines in Burma cannot be substantiated.<sup>98</sup> If Singapore is involved in this trade, it is more likely to be exporting finished mines to Burma from its own factories. It is expected that eventually the Burmese armed forces will seek to become completely independent in the production of basic types of anti-personnel and anti-vehicle landmines.

Most Burmese insurgent groups have maintained workshops in which to repair and manufacture weapons, including landmines. Before the fall of Manerplaw in early 1995, for example, each KNLA brigade had its own arsenal and there was a large and well-equipped workshop in the headquarters compound.<sup>99</sup> Through long familiarity, trial and error, and even some assistance from foreign mercenaries, the KNLA and other insurgent groups have become well acquainted with a wide range of civil and military explosives, including gunpowder (black powder), dynamite, gelignite, TNT, RDX,<sup>100</sup> amatol, C-4 and nitro-methane compounds.<sup>101</sup> Some groups are known to have shared their knowledge about the manufacture of landmines and other IEDs.<sup>102</sup>

After the collapse of the CPB in 1989, however, the drug lord Khun Sa probably had the greatest capacity among all of Burma's insurgent groups and narcotics-based armies to manufacture and use landmines. At his Ho Mong base camp he established a well-equipped arsenal, with lathes and furnaces for smelting iron, reportedly staffed by 200 MTA technicians. This arsenal also stored about 40-50 tons of TNT.<sup>103</sup> When Khun Sa surrendered in 1996, the Burma Army took possession of, and reportedly destroyed, more than 2,000 landmines.<sup>104</sup> Most appear to have been small AP mines but Khun Sa also had a stock of large AV mines which he claimed was to protect his camp from 'external aggression'.<sup>105</sup> It is not known what specific kinds of mines were being manufactured at Ho Mong or held in the MTA's inventory, but they are most likely to have been copies of the simpler locally produced AP mines, like the POMZ-2. According to one weapons expert, these sorts of mines are 'simple enough to be produced in back-street workshops'.<sup>106</sup>

Other insurgent groups have not had the funds, expertise or facilities to make landmines of this kind, or on this scale. Most have tended to rely on booby-traps and other improvised explosive devices. Explosives have been manufactured, obtained commercially, bought on the black market or stolen from quarries in Burma and surrounding countries.<sup>107</sup> They have been placed in any available container - usually plastic pipes, empty food tins or even pieces of bamboo. Sometimes bottles have been used, since the glass readily fragments. Metal waste, shotgun pellets and nails have been added as shrapnel, to give the IED greater lethality.<sup>108</sup> Electric detonators have been obtained from the same quarries or industrial sites. Trip plates are usually made of wood and wire, and linked to a common dry cell battery.<sup>109</sup> These improvised mines are quite effective at close ranges, but usually have a limited life, often no more than six months, as the batteries tend to run out of power after that time.<sup>110</sup> Also, they are often susceptible to the weather. Some insurgent groups are also reported to make crude directional mines, while mortar bombs and unexploded ordnance of all calibres have been rigged to function as landmines.<sup>111</sup>

A number of insurgent groups have also purchased or made anti-vehicle landmines, some powerful enough to blow up trucks and even derail trains. In 1993, for example, Mon insurgents were held responsible for a number of civilian deaths when a landmine blew up a transport train in Burma.<sup>112</sup> More recently, the KNLA was accused by the Rangoon regime of laying a landmine which blew up a minibus, killing seven civilians and injuring ten others. (The KNU denied the charge, claiming that the mine had been set by the Burma Army or DKBA as a way of extorting money from civilian busline operators.)<sup>113</sup>

While the manufacture of IEDs usually suggests difficulties in obtaining commercially produced landmines, some insurgent groups are adept at making such weapons in large numbers. For example, two stockpiles of landmines currently in the hands of ethnic military forces, mostly of indigenous construction, are estimated to number in the thousands.<sup>114</sup>

Such is the demand for landmines in Burma, that all stocks produced appear to have been used in-country. There have been no reports of either the Rangoon regime or any insurgent group exporting landmines to another country. The Tatmadaw has, however, transferred landmines to pro-Rangoon groups like the DKBA, for use against other insurgents. It has also been reported that the Burma Army provides landmines to Lahu mercenaries whom the regime has employed against insurgent groups in the Shan State.<sup>115</sup>

### Mine Laying, Detection and Clearing

The Burmese armed forces have long relied on traditional methods to lay mines, namely by hand. In the case of the Burma Army, these mines are usually laid by members of the Engineering Corps (still sometimes referred to as the 'BE', or Burma Engineers).<sup>116</sup> Infantry soldiers apparently do not receive any formal instruction in this role, but are sometimes called upon to lay mines when army engineers are not available. In these circumstances the troops lay mines 'under the direction and instruction of their commanding officer'.<sup>117</sup> The engineers reportedly have some towed mine-laying vehicles which can be used where the requirement is for large areas to be mined, but this does not seem to have occurred very often.<sup>118</sup> In any case, the difficult terrain in the insurgent areas around Burma's borders would restrict the effectiveness of such machines.

It is not known whether a similar demarcation exists between sappers and ordinary soldiers in the insurgent armies. This would appear logical, given the dangerous and specialised nature of mine warfare, but as a rule the insurgents do not have the manpower or resources available to the *Tatmadaw*, and probably share even this role.

The United States estimated in 1993 that 'Burma is currently facing a tremendous problem with uncleared landmines'.<sup>119</sup> One year later, for reasons which remain unclear, this estimate was downgraded by the State Department, which described Burma as only having 'a moderate problem'.<sup>120</sup> In recent years, however, the use of landmines in Burma has dramatically escalated and the problem of unmarked and uncleared minefields is now clearly very serious. Yet there are no humanitarian mine clearance programmes in Burma, even in areas where ceasefires have been declared. Nor are there any mine-

Generated on 2020-12-07 22:49 GMT / https://hdl.handle.net/2027/uc1.31822029516960  
Creative Commons Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access\_use#cc-by-nc-nd-4.0

awareness campaigns to educate local villagers about the dangers of these weapons.<sup>121</sup>

Over the past 50 years, Burma Army engineers have used a variety of means to detect and clear landmines. Manual methods, mainly involving the use of metal probes, have been most common (and probably the most effective).<sup>122</sup> Since the 1980s, however, a greater reliance seems to have been placed on the use of mechanical mine detectors. One reliable report has stated that the *Tatmadaw* purchased some new mine-detecting equipment in the early 1990s.<sup>123</sup> Details of this equipment are hard to obtain, but it is known to have included French DHPM-1A mine-detection sets, White's Electronics 6000 Di-PRO SL detectors from the United Kingdom, and South Korean-made NMD-9 equipment.<sup>124</sup> There have also been reliable reports that Burma now manufactures its own portable mine detector, known as the *Tha-ma-93*. From all appearances this detector, which consists of a circular search head, carrying handle, battery-powered control box and a set of attached headphones, seems to be a close copy, or perhaps a modification, of an imported device like one of those listed above.<sup>125</sup>

The Burma Army's arsenal also includes Bangalore torpedoes, which can be used to clear pathways through large minefields.<sup>126</sup> While it is difficult to envisage many situations in which such methods might now be called for, the *Tatmadaw* could use these weapons during frontal assaults on heavily defended positions.

The Burma Army has also reportedly used specialised mine detecting and detonating vehicles. These range from a jeep pushing a weighted trailer to set off the mines in its path, and a tank-mounted mine roller designed to do the same thing, to a specially designed mine clearance plough. The latter seems simply to be a small tank with a bulldozer blade attached to its front end.<sup>127</sup> It is not known how many of these vehicles are currently in the Burma Army's order of battle, how they were acquired, or where they are from. It is possible that some have been built by the Burma Army itself, with designs based on well-known models for sale on the international market. The Burma Army's mechanical and electrical engineers have shown a considerable talent for improvisation and adaptation over the years, including the design and manufacture of several different kinds of armoured fighting vehicles.<sup>128</sup> However, the demand for mine-clearing vehicles does not seem to be high, as the harsh nature of the terrain around Burma's borders, where the greatest number of insurgent mines has been laid, would greatly restrict their use. Also, the experience of mine clearance teams in other countries has cast some doubt on the efficacy of such machines.<sup>129</sup>

Serious consideration has apparently been given by the Burma Army to the use of sniffer dogs to detect mines, but how often this method has been used, and with what degree of success, is unknown.<sup>130</sup> While a potentially very effective method of locating mines, it has been found that dogs often have trouble finding mines in hot and windy conditions, in areas covered by thick vegetation, or in circumstances where there are a great many mines laid closely together.<sup>131</sup> There is also a heavy training and logistics burden associated with the employment of sniffer dogs for mine clearance, which the *Tatmadaw* can ill afford.

For the past 15 years there have been reliable reports that the Burma Army has routinely used local villagers and forced labourers (including 'porters') to act as human minesweepers.<sup>132</sup> These people (including women and children) have been forced to walk ahead of military units in insurgent areas, in order to detonate any landmines or booby traps which lie in their path.<sup>133</sup> For this practice, the Burmese government has recently been formally condemned by the United Nations International Labour Organisation (ILO).<sup>134</sup> Also, according to the US State Department, 'porters and forced labour are rumoured to aid in manual mine clearing operations'.<sup>135</sup> It is not known exactly what this practice might entail, but it is unlikely that any members of the ethnic communities would be trained by the *Tatmadaw* in mine-clearance techniques which could later be employed against it. These rumours could simply refer to the Burma Army's practice of forcing local civilians to walk down roads and forest paths ahead of military units, sweeping the ground ahead of them with branches or brooms.<sup>136</sup> Civilians forced to clear minefields in this way have usually been denied medical attention if injured. Some may have simply been executed.<sup>137</sup>

Most insurgent groups claim that they remove their mines when the need for them has passed.<sup>138</sup> They cite humanitarian considerations but are doubtless also prompted to do so through necessity. Karen guerrillas, for example, reportedly feel that their limited funds are better used to buy guns and ammunition, rather than commercial landmines, and so they try to conserve mines and IEDs as much as possible. They claim that, because of the shortage of resources at present, they try to dig up and take their landmines with them when they move.<sup>139</sup>

### Mines and Burma's Neighbours

Just as Burma's civil wars have spilled over its national boundaries into neighbouring countries, so has Burma's landmine problem. Despite repeated denials, there is clear evidence that the *Tatmadaw* has laid mines, either

deliberately or by accident, in neighbouring states, notably Thailand and Bangladesh. To a lesser extent, so have some insurgent groups.

A number of Burmese insurgent groups have long used Thailand as a sanctuary in which to rest, regroup and re-equip. In doing so, however, they have carried the landmine problem with them. For, in an attempt to prevent the flow of people and supplies across the international frontier, Burma Army troops have laid mines along roads and tracks leading to and from Thailand. Perhaps because of the difficulties in identifying the actual border, which outside of settled areas is very poorly marked, some of these mines have been laid in Thailand itself. In the past, the insurgents too have laid mines on the Thai side of the border. For example, the Karens appear to have used mines to protect their camps along the Moei River (which in places marks the frontier) against flanking movements by Burma Army troops. Also, the medical infrastructure along Burma's borders is very rudimentary, and trained medical personnel and facilities are scarce. This has forced many mine victims to seek medical care across the border, placing increased pressure on Thailand's own medical facilities.<sup>140</sup> This is in addition to the tens of thousands of Burmese civilians who over the years have fled the conflict and sought refuge in Thailand.

It has been estimated by the Royal Thai Army that about 70 per cent of the 2,000 kilometre border between Burma and Thailand has been mined, constituting a total area of about 55 square kilometres.<sup>141</sup> In particular, Burmese landmines have been found in large numbers in Chieng Rai, Mae Hong Son and Tak provinces. In recent years a growing number of local villagers and Thai military personnel have fallen victim to these mines, in addition to the Burmese insurgents for whom they were originally intended. Some Burmese soldiers have also been injured by these weapons.<sup>142</sup> The problem was exacerbated in the past by the Thai practice of laying landmines to help prevent incursions over the border by Burma Army troops and, more often, DKBA soldiers intent on raiding Karen refugee camps. During an attack against Karen refugees in Tak Province in 1997, for example, five DKBA soldiers were killed and several others injured when they stepped on landmines laid by Unit 354 of the Thai Border Patrol Police.<sup>143</sup>

In 1998 Thailand signed the Ottawa Convention, and pledged to destroy its own stockpile of 300,000 landmines.<sup>144</sup> The Thai Mine Action Centre, which was established in January 1999, has since undertaken to clear all landmines from along the country's borders. However, the areas facing the Cambodian border (where 60 to 70 per cent of Thailand's one million foreign landmines are to be found) is to be given first priority for attention.<sup>145</sup> The Centre will only move to the Thai-Burma border after mines have also been



cleared from the Thai-Malaysian border and Thai-Lao border.<sup>146</sup> Some incidental de-mining has already taken place, usually in response to specific requests by local villagers, but the areas close to Burma are unlikely to receive the Centre's full attention until around 2007 to 2009. Even this schedule is likely to suffer lengthy delays, due to a lack of resources and promised external assistance.<sup>147</sup> In the meantime, the number of Burmese mines along (and even inside) the Thai-Burma border is expected to grow, with the associated risk of increased civilian casualties.

*Tatmadaw* mines have also been found in Bangladesh. Before 1997 these weapons were mainly used to help protect Burma Army camps in northern Arakan State. These bases had been relatively small during the 1980s, but were strengthened after the dramatic political and social upheavals of 1991 and 1992, when the Rangoon regime took a range of harsh measures against the State's Muslim population, known as Rohingyas.<sup>148</sup> Particularly after a series of attacks against the Burma Army in the mid-1990s by Rohingya insurgents based in Bangladesh, however, landmines have been laid more widely.<sup>149</sup> As noted above, a barrier minefield now runs almost the entire length of the Bangladesh-Burma border, from the Naf River in the south to the tri-border junction with India.<sup>150</sup> The *Tatmadaw* periodically services this minefield by replacing old or exploded mines with new weapons. The most heavily mined areas tend to be places where Rohingya refugees can cross the border on foot, and where insurgents, black marketeers and others can return to Burma. According to the ICBL, these minefields have already claimed numerous lives, including those of traders, refugees and soldiers. Domestic livestock and migrating elephants have also been killed.<sup>151</sup>

Burma and Bangladesh have discussed the landmine problem during meetings of a Joint Commission created to resolve bilateral issues. Referring to the mines on both sides of the border, Bangladesh foreign minister Abdus Samad Azad announced in 1998 that the two sides had 'decided to identify those [landmines] and take necessary steps'.<sup>152</sup> Progress since then is unknown. It is unlikely that any significant steps have been taken to clear the barrier minefield referred to above. The most that can be expected from this agreement is the clearance of some AP mines which are clearly on the Bangladesh side of the poorly demarcated boundary between the two countries. Bangladesh signed the Ottawa Convention in May 1998, but this did not result in any additional resources being made available for mine clearance, nor any greater cooperation from the Burmese side.<sup>153</sup>

Some anti-personnel landmines have reportedly been laid 'in a few scattered and remote areas' along the Burmese border with China and India, but no further details are known.<sup>154</sup>

### **Burma's Landmine Policies**

At present, Burma appears to be the only member of the Association of Southeast Asian Nations (ASEAN) which actively engages in mine warfare. On present indications, there is no sign that the Rangoon regime intends to reduce either its manufacture or use of landmines. Indeed, the trends are strongly in the opposite direction, with the increased use of AP mines against insurgents by the armed forces being fuelled by a new munitions factory and more sophisticated mines being imported from friendly countries like China.

In these circumstances, it is not surprising that the Rangoon government did not participate in the Ottawa process. It has consistently refused to sign the 1997 Convention against anti-personnel landmines (also known as APLs), stating that it was 'not in a position to associate itself with those states' who concluded the treaty.<sup>155</sup> In 1997 the Burmese foreign minister stated that:

In our view, the real problem lies in the indiscriminate use of APLs and the export and trade in these weapons. It is the indiscriminate use of APLs that is actually killing and maiming innocent children, women and men the world over, and it is the export and trade in APLs that is causing the proliferation of APLs, leading to their indiscriminate use. We should effectively address these real issues, rather than reach out for an indiscriminate and all-encompassing total ban on APLs.<sup>156</sup>

That year and the following two years the SPDC abstained on UN General Assembly resolutions supporting a ban on AP landmines. The Burmese government's representative told the United Nations in 1999 that 'a sweeping ban on landmines is unnecessary and unjustified. The problem is the indiscriminate use of mines, as well as the transfer of them'.<sup>157</sup>

Burma is also a member of the UN Committee on Disarmament (CD), and has indicated its support for moves to negotiate a ban on the transfer of anti-personnel landmines in that forum. Once again, however, it has stated that it would not support a comprehensive ban.<sup>158</sup> As the *Tatmadaw* uses all its mines in Burma, and does not transfer any of its locally produced weapons to other countries, this is a safe position for the Rangoon regime to take.

The Rangoon regime has taken a similar attitude in response to the International Labour Organisation (ILO)'s criticisms of the SPDC, for its use of forced labour and for making porters and local villagers act as 'human minesweepers'. In response to the findings of the ILO's 1998 Commission of Inquiry, Rangoon initially denied any wrong-doing and reverted to its customary formula of rejecting any 'interference' in Burma's internal affairs.<sup>159</sup> It claimed that it was the victim of a plot by certain Western

countries, adding that 'Myanmar finds it impossible to accept such deplorable and unscrupulous action'.<sup>160</sup> Faced in June 2000 with its virtual expulsion from the ILO, however, the Rangoon regime softened its position a little, and officially acknowledged the need to take into consideration 'appropriate measures, including administrative, executive and legislative measures to ensure that there are no instances of forced labour' in Burma.<sup>161</sup> However, there has been no indication that the SPDC's policies will change in the foreseeable future, nor that the *Tatmadaw*'s practice of using civilians to detect landmines will cease.

There are a few other international legal instruments which, if observed, could help to restrict the manufacture and use of AP landmines in Burma. The 1980 Inhumane Weapons Convention (CCW), for example, contains an annex, known as Protocol II (or the Landmines Protocol), which governs the use of landmines, booby-traps and comparable delayed-action devices.<sup>162</sup> While under this convention landmines are not actually banned, its intention is to limit how such weapons are used by preventing combatants from directing mines against civilians and mandating signatories to minimise collateral harm. The Protocol 'is designed to cover the indiscriminate use of mines, remotely-delivered mines and the recording of minefields and eventual clearance after hostilities have ceased'.<sup>163</sup> Anti-handling devices on mines are specifically prohibited. Since it was last amended in 1996, there have been a number of unsuccessful attempts to strengthen this protocol but to date none have been successful.<sup>164</sup> In December 1999 Burma sent observers to the First Annual Conference of States Parties to the CCW Amended Protocol II (Landmines) in Geneva. However, Burma is not a signatory to the Inhumane Weapons Convention, and shows no inclination either to sign it, or to observe its terms.

The 1949 Geneva Convention IV Relative to the Protection of Civilian Persons in Time of War could also apply to mine warfare in Burma. As its name suggests, this convention establishes certain rules for the protection of civilians in areas affected by war. Although Burma is a Party to this convention, it is another international legal instrument which has routinely been ignored by the military government in Rangoon since it took power in 1962. Also, Burma has never shown any interest in accepting the two additional protocols to the 1949 Geneva Conventions, opened for signature in 1977, which relate to the protection of victims of international and non-international armed conflicts. These protocols:

confirm that the right of the parties to international or non-international armed conflicts to choose methods or means of warfare is not

unlimited, and that it is prohibited to use weapons or means of warfare which cause superfluous injury or unnecessary suffering.<sup>165</sup>

In the context of Burma's long-running civil wars, it could be argued that this category includes the indiscriminate use of anti-personnel landmines.

The opposition National League for Democracy (NLD), by contrast, has publicly stated that it would be prepared to support Burma's accession to the Ottawa Convention. In 1995 NLD General Secretary (and Nobel Peace Prize laureate) Aung San Suu Kyi expressed her support for an international ban on landmines.<sup>166</sup> In a press release issued on 1 March 2000, the first anniversary of the entry into force of the MBT, the NLD's Committee Representing the People's Parliament (CRPP) formally endorsed the immediate accession to the treaty by Burma.<sup>167</sup> It stated that:

Anti-personnel mines cause deaths and terrible mutilation even among those who produce and use them. The tragic consequences affect soldiers of the Burmese Army and other armed organisations who are also citizens of this country.<sup>168</sup>

At present, however, the NLD's activities (and those of Aung San Suu Kyi) have been severely curtailed by the military regime, and the NLD has no scope to implement such a policy.

Nor, under current circumstances, is there any likelihood that the Rangoon regime would permit the United Nations or any non-governmental organisation (NGO) to send in skilled mine-clearance experts to help make mine-infested areas safe.<sup>169</sup> This would not only be counter to the *Tatmadaw's* current policies in favour of the increased mining of insurgent areas, but would also be anathema to the intensely nationalistic, almost xenophobic, regime currently in power. Since 1988 the SLORC, and now the SPDC, have demonstrated that they are very sensitive to any external scrutiny of developments in Burma, particularly if they might embarrass the regime or could be deemed relevant to national security. No matter how strong the economic, social or humanitarian imperatives, it is highly unlikely that any foreigners would be permitted to see first-hand what the situation was really like in insurgency-affected areas of the country, let alone introduce a humanitarian mine-clearance programme.

## Conclusion

In these circumstances, the outlook for Burma is not encouraging. Indeed, it is for the continuing manufacture and indiscriminate use of anti-personnel mines by the Burmese armed forces, including in populated areas.

It is highly unlikely that the regime will accept any restrictions on the use of these weapons, particularly if they are proposed by outside agencies like the United Nations. Non-governmental organisations, like the International Campaign Against Landmines, are not likely to fare any better in their attempts to persuade Burma's military leadership to accept restrictions on the way it wages war. While some of Burma's insurgent groups have negotiated cease-fires with the regime, others will continue to employ landmines and explosive booby traps in their long-running struggle against the central government, using whatever resources they can obtain. Even in areas where cease-fires prevail, no de-mining programmes are likely to be introduced.

Thus, all the signs are that landmines will remain a major feature of armed conflict in Burma for many years to come. Even if mine warfare doctrines improve and greater care is taken to record the whereabouts of minefields, the inevitable result will be further casualties, as both combatants and non-combatants alike are killed and maimed by these weapons, in a part of the world which has not known peace for more than 60 years.

**APPENDIX 1**  
**LANDMINES USED IN BURMA**

The following table lists all those landmines known or believed to have been used by the *Tatmadaw* and insurgent groups in Burma since 1948. While every effort has been made to ensure the accuracy of the details provided, the dearth of reliable information about this subject means that the list cannot be considered exhaustive. It is suspected, for example, that the United Kingdom or the United States provided Burma with a quantity of war surplus landmines after independence. Nor does this list include the landmines and improvised explosive devices manufactured by the various insurgent groups.

The identification of the type, original design and current manufacturer of these mines has been based on all the information available, but should not be considered authoritative. Where it has been difficult to differentiate between close copies of the same mine (such as the Russian POMZ-2 and Chinese Type 58) all major variants have been listed. Mines designed by the former Soviet Union have been listed as 'USSR', but have been widely copied by other members of the old Eastern bloc. For consistency, hyphens have been inserted in the designations of some mines, for example MM-1.

LANDMINE	TYPE	DESIGN	MANUFACTURE
<b>Confirmed use:</b>			
MM-1	AP stake frag.	USSR	Burma
POMZ-2	AP stake frag.	USSR	Burma
POMZ-2M	AP stake frag.	USSR	Burma
Type 58	AP stake frag.	USSR	China
Type 59	AP stake frag.	USSR	China
Unknown	AP stake frag.	Unknown	Burma
M-18	AP dir.frag.	US	US
Type 69	AP dir.frag.	US	China
Unknown	AP dir.frag.	Unknown	Burma
M-16 A1	AP bound.frag.	US	US
Type 69	AP bound.frag.	USSR	China
MM-2	AP blast	USSR	Burma
Type 58	AP blast	USSR	China

PMN	AP blast	USSR	USSR
Type 72	AP blast	China	China
M-14	AP blast	US	US
Unknown	AP blast	Unknown	Burma
Unknown	AP blast	Italy	Italy
Type 59	AP box blast	USSR	China
PMD-6	AP box blast	USSR	USSR
M-7 A2	AV blast	US	US
<b>Reported use:</b>			
LTM-76	AP stake frag.	Unknown	Unknown
LTM-73	AP stake frag.	Unknown	Unknown
MM-3	Unknown	Unknown	Burma
MM-4	Unknown	Unknown	Burma
MM-5	Unknown	Unknown	Burma
<b>Possible use:</b>			
PMR-1	AP stake frag.	USSR	Yugoslavia
Model 123	AP dir.frag.	Thailand	Thailand
V-69	AP bound.frag.	Italy	Singapore
M-14	AP blast	US	Vietnam
M-14	AP blast	US	Singapore
VS-50	AP blast	Italy	Italy
Type 59	AV blast	China	China
AT-26	AV blast	Israel	Israel
VS-1.6	AV blast	Italy	Singapore

**KEY:** AP = anti-personnel  
 AV = anti-vehicle  
 frag. = fragmentation  
 bound. = bounding  
 dir. = directional

## APPENDIX 2 LANDMINE SPECIFICATIONS

The following broad description of the generic types of anti-personnel and anti-vehicle landmines is taken from a 1996 SIPRI report, and is based in turn on material compiled by the International Committee of the Red Cross in 1993.

All types of mine fall under at least one of four categories; blast, fragmentation, directional or bounding mines. Blast mines are the most common. They rely on the energy released by an explosive charge to harm the target, but the explosive effect is usually enhanced by fragmentation caused by the blast. In fragmentation mines the blast serves mainly to shatter the mine and to hurl its fragments over as wide an area as possible. Directional mines rely chiefly on fragmentation and utilise the harmful effects of preformed metal fragments of selected size and shape which travel at high velocity in a predetermined arc. In bounding mines a small explosive charge is detonated and propels the mine upwards, scattering fragments - which may be preformed - over a far wider area than would be possible with a surface or buried mine of similar size. All such mines can be activated by pressure, trip wire, electronic or remote control, or by a combination of these methods.<sup>170</sup>

More details about generic mine types are provided in the introductory sections of *Jane's Mines and Mine Clearance, 1997-98*.<sup>171</sup>

The following brief descriptions of the landmines found in Burma draw heavily on *Jane's Mines and Mine Clearance*, but have been supplemented by interviews in Rangoon, Bangkok and Canberra over the past year, as well as correspondence with members of the International Campaign to Ban Landmines. The origins of these mines (where known) have also been given, but it should be borne in mind that the designs of many mines have been copied, some have been made under licence elsewhere, and the booming black-market trade in landmines often disguises their origins. Once again, for consistency, all mine designations have been given hyphens, such as MM-1.

### 1. MM-1 (Burma)

The MM-1 landmine is produced by the *Ka Pa Sa*, Burma's state-owned Defence Products Industries. Its design closely follows that of the old Soviet POMZ-2 'corn cob' stake fragmentation mine (described in detail below). While copies of POMZ-2 (and probably POMZ-2M AP mines) manufactured in Burma before 1988 appear to have followed the original



Soviet design very closely, the MM-1 has been refined in that it has a solid brass detonator in place of the normal Soviet/Chinese MUV series fuze, and a weather cap. Like the POMZ-2, the 60-segment cast-steel body of the MM-1 mine has six lateral rows of fragmentation, in ten vertical columns.<sup>172</sup>

## 2. MM-2 (Burma)

The MM-2 is also manufactured by Burma's Defence Products Industries. It appears to be closely modelled on the Chinese Type 58 AP blast mine, itself a copy of the old Soviet PMN AP mine (described in detail below). While this mine seems to have been manufactured in Burma for some time, production has greatly increased in recent years due to the construction of a new factory (built with Chinese assistance) near Meiktila. There are two known variants of the MM-2 mine.<sup>173</sup>

## 3. POMZ-2 (Russia) and Type 58 (China)

The POMZ-2 AP fragmentation stake mine is 130 mm high, and 60 mm in diameter. It weighs 2.3 kg, of which the TNT explosive charge makes up 75 grams. The operating pull is approximately 1 kg. The main portion of the cast-steel body is externally grooved with six rows of raised elements to enhance fragmentation. The top surface of the mine body is raised into a well, which accepts a mechanical fuze. The lower (open) end of the cylindrical body sits on a wooden stake. Initially developed and manufactured in the Soviet Union, the POMZ-2 is widely used and has been extensively copied by other countries, for example by China where it is known as the Type 58.<sup>174</sup>

## 4. POMZ-2M (Russia) and Type 59 (China)

The POMZ-2M AP fragmentation stake mine is the successor to the POMZ-2. It too has rows of external grooves to enhance fragmentation, but differs from its predecessor in that it only has five lateral rows of fragmentation. The mine body is 107 mm high and 60 mm in diameter. Its weight is 1.8 kg, of which 75 grams constitutes the TNT explosive charge. The operating pull is approximately 1 kg. The top surface of the mine, into which a mechanical fuze is threaded, is flat. The open end of the cylindrical body sits on a short wooden stake. Also developed in the Soviet Union, this mine too has been extensively copied by other countries, including by China which has designated it the Type 59.<sup>175</sup>

## 5. Unknown POMZ-2 type mine

Burma also uses another kind of AP fragmentation stake mine, which has yet to be precisely identified. This mine is about the same size as the POMZ-2, and has the same raised fuze well on the top of the mine body.

Unlike the POMZ-2 and POMZ-2M, however, it has seven lateral rows of fragmentation on the mine body.<sup>176</sup> While described by one local expert as an *asa twet* mine, the English-language meaning of this term is not known. This name may not in fact be its formal designation, but may simply mean 'trip-wire' mine or something similar.<sup>177</sup>

The same Burmese ordnance expert has stated that this mine has been (and may still be) manufactured in Burma.<sup>178</sup> It could simply be a locally produced version of the POMZ-2 mine, or possibly even a version manufactured by an insurgent group like Khun Sa's Mong Tai Army. However, bearing in mind Burma's close relationship (including the supply of arms) in the 1950s with Tito's Yugoslavia, it is also possible that this mine is a copy of the old Yugoslav PMR-1 anti-personnel stake mine. Now obsolete, the PMR-1 is 120 mm high and has a diameter of 80 mm. The cast-steel body has nine rows of external grooves to enhance fragmentation. It weighs 2 kg, of which the explosive accounts for 75 grams. As with the POMZ-2, the open end of the cylindrical body sits on a short wooden stake.<sup>179</sup>

#### **6. M-18 (US) and Type 69 (China)**

The US M-18 directional AP mine, commonly known as the Claymore, is one of the most copied mine designs in the world. The Chinese version is known as the Type 69. The mine is 216 mm long, 81 mm high and 36 mm wide. It weighs 1.58 kg, of which the C-4 explosive component weighs 682 grams. The body of the mine is glass-reinforced polystyrene with a convex face housing 700 spherical fragments in a resin mix. Behind this lies the explosive charge. On the top surface are two threaded detonator wells, sealed with plugs. The mine is normally detonated electrically using a hand dynamo, but it can also be rigged for initiation by tripwire. On firing, the metal fragments cover a horizontal arc of 60 degrees to a height of two metres, with a claimed lethal radius of up to 50 metres.<sup>180</sup>

The directional mines currently made in Burma appear to be close copies of the US M-18 Claymore mine, except that they are black, with Burmese characters painted in white. (The M-18 is usually green or olive in colour).<sup>181</sup>

The M-18 A1, a slightly larger development of the M-18, has also been copied by the Chinese. Their later version is known as the Type 66.<sup>182</sup>

#### **7. M-16 (US)**

The US M-16 series are AP bounding fragmentation mines. The mine is 3.57 kg in weight, of which the TNT explosive main charge weighs 575 grams. The mine is 103 mm in diameter and 203 mm in height. The operating

load is 3.6-20 kg. It can also be operated by tripwires. The cast-iron mine body is housed in a sheet steel sleeve with a central threaded fuze well. On top are three pressure prongs on a sprung plunger. When a load is applied to the prongs, a flash igniter sets off a propellant charge which forces the cast-iron body out of the sleeve. The pyrotechnic delays in the initiators allow the mine to jump to a height of approximately 1 metre before the main charge is detonated. The mine body then shatters, producing a lethal radius in excess of 10 metres.<sup>183</sup>

### **8. Type 69 (China)**

The Chinese Type 69 AP bounding fragmentation mine operates in a broadly similar fashion to the US M-16. The mine is 114 mm high (168 mm with the fuze in place) and 61 mm in diameter. It weighs 1.35 kg, of which 105 grams is the TNT explosive charge. The operating force is 7-20 kg pressure, or a 1.5-4 kg pull. A key difference with the US M-16 'Bouncing Betty' is that, after the initial detonation, when the mine has reached a height of 1 to 1.5 metres, a tether wire fixed to the base plug becomes taut, releasing the mechanism to fire the main charge. This shatters the body of the mine into about 240 small fragments, with a lethal radius of approximately 11 metres.<sup>184</sup>

### **9. PMN (Russia) and Type 58 (China)**

Introduced into service by the Soviet Union in the early 1960s, the PMN AP blast mine usually has a round bakelite body, with a flat, black, rubber pressure plate secured by a thin metal band. The fuze runs transversely through the mine body, with the arming assembly and safety pin protruding from one side and the detonator plug from the other. The PMN is 112 mm in diameter and 56 mm high. It weighs 550 grams, almost half of which (240 grams) is the TNT explosive. The operating pressure is 8-25 kg. The body of the Russian version of the PMN is normally brown, while the Chinese copy (confusingly also designated the Type 58) is black.<sup>185</sup>

### **10. Type 72 (China)**

The Chinese Type 72 is a pressure operated AP blast mine about 78 mm in diameter and 38 mm in height. It weighs 140 grams of which 51 grams is the mixed TNT/RDX explosive charge. The operating pressure is 5-10 kg. These small, plastic-cased mines have a soft, rubberised pressure plate and are very difficult to detect. They have been used widely in Africa, South Asia and Southeast Asia.<sup>186</sup>

### **11. M-14 (US, Singapore) and MN-79 (Vietnam)**

The US M-14 is a small, round, plastic-bodied AP blast mine that is difficult to detect with conventional equipment. It is 40 mm in height, and has

a diameter of 56 mm. The overall weight is 100 grams, of which the tetryl explosive component weighs 29 grams. It has a pressure plate on top and the charge underneath. The operating pressure is 9-16 kg. Although this mine has been withdrawn from US service, it was manufactured in large numbers and it is still possible to acquire stocks through the international arms market. It has also been copied by several countries, including Singapore, and Vietnam (which calls it the MN-79).<sup>187</sup>

#### **12. M-7 A2 (US)**

The US M-7 A2 is a small, metal-cased, pressure-operated AT blast mine. It is roughly rectangular in shape, being 178 mm long, 114 mm wide and 64 mm high. The weight of the mine is 2.2 kg, of which the tetryl explosive charge makes up 1.62 kg. The M-7 A2 is effective against wheeled and lightly armoured vehicles. The mine can also be used as an anti-personnel mine, however, the anti-disturbance device (normally the M-1 pull) substituting as the main firing mechanism.<sup>188</sup>

#### **13. LTM-76, LTM-73 (source unknown)**

These two AP stake fragmentation mines have been encountered in the field by a number of insurgent groups. The Karen Human Rights Group has incorrectly described them as US M-76 A1 mines, but they are yet to be accurately identified.<sup>189</sup> They are marked with NATO-style identifiers in the English language, but do not appear to be US-made. They are approximately 155 mm high and 60 mm in diameter. The mine body is smooth, and includes a raised metal ring just below or across a round safety pin. The fuze is inserted into the top of the mine, as in the case of a POMZ-2. The examples of these mines found to date have been used with a metal stake.<sup>190</sup>

#### **14. PMD-6 (Russia) and Type 59 (China)**

The PMD-6 is a simple AP blast mine which uses a 'shoe-box' design dating back to the Second World War. The mine consists of a wooden box with a hinged lid that overlaps the sides. The main charge is a simple block of TNT, and can be activated either by pressure on the box lid - the customary method - or by using a tripwire. The mine weighs 400 grams, half of which is the explosive charge. It is 190 mm long, 90 mm wide and 65 mm high.<sup>191</sup>

#### **15. Model 123 (Thailand)**

The mine known as the 'Model 123' or 'mini-Claymore' (its correct designation is unknown) is a small directional fragmentation mine made in Thailand. It is 115 mm long, 90 mm wide and 60 mm wide. It weighs 1.5 kg, of which 250 grams is the RDX explosive charge. The Model 123 has a single

detonator well in the centre of the top surface and is usually command detonated. To date its use has only been confirmed in Cambodia.<sup>192</sup>

#### **16. Valmera 69 (Italy and Singapore)**

The Valmera 69 (or V-69) is a large Italian AP bounding fragmentation mine consisting of an outer plastic casing surrounding a steel pot, within which lies the mine body. It is 205 mm high and 130 mm in diameter. It weighs 3.2 kg, of which 420 grams consists of the Composition-B explosive charge. The five-pronged fuze assembly attached to the top of the mine allows both pressure and tripwire operation. Like the Chinese Type 69, the V-69 relies on a tether wire to fire the main charge after the propellant has forced the mine body out of its sleeve to a height of about 45 cm. The main charge in turn shatters an outer section containing more than 1000 steel fragments. Copies of this mine have been manufactured under licence in Singapore.<sup>193</sup>

#### **17. VS-50 (Italy)**

The VS-50 is a resilient, plastic-cased, scatterable AP blast mine, 90 mm in diameter and 45 mm high. It weighs only 185 grams, of which the RDX explosive makes up 43 grams. The operating pressure is 10 kg. It is manufactured in Singapore as the SPM-1. There have not yet been any confirmed reports of this mine being used in the field in Burma. The example observed by the author appears to have been a demonstration model. It was light sandy brown in colour. One well-informed Burmese source (who also stated that it was now being manufactured in Burma) described the weapon as a MT-60 amotil mine, but no mine of this name can be identified.<sup>194</sup>

#### **18. Type 59 (China)**

The Chinese Type 59 anti-tank blast mine is a copy of the venerable Soviet TMN-46 AT mine. Cylindrical in shape with a metal case, it is 105 mm high and 300 mm in diameter. It weighs 8.5 kg, of which 5.64 kg is the TNT explosive charge. It is detonated by an actuation force of 200-700 kg. The pressure plate is stepped to facilitate crushing.<sup>195</sup> This mine is also manufactured in Israel as the No.6 AT mine.

#### **19. AT No.26 (Israel)**

The No.26 is an anti-tank blast mine manufactured in Israel. It has a non-metal case and weighs 8.98 kg, of which 7 kg constitutes the TNT explosive charge. Pressure-operated, it requires an activating force of between 79-120 kg to detonate. An older mine, it is not often encountered in the field.

**20. VS-1.6 (Italy)**

The VS-1.6 is a scatterable minimum-metal anti-tank blast mine. It is 222 mm in diameter and 92 mm in height. It weighs 3 kg, of which 1.85 kg is made up of the Composition-B explosive charge. The operating pressure is 180-220 kg. The fuze has an unusually high degree of shock and blast resistance, which permits it to be scattered from helicopters. It can also be placed manually. The blast from a VS-1.6 is sufficient to damage the running gear of both wheeled and tracked vehicles, though the hull is unlikely to be penetrated if the vehicle is armoured. Designed in Italy, this mine is manufactured under licence in Singapore.<sup>196</sup>

## Notes

<sup>1</sup> Estimates of landmine numbers range between 60 million and 120 million, but 110 million is the figure accepted by the United Nations. See, for example, *Hidden Killers: The Global Landmine Crisis*, Report released by the US Department of State, Bureau of Political-Military Affairs, Office of Humanitarian Demining Programs, Washington DC, September 1998 - hereafter referred to as *Hidden Killers (1998)*. Also, *Landmine Monitor Report 1999: Toward a Mine-Free World* (International Campaign to Ban Landmines and Human Rights Watch, New York, 1999), pp.13-15; and Zdzislaw Lachowski, 'The ban on anti-personnel mines' in *SIPRI Yearbook 1998: Armaments, Disarmament and International Security* (Stockholm International Peace Research Institute and Oxford University Press, London, 1998), p.545.

<sup>2</sup> The text of the Mine Ban Treaty is reproduced in *Landmine Monitor Report 1999*, pp.1058-71. This source also gives details of those countries which have signed and ratified the treaty. It should be noted that the MBT only covers anti-personnel mines. Thus anti-tank and other anti-vehicle mines, and anti-ship mines (whether at sea or in inland waterways) are not covered by the convention.

<sup>3</sup> See, however, Yeshua Moser-Puangsuwan and Andrew Selth, 'Myanmar's forgotten minefields', *Jane's Intelligence Review*, Vol.12, No.10, October 2000, pp.38-42. Burma's landmine problem has also been surveyed by Yeshua Moser-Puangsuwan in the 1999 and 2000 editions of the *Landmine Monitor Report*. See also Elizabeth Olson, 'Land-Mine Abuse is Cited', *International Herald Tribune*, 12 September 2000.

<sup>4</sup> See, for example, Kevin Fedarko, 'Land Mines: Cheap, Deadly and Cruel', *Time*, 12 May 1996, pp.44-5.

<sup>5</sup> Karen Human Rights Group, 'Photo Set 2000-A: Landmines', at <<http://metalab.unc.edu/freeburma/humanrights/khrg/archive/ph.../Landmines.htm>> (September 2000).

<sup>6</sup> A booby trap is different from a landmine in that it is 'a victim-operated device designed to maim or kill a person when they perform an action that they would normally consider to be safe'. See *Jane's Mines and Mine Clearance 1997-98* (Jane's Information Systems, Coulsdon, 1997), Glossary.

<sup>7</sup> Mike Croll, *The History of Landmines* (Leo Cooper, London, 1998), p.72.

<sup>8</sup> *Hidden Killers: The Global Landmine Crisis 1994*, Report to the US Congress on the Problem with Uncleared Landmines and the United States

---

Strategy for Demining and Landmine Control, Prepared by the Office of International Security and Peacekeeping Operations, US Department of State, Washington DC, January 1994 - hereafter referred to as *Hidden Killers (1994)*.

<sup>9</sup> The Allies did, however, lay more than 550 sea mines at the entrances to Burma's main ports, to hinder Japanese resupply efforts. See S. Woodburn Kirby, *The War Against Japan: The Decisive Battles* (Her Majesty's Stationery Office, London, 1961), Vol.III, p.389.

<sup>10</sup> *Hidden Killers (1994)*. In this case, the Pacific Theatre includes the China-Burma-India Theatre.

<sup>11</sup> These groups included the Karen National Defence Organisation, the Burma Communist Party ('Red Flags'), Communist Party of Burma ('White Flags'), the People's Volunteer Organisation, the Mujahids and two battalions of Burma Army mutineers. See *Burma and the Insurrections* (Government of the Union of Burma, Rangoon, 1949).

<sup>12</sup> Interview, Rangoon, December 1999. See also R.H. Taylor, *Foreign and Domestic Consequences of the KMT Intervention in Burma*, Southeast Asia Program Data Paper No.93 (Cornell University, Ithaca, 1973), p.60.

<sup>13</sup> See, for example, A.W. McCoy, *The Politics of Heroin: CIA Complicity in the Global Drug Trade* (Lawrence Hill Books, New York, 1991), pp.162-78; and Bertil Lintner, *Burma in Revolt: Opium and Insurgency Since 1948* (Silkworm Books, Chiang Mai, 1999), pp.125-62.

<sup>14</sup> The first German arms factory - to manufacture G3 automatic rifles - was built in Burma in 1957. Over the next 30 years it was followed by several others, including a number of ammunition and explosive filling plants. See Andrew Selth, 'Burma's Defence Expenditure and Arms Industries', *Contemporary Security Policy*, Vol.19, No.2, August 1998, pp.23-49.

<sup>15</sup> Andrew Selth, *Burma's Arms Procurement Programme*, Working Paper No.289 (Strategic and Defence Studies Centre, Australian National University, Canberra, 1995), pp.2-3.

<sup>16</sup> *Landmine Monitor Report 1999*, p.443; and Bertil Lintner, *The Rise and Fall of the Communist Party of Burma (CPB)* (Cornell University, Ithaca, 1990), p.26. See also Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'.

<sup>17</sup> See, for example, Pasuk Phongpaichit, Sungsidh Piriyarangsang and Nualnoi Treerat, *Guns, Girls, Gambling, Ganja: Thailand's Illegal Economy and*



---

*Public Policy* (Silkworm Books, Chiang Mai, 1998), pp.127-54. It is illegal for private citizens to own landmines in Thailand.

<sup>18</sup> *Hidden Killers: The Global Problem With Uncleared Landmines*, A Report on International Demining Prepared by the Office of International Security Operations, Bureau of Political-Military Affairs, United States Department of State, In Implementation of Section 1364 of the National Defense Authorization Act for Fiscal Year 1993, Washington DC, 1993, p.62 - hereafter referred to as *Hidden Killers (1993)*.

<sup>19</sup> War veterans with amputated limbs, for example, are not usually permitted to attend public events such as the annual parade on Armed Forces Day, when the *Tatmadaw's* military achievements are glorified. The Medical Corps display in the Defence Services Historical Museum in Rangoon, showing the efforts made by the Burma Army to assist injured soldiers, is an exception to the normal rule. Personal observation and interviews, Rangoon, November 1999.

<sup>20</sup> Interview, Rangoon, December 1999.

<sup>21</sup> Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'. See also *Landmine Monitor Report 2000* (forthcoming).

<sup>22</sup> Interview, Rangoon, December 1999. Also, correspondence with Yeshua Moser-Puangsuwan, July 2000.

<sup>23</sup> Interviews, Rangoon, November and December 1999.

<sup>24</sup> *Central Karen State: New Refugees Fleeing Forced Relocation, Rape and Use as Human Minesweepers*, Karen Human Rights Group Information Update: An Independent Report by the Karen Human Rights Group, KHRG 99-U3, 27 August 1999. See also *Landmine Monitor Report 1999*, p.446; and correspondence with Yeshua Moser-Puangsuwan, December 1999.

<sup>25</sup> Interviews, Bangkok, Chiang Mai and Rangoon, November and December 1999. Also, correspondence with Yeshua Moser-Puangsuwan, July 2000.

<sup>26</sup> Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'.

<sup>27</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>28</sup> 'Photo Set 2000-A: Landmines'. Also, interview, Chiang Mai, November 1999.

<sup>29</sup> Interviews, Chiang Mai, November 1999. See also *Central Karen State*. This military expansion programme is described in Andrew Selth, *Transforming the Tatmadaw: The Burmese Armed Forces Since 1988*,

---

Canberra Papers on Strategy and Defence No.113 (Strategic and Defence Studies Centre, Australian National University, Canberra, 1996).

<sup>30</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>31</sup> One Burmese government spokesman has claimed that some *Tatmadaw* mines are not dangerous, as they are only designed to make a noise, in order to alert guards of an impending attack. Alarm mines do exist but, given the bitter nature of warfare in Burma over the past 50 years, it is highly unlikely that they would have played a significant role. Interview, Rangoon, December 1999. See also Terry Gander, *Guerrilla Warfare Weapons* (Patrick Stevens, Wellingborough, 1989), p.43.

<sup>32</sup> See, for example, Jonathan Falla, *True Love and Bartholomew: Rebels on the Burmese Border* (Cambridge University Press, Cambridge, 1991), p.73; and *Hidden Killers* (1994).

<sup>33</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>34</sup> Falla, *True Love and Bartholomew*, p.110.

<sup>35</sup> 'Photo Set 2000-A: Landmines'. See also *Landmine Monitor Report 1999*, p.446.

<sup>36</sup> *Burma Human Rights Yearbook, 1998-99* (National Coalition Government of the Union of Burma, Washington, 1999), p.158. See also *Landmine Monitor Report 1999*, pp.446-7; and *Dispossessed: A report on forced relocation and extrajudicial killings in Shan State, Burma* (Shan Human Rights Foundation, Chiang Mai, 1998).

<sup>37</sup> Interviews, Chiang Mai and Rangoon, November and December 1999.

<sup>38</sup> Supradit Kanwanich, 'Caught in the crossfire', *Bangkok Post*, 30 August 1998. See also Supradit Kanwanich, 'One day on a road of landmines', *Bangkok Post*, 30 August 1998.

<sup>39</sup> Hugh Tinker, *The Union of Burma: A Study of the First Years of Independence* (Oxford University Press, London, 1957), p.56.

<sup>40</sup> 'Amnesty Exploited by Anti-Government Quarters', Myanmar Information Committee, Information Sheet No.A-0966(I), Rangoon, 30 June 1999. See also *Bangkok Post*, 25 June 1999; and 'Photo Set 2000-A: Landmines'.

<sup>41</sup> 'Burma asked to investigate attack on Thai police station', *The Nation*, 5 May 1999.

<sup>42</sup> 'Pro-Burma forces fire mortar rounds into refugee camp', AAP, 15 March 1998.

<sup>43</sup> *Hidden Killers* (1993), p.62.

<sup>44</sup> See, for example, *Landmine Monitor Report 1999*, pp.443-4.

<sup>45</sup> *Hidden Killers* (1994).

<sup>46</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>47</sup> 'Endorsement of the Committee Representing the People's Parliament of the Convention on the Prohibition of Anti-Personnel Mines and on their Destruction', Rangoon, 24 January 2000, issued as 'Burma's People's Parliament to Accede to Global Landmine Ban', Press Release by the Thai Campaign to Ban Landmines, 1 March 2000.

<sup>48</sup> 'Photo Set 2000-A: Landmines'.

<sup>49</sup> Interview, Rangoon, December 1999. Between 1985 and 1995 the International Committee of the Red Cross sponsored orthopedic workshops in the military hospitals at Mingaladon and Maymyo, and in two civilian hospitals, to help meet the demand for artificial limbs. The two centres at Mingaladon and Maymyo are now operated by the Burma Army.

<sup>50</sup> Non Violence International, *Burma and Anti-Personnel Landmines: A humanitarian crisis in the making*, at <<http://www.igc.org/nonviolence/burmamines/crisis.html>> (September 2000).

<sup>51</sup> Correspondence with Yeshua Moser-Puangsuwan, July 2000. One of the reasons why Manerplaw fell was because KNLA soldiers who defected to the government side showed the Burma Army how to get through the insurgent minefields surrounding the base.

<sup>52</sup> Karen Human Rights Group, 'Pa'an District', at <<http://metalab.inc.edu/freeburma/humanrights/khrg/archive/photorep.../paan.htm>>(September 2000).

<sup>53</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>54</sup> Interview, Rangoon, December 1999. See also *Hidden Killers* (1993), p.62. This problem is not confined to Burma, or even Third World countries. During the 1982 Falklands War, for example, Argentina laid around 30,000 mines on the Falkland Islands without marking the minefields or even recording the number of mines laid. Pamela Pohling-Brown, 'Contracting Issues, Mines Controversy Gathers Pace', *Jane's Defence Contracts*, 1 February 1997, p.5.

<sup>55</sup> *Uncertainty, Fear and Flight: The Current Human Rights Situation in Eastern Pa'an District*, An Independent Report by the Karen Human Rights Group, KHRG 98-08, 18 November 1998.

<sup>56</sup> Interview, Rangoon, December 1999.

<sup>57</sup> Personal observation, Rangoon, December 1999.

<sup>58</sup> Personal observation and interviews, Rangoon, November and December 1999. See also *Landmine Monitor Report 1999*, pp.443-54.

<sup>59</sup> The POMZ-2 weighs 2.3 kg, while the POMZ-2M (a later version) weighs 1.8 kg. From outward appearances, the MM-1 seems to be based on the POMZ-2.

<sup>60</sup> Personal observation, Rangoon, November 1999.

<sup>61</sup> During the Second World War, Germany led the field in the design of landmines and the development of doctrine for their use. See Croll, *The History of Landmines*, pp.37-52, 96-7.

<sup>62</sup> Interview, Rangoon, November 1999; and *Landmine Monitor Report 1999*, p.445.

<sup>63</sup> *Uncertainty, Fear and Flight*.

<sup>64</sup> Supradit Kanwanich, 'Caught in the crossfire', *Bangkok Post*, 30 August 1998. See also 'A Risky Business', *Bangkok Post*, 24 July 1999.

<sup>65</sup> Interview, Bangkok, November 1999. See also *Landmine Monitor Report 1999*, p.445.

<sup>66</sup> *Hidden Killers (1993)*, p.62.

<sup>67</sup> *Hidden Killers (1994)*. The Chinese version of the US M-18 is the Type 69.

<sup>68</sup> Personal observation, Rangoon, December 1999.

<sup>69</sup> Interview, Canberra, November 1999.

<sup>70</sup> See, for example, Andrew Selth, *Burma's Secret Military Partners*, Canberra Papers on Strategy and Defence No.136 (Strategic and Defence Studies Centre, Australian National University, Canberra, 2000).

<sup>71</sup> Interview, Bangkok, November 1999.

<sup>72</sup> Interviews, Bangkok and Rangoon, November 1999.

<sup>73</sup> Personal observation, Rangoon, December 1999. Also see Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'.

<sup>74</sup> Personal observation, Rangoon, November 1999.

<sup>75</sup> The TMN-46 has also been manufactured by Israel (designated the No.6 AT mine) and a number of former Eastern-bloc countries.

<sup>76</sup> *Uncertainty, Fear and Flight*; and correspondence with Yeshua Moser-Puangsuan, October 2000. See also Bruce Cockburn, 'Landmines and Burma', *Human Digest*, an excerpt from a Jesuit Refugee Service report, at <<http://fn2.freenet.edmonton.ab.ca/~puppydog/scrpbook.htm>> (September 2000).

<sup>77</sup> There are photographs of this mine on the Internet, in the KHRG's report on 'Pa'an District'.

<sup>78</sup> Correspondence with Yeshua Moser-Puangsuan, July 2000.

<sup>79</sup> Correspondence with Yeshua Moser-Puangsuan, July 2000.

<sup>80</sup> Interview, Rangoon, November 1999.

<sup>81</sup> Personal observation and interview, Rangoon, November 2000.

<sup>82</sup> Pasuk Phongpaichit *et al.*, *Guns, Girls, Gambling, Ganja*, pp.137 ff.

<sup>83</sup> *Landmine Monitor Report 1999*, p.449.

<sup>84</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>85</sup> See Jozef Goldblat, 'Land-mines and blinding laser weapons: the Inhumane Weapons Convention Review Conference' in Stockholm International Peace Research Institute, *Armaments, Disarmament and International Security* (Oxford University Press, Oxford, 1996), p.759.

<sup>86</sup> Selth, *Burma's Secret Military Partners*, chapter 2.

<sup>87</sup> Selth, 'Burma's Defence Expenditure and Arms Industries', pp.34 ff.

<sup>88</sup> Interview, and personal observation, Rangoon, December 1999.

<sup>89</sup> The distinguishing feature of this stake mine is that it has seven raised lateral rows of fragmentation on the body of the mine. The POMZ-2 only has six rows, and the POMZ-2M has five. The PMR-1 has nine rows of fragmentation.

<sup>90</sup> *Landmine Monitor Report 1999*, p.445.

<sup>91</sup> Based on an example observed in Rangoon, these mines are rectangular in shape (about 250 mm by 100 mm, and 35 mm wide). According to a local expert, they must be command detonated. Examples which have been seen by the author have been black or dark grey in colour. Interview, Rangoon, November 1999; and personal observation, Rangoon, November 1999.

<sup>92</sup> Interview, Rangoon, December 1999.

<sup>93</sup> Interviews, Rangoon, December 1999.

<sup>94</sup> The current plan can be traced to the sudden imposition of an arms embargo against the SLORC in 1988, leaving the *Tatmadaw* without critical supplies with which to defend itself. See Selth, 'Burma's Defence Expenditure and Arms Industries', pp.35-6.

<sup>95</sup> The second variant of this mine could be the MM-3. Correspondence with Yeshua Moser-Puangsuwan, July and October 2000.

<sup>96</sup> Ever since Burma began manufacturing its own munitions, it has tended to use designations based on set prefixes, (such as BA for 'Burma Army' and MA for 'Myanmar Army') and a number - sometimes related to the date of first manufacture. For example, the BA-52 sub-machine gun was first manufactured by the Burma Army in 1952. The designation BAAC-87 was given to the Burma Army Armoured Car developed in 1987. With some modifications, this style of naming locally-produced weapons and ammunition seems to have survived the advent of the SLORC in 1988. See also Supradit Kanwanich, 'Caught in the crossfire', *Bangkok Post*, 30 August 1998.

<sup>97</sup> Interviews, Rangoon, November and December 1999. See also *Landmine Monitor Report 1999*, p.445.

<sup>98</sup> Interviews, Chiang Mai and Rangoon, November and December 1999.

<sup>99</sup> See, for example, Falla, *True Love and Bartholomew*, pp.111-13; J.L. Anderson, *Guerrillas* (Harper Collins, London, 1994), pp.100-1; and H. Katoh, *Kawthoolei* (Dojidai-Sha, Tokyo, 1982), pp.94-6.

<sup>100</sup> Research Department Explosive (cyclonite or trimethyltrinitramin).

<sup>101</sup> See, for example, Falla, *True Love and Bartholomew*, p.113-15; and Anderson, *Guerrillas*, p.161. Also relevant is 'Thai Police Discover Weapons Cache Near Burmese Border', *The Nation*, 20 September 2000.

<sup>102</sup> *Landmine Monitor Report 1999*, p.448.

<sup>103</sup> These explosives were also described as 'gunpowder' and 'dynamite'. Maung Pho Shoke, *Why Did U Khun Sa's MTA Exchange Arms for Peace* (Meik Kaung Press, Rangoon, 1999), p.81.

<sup>104</sup> *ibid.*, p.81.

<sup>105</sup> *ibid.*, p.79.

<sup>106</sup> Gander, *Guerrilla Warfare Weapons*, p.42. Khun Sa also mass-produced hand grenades, which would have relied on similar technology to that required to manufacture simple stake fragmentation grenades. Maung Pho Shoke, *Why Did U Khun Sa ...*, p.81.

- <sup>107</sup> For the manufacture of gunpowder by one insurgent group, using traditional methods, see Falla, *True Love and Bartholomew*, p.113.
- <sup>108</sup> Interview, Chiang Mai, November 1999. Also, see Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'.
- <sup>109</sup> Moser-Puangsuwan and Selth, 'Myanmar's forgotten minefields'.
- <sup>110</sup> Interviews, Chiang Mai, November 1999.
- <sup>111</sup> *Landmine Monitor Report 1999*, p.449.
- <sup>112</sup> *Burma Human Rights Practices, 1993* (US Department of State, Washington, 31 January 1994).
- <sup>113</sup> 'Amnesty Exploited by Anti-Government Quarters', Myanmar Information Committee, Information Sheet No.A-0966(I), Rangoon, 30 June 1999; and 'KNU attributes recent mine attack to SPDC or DKBA troops', *Burmanet News*, 2 July 1999.
- <sup>114</sup> *Landmine Monitor Report 2000* (forthcoming).
- <sup>115</sup> *ibid.*
- <sup>116</sup> *ibid.* The nickname 'BE' harks back to Burma's colonial days when the British Army's Royal Engineers were often referred to as the 'RE'.
- <sup>117</sup> *Landmine Monitor Report 2000* (forthcoming).
- <sup>118</sup> Personal observation and interviews, Rangoon, November and December 1999.
- <sup>119</sup> *Hidden Killers (1993)*, p.62.
- <sup>120</sup> *Hidden Killers (1994)*.
- <sup>121</sup> *Landmine Monitor Report 2000* (forthcoming).
- <sup>122</sup> *Hidden Killers (1993)*, p.62; and interview, Rangoon, November 1999.
- <sup>123</sup> *Hidden Killers (1994)*.
- <sup>124</sup> Personal observation and interviews, Rangoon, November and December 1999. The NMD-9 is capable of detecting metallic and minimum-metal mines. There is a variant (called the GDS-17) used for the detection of metallic mines only. *Jane's Mines and Mine Clearance, 1997-98*, p.482.
- <sup>125</sup> Personal observation and interviews, Rangoon, November and December 1999.
- <sup>126</sup> Personal observation and interviews, Rangoon, November and December 1999.

<sup>127</sup> Personal observation and interviews, Rangoon, November and December 1999.

<sup>128</sup> Personal observation, Rangoon, November and December 1999.

<sup>129</sup> Croll, *The History of Landmines*, pp.136 ff.

<sup>130</sup> Interviews, Rangoon, November and December 1999.

<sup>131</sup> Croll, *The History of Landmines*, pp.139-40.

<sup>132</sup> *Landmine Monitor Report 1999*, p.452.

<sup>133</sup> For example, see the Karen Human Rights Group reports, *Central Karen State*, and *Uncertainty, Fear and Flight*. See also the *Burma Human Rights Yearbook, 1998-99*, p.99.

<sup>134</sup> *Forced Labour in Myanmar (Burma): Report of the Commission of Inquiry appointed under Article 26 of the Constitution of the International Labour Organization to examine the observance by Myanmar of the Forced Labour Convention, 1930 (No.29)*, Geneva, 2 July 1998, paras 135, 174, 319 and 375.

<sup>135</sup> *Hidden Killers (1993)*, p.62.

<sup>136</sup> *Forced Labour in Myanmar (Burma)*.

<sup>137</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>138</sup> *ibid.*

<sup>139</sup> Interviews, Chiang Mai, November 1999.

<sup>140</sup> *Burma and Anti-Personnel Landmines*.

<sup>141</sup> *Landmine Monitor Report 1999*, p.451.

<sup>142</sup> So too have Burmese army personnel. See, for example, 'Ministry to ask NSC to close border passes with Burma', *Bangkok Post*, 6 May 1999.

<sup>143</sup> 'Karen Buddhist soldiers killed by landmines', *Naeo Na* (in Thai), 19 February 1997.

<sup>144</sup> 'Thailand to ratify mine ban pact of 1997', *The Nation*, 25 October 1998; and Rita Patiyasevi, 'Thai military vows to destroy landmine stockpile', *The Nation*, 28 February 1999.

<sup>145</sup> 'Thai military vows to destroy landmine stockpile'. See also James East, 'Thais Train to Clear Silent Killers', *South China Morning Post*, 19 August 1999.

<sup>146</sup> 'Thai military vows to destroy landmine stockpile'.



<sup>147</sup> James East, 'Ignorance Cripples Landmine Removal', *South China Morning Post*, 19 January 2000.

<sup>148</sup> See, for example, *Burma: Rape, Forced Labor and Religious Persecution in Northern Arakan*, Asia Watch Report, New York, 7 May 1992.

<sup>149</sup> It has been claimed that some of these mines were laid by members of the 'Burmese border police'. The Myanmar Police Force currently includes eight combat battalions trained and equipped with military weapons, some of which could have laid mines in this area, but it is more likely that they were laid by the Burma Army. *Landmine Monitor Report 1999*, p.448.

<sup>150</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>151</sup> *Landmine Monitor Report 1999*, pp.447-8. See also *Landmine Monitor Report 2000* (forthcoming).

<sup>152</sup> 'Bangladesh, Burma agree on Joint Commission', *News From Bangladesh*, Dacca, 18 April 1998.

<sup>153</sup> 'Six More Countries Join Ban on Land Mines', *Baltimore Sun*, 16 September 2000.

<sup>154</sup> *Landmine Monitor Report 2000* (forthcoming).

<sup>155</sup> Cited in 'Burma's People's Parliament to Accede to Global Landmine Ban', Press Release by the Thai Campaign to Ban Landmines, Bangkok, 1 March 2000.

<sup>156</sup> Quoted in *Landmine Monitor Report 1999*, p.444.

<sup>157</sup> For details of the SPDC's policy position, see *Landmine Monitor Report 1999*, p.444. See also *Landmine Monitor Report 2000* (forthcoming).

<sup>158</sup> *Landmine Monitor Report 1999*, p.444.

<sup>159</sup> *Forced Labour in Myanmar (Burma)*.

<sup>160</sup> 'Burma slammed over forced labour', BBC News Online: World: Asia-Pacific, 17 June 1999.

<sup>161</sup> 'International Labour Conference adopts resolution targeting forced labour in Myanmar (Burma)', International Labour Organisation Press Release, Geneva, 14 June 2000.

<sup>162</sup> The convention's full title is the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which may be Deemed to be Excessively Injurious or to Have Indiscriminate Effects. Protocol II's full title is the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices (as amended on 3 May 1996).

<sup>163</sup> Christopher Smith, 'Anti-Personnel Mines: the Arguments Over Military Utility', *Brassey's Defence Yearbook 1996* (Brassey's, London, 1996), pp.273-85.

<sup>164</sup> Goldblat, 'Land-mines and blinding laser weapons', pp.753-61.

<sup>165</sup> *SIPRI Yearbook 1999: Armaments, Disarmament and International Security* (Stockholm International Peace Research Institute and Oxford University Press, Oxford, 1999), p.714.

<sup>166</sup> Cockburn, 'Landmines and Burma'.

<sup>167</sup> Interview, Rangoon, December 1999. See also 'Burma's People's Parliament to Accede to Global Landmine Ban'.

<sup>168</sup> 'Endorsement of the Committee Representing the People's Parliament of the Convention on the Prohibition of Anti-Personnel Mines and on their Destruction' in 'Burma's People's Parliament to Accede to Global Landmine Ban'. See also 'Opposition Condemns Myanmar Over Landmine Use', Agence France Presse, 1 March 2000.

<sup>169</sup> Thalif Deen, 'UN urges demining army as an economic priority', *Jane's Defence Weekly*, 17 December 1997, p.7.

<sup>170</sup> Goldblat, 'Land-mines and blinding laser weapons', pp.754-5.

<sup>171</sup> *Jane's Mines and Mine Clearance, 1997-98*, pp.7-23.

<sup>172</sup> Correspondence with Yeshua Moser-Puangsuwan, February 2000. See also the photographs reproduced by the Karen Human Rights Group in 'Photos from 1999: Set 99-A, Pa'an District', at <<http://metalab.unc.edu/freeburma/humanrights/khrg/archive/photorep.../paan.htm>> (September 2000).

<sup>173</sup> Interviews, Rangoon, November 1999; and correspondence with Yeshua Moser-Puangsuwan, February 2000. See also 'Photos from 1999: Set 99-A, Pa'an District', and 'Photo Set 2000-A: Landmines', for photographs of the MM-2.

<sup>174</sup> *Jane's Mines and Mine Clearance, 1997-98*, p.215. For details of the Type 58 AP mine, see p.63.

<sup>175</sup> *ibid.*, p.217. For details of the Type 59 mine, see p.67.

<sup>176</sup> Personal observation, and interviews, Rangoon, November and December 1999.

<sup>177</sup> Interview, Rangoon, December 1999.

<sup>178</sup> Interview, Rangoon, November 1999.

<sup>179</sup> *Jane's Mines and Mine Clearance, 1997-98*, p.325. A later version, the PMR-2A, is still produced. Although externally similar, the latter has a larger explosive charge and thinner side walls than the PMR-1. See *Jane's Mines and Mine Clearance, 1997-98*, p.329.

<sup>180</sup> *Jane's Mines and Mine Clearance, 1997-98*, p.285.

<sup>181</sup> For photographs of Burmese directional landmines, see 'Photo Set 2000A: Landmines'.

<sup>182</sup> *Jane's Mines and Mine Clearance, 1997-98*, pp.69, 285.

<sup>183</sup> *ibid.*, p.281.

<sup>184</sup> *ibid.*, p.71.

<sup>185</sup> *ibid.*, p.209.

<sup>186</sup> *ibid.*, p.73.

<sup>187</sup> *ibid.*, p.277.

<sup>188</sup> *ibid.*, p.295.

<sup>189</sup> 'Photos from 1999: Set 99-A, Pa'an District'.

<sup>190</sup> Personal observation, Rangoon, November 2000; and correspondence with Yeshua Moser-Puangsuwan, May 2000. See also the photographs in 'Photos from 1999: Set 99-A, Pa'an District'.

<sup>191</sup> *Jane's Mines and Mine Clearance, 1997-98*, p.207.

<sup>192</sup> *ibid.*, p.259.

<sup>193</sup> *ibid.*, p.145.

<sup>194</sup> Personal observation, and interviews, Rangoon, November and December 1999.

<sup>195</sup> *Jane's Mines and Mine Clearance, 1997-98*, p.221.

<sup>196</sup> *ibid.*, p.147.

**RECENT PUBLICATIONS OF THE  
STRATEGIC AND DEFENCE STUDIES CENTRE**

**NOTE: PRICES QUOTED IN THIS LIST DO NOT INCLUDE GST. CUSTOMERS WITHIN AUSTRALIA ARE REQUESTED TO CONTACT SDSC FOR GST-INCLUSIVE QUOTATIONS BEFORE SENDING THEIR ORDERS**

**CANBERRA PAPERS ON STRATEGY AND DEFENCE**

YEAR	NO.	TITLE	SA
		<b>(including cost of packaging &amp; postage)</b>	
<u>1991</u>	CP72	<i>South Pacific Security: Issues and Perspectives</i> by Stephen Henningham and Desmond Ball (eds) (156+xxii pp)	20.00
	CP73	<i>The Northern Territory in the Defence of Australia: Strategic and Operational Considerations</i> by J.O. Langtry and Desmond Ball (eds) (340+ xxii pp)	24.50
	CP74	<i>The Architect of Victory: Air Campaigns for Australia</i> by Gary Waters (224+xxii pp)	23.00
	CP75	<i>Modern Taiwan in the 1990s</i> by Gary Klintworth (ed.) (228+xxviii pp)	23.00
	CP76	<i>New Technology: Implications for Regional and Australian Security</i> by Desmond Ball and Helen Wilson (eds) (248+xxxvi pp)	23.00
	CP77	<i>Reshaping the Australian Army: Challenges for the 1990s</i> by David Horner (ed.) (282+xxii pp)	24.00
	CP78	<i>The Intelligence War in the Gulf</i> by Desmond Ball (106+xiv pp)	17.50
	CP79	<i>Provocative Plans: A Critique of US Strategy for Maritime Conflict in the North Pacific</i> by Desmond Ball (138+xx pp)	20.00
	CP80	<i>Soviet SIGINT: Hawaii Operation</i> by Desmond Ball (94+xvi pp)	17.50
	CP81	<i>Chasing Gravity's Rainbow: Kwajalein and US Ballistic Missile Testing</i> by Owen Wilkes, Megan van Frank and Peter Hayes (210+xiv pp)	22.50
	CP82	<i>Australia's Threat Perceptions: A Search for Security</i> by Alan Dupont (118+xxii pp)	17.00
	CP83	<i>Building Blocks for Regional Security: An Australian Perspective on Confidence and Security Building Measures (CSBMs) in the Asia/Pacific Region</i> by Desmond Ball (110+xxviii pp)	17.00
	CP84	<i>Australia's Security Interests in Northeast Asia</i> by Alan Dupont (132+xxii pp)	18.50
	CP85	<i>Finance and Financial Policy in Defence Contingencies</i> by Paul Lee (118+x pp)	17.00
<u>1992</u>	CP86	<i>Mine Warfare in Australia's First Line of Defence</i> by Alan Hinge (254+xvi pp)	23.00
	CP87	<i>Hong Kong's Future as a Regional Transport Hub</i> by Peter J. Rimmer (110+xvi pp)	20.00
	CP88	<i>The Conceptual Basis of Australia's Defence Planning and Force Structure Development</i> by Paul Dibb (151+xxviii pp)	17.50
	CP89	<i>Strategic Studies in a Changing World: Global, Regional and Australian Perspectives</i> by Desmond Ball and David Horner (eds) (465+xxxii pp)	28.00
	CP90	<i>The Gulf War: Australia's Role and Asian-Pacific Responses</i> by J. Mohan Malik (134+xi pp)	21.00
	CP91	<i>Defence Aspects of Australia's Space Activities</i> by Desmond Ball (128+xxviii pp)	20.00
	CP92	<i>The Five Power Defence Arrangements and Military Cooperation among the ASEAN States: Incompatible Models for Security in Southeast Asia?</i> by Philip Methven (208+xiv pp)	23.00
	CP93	<i>Infrastructure and Security: Problems of Development in the West Sepik Province of Papua New Guinea</i> by T.M. Boyce (230+xiv pp)	23.00
	CP94	<i>Australia and Space</i> by Desmond Ball and Helen Wilson (eds) (389+xxviii pp)	26.00
	CP95	<i>LANDFORCE 2010: Some Implications of Technology for ADF Future Land Force Doctrine, Leadership and Structures</i> by David W. Beveridge (97+xiv pp)	15.50
	CP96	<i>The Origins of Australian Diplomatic Intelligence in Asia, 1933-1941</i> by Wayne Gobert (106+xiv pp)	17.50
	CP97	<i>Japan as Peacekeeper: Samurai State, or New Civilian Power?</i> by Peter Polomka (106+x pp)	16.00

	CP98	<i>The Post-Soviet World: Geopolitics and Crises</i> by Coral Bell (92+xii pp)	15.00
<u>1993</u>	CP99	<i>Indonesian Defence Policy and the Indonesian Armed Forces</i> by Bob Lowry (144+xiv pp)	20.00
	CP100	<i>Regional Security in the South Pacific: The Quarter-century 1970-95</i> by Ken Ross (206+x pp)	23.00
	CP101	<i>The Changing Role of the Military in Papua New Guinea</i> by R.J. May (97+xiv pp)	15.00
	CP102	<i>Strategic Change and Naval Roles: Issues for a Medium Naval Power</i> by Sam Bateman and Dick Sherwood (eds) (216+x pp)	23.00
	CP103	<i>ASEAN Defence Reorientation 1975-1992: The Dynamics of Modernisation and Structural Change</i> by J.N. Mak (322+xvi pp)	24.00
<u>1994</u>	CP104	<i>The United Nations and Crisis Management: Six Studies</i> by Coral Bell (ed.) (144+x pp)	17.50
	CP105	<i>Operational Technological Developments in Maritime Warfare: Implications for the Western Pacific</i> by Dick Sherwood (ed.) (159+ xviii pp)	20.00
	CP106	<i>More Than Little Heroes: Australian Army Air Liaison Officers in the Second World War</i> by Nicola Baker (199+xx pp)	23.00
	CP107	<i>Vanuatu's 1980 Santo Rebellion: International Responses to a Microstate Security Crisis</i> by Matthew Gubb (78+xiv pp)	14.00
	CP108	<i>The Development of Australian Army Doctrine 1945-1964</i> by M.C.J. Welburn (93+xii pp)	15.00
<u>1995</u>	CP109	<i>The Navy and National Security: The Peacetime Dimension</i> by Dick Sherwood (98+x pp)	16.00
	CP110	<i>Signals Intelligence (SIGINT) in South Korea</i> by Desmond Ball (83+xii pp)	15.00
	CP111	<i>India Looks East: An Emerging Power and its Asia-Pacific Neighbours</i> by Sandy Gordon and Stephen Henningham (eds) (280+ xx pp)	24.00
	CP112	<i>Nation, Region and Context: Studies in Peace and War in Honour of Professor T.B. Millar</i> by Coral Bell (ed.) (259+ xiv pp)	24.00
<u>1996</u>	CP113	<i>Transforming the Tatmadaw: The Burmese Armed Forces since 1988</i> by Andrew Selth (207+ xvi pp)	23.00
	CP114	<i>Calming the Waters: Initiatives for Asia Pacific Maritime Cooperation</i> by Sam Bateman and Stephen Bates (eds) (207+ xxii pp)	23.00
	CP115	<i>Strategic Guidelines for Enabling Research and Development to Support Australian Defence</i> by Ken Anderson and Paul Dibb (105+ xviii pp)	17.00
	CP116	<i>Security and Security Building in the Indian Ocean Region</i> by Sandy Gordon (243+ xx pp)	24.00
	CP117	<i>Signals Intelligence (SIGINT) in South Asia: India, Pakistan, Sri Lanka (Ceylon)</i> by Desmond Ball (116+ xiv pp)	17.50
	CP118	<i>The Seas Unite: Maritime Cooperation in the Asia Pacific Region</i> by Sam Bateman and Stephen Bates (eds) (303+ xxx pp)	25.00
<u>1997</u>	CP119	<i>In Search of a Maritime Strategy: The Maritime Element in Australian Defence Planning since 1901</i> by David Stevens (ed.) (252+ xx pp)	24.00
	CP120	<i>Australian Defence Planning: Five Views from Policy Makers</i> by Helen Hookey and Denny Roy (eds) (71+ xiv pp)	15.00
	CP121	<i>A Brief Madness: Australia and the Resumption of French Nuclear Testing</i> by Kim Richard Nossal and Carolyn Vivian (69+ x pp)	15.00
	CP122	<i>Missile Diplomacy and Taiwan's Future: Innovations in Politics and Military Power</i> by Greg Austin (ed.) (292+ xxiii pp)	25.00
	CP123	<i>Grey-Area Phenomena in Southeast Asia: Piracy, Drug Trafficking and Political Terrorism</i> by Peter Chalk (117+ xiv pp)	17.50
<u>1998</u>	CP124	<i>Regional Maritime Management and Security</i> by Sam Bateman and Stephen Bates (eds) (209+ xxiv pp)	24.00
	CP125	<i>The Environment and Security: What Are the Linkages?</i> by Alan Dupont (ed.) (99+ xii pp)	17.00
	CP126	<i>'Educating an Army': Australian Army Doctrinal Development and the Operational Experience in South Vietnam, 1965-72</i> by R.N. Bushby (111+ xiv pp)	17.50

	CP127 <i>South Africa and Security Building in the Indian Ocean Rim</i> by Greg Mills (139+xiv pp)	20.00
	CP128 <i>The Shape of Things to Come: The US-Japan Security Relationship in the New Era</i> by Maree Reid (97+x pp)	17.50
	CP129 <i>Shipping and Regional Security</i> by Sam Bateman and Stephen Bates (eds) (159+xxiv pp)	20.00
	CP130 <i>Bougainville 1988-98: Five Searches for Security in the North Solomons Province of Papua New Guinea</i> by Karl Claxton (199+xx pp)	23.00
<u>1999</u>	CP131 <i>The Next Stage: Preventive Diplomacy and Security Cooperation in the Asia-Pacific Region</i> by Desmond Ball and Amitav Acharya (eds) (335+xx pp)	25.00
	CP132 <i>Maritime Cooperation in the Asia-Pacific Region: Current Situation and Prospects</i> by Sam Bateman (ed.) (193+xxii pp)	23.00
	CP133 <i>Maintaining the Strategic Edge: The Defence of Australia in 2015</i> by Desmond Ball (ed.) (445+xxvi pp)	30.00
<u>2000</u>	CP134 <i>An Independent Command: Command and Control of the 1<sup>st</sup> Australian Task Force in Vietnam</i> by R.W. Cable	17.50
	CP135 <i>Armed Rebellion in the ASEAN States: Persistence and Implications</i> by Andrew Tan	23.00
	CP136 <i>Burma's Secret Military Partners</i> by Andrew Selth	18.50

#### **SDSC WORKING PAPERS**

**All at the one price of \$A6.00 (including cost of packaging & postage)**

<u>1991</u>	WP225 <i>India's Strategic Posture: 'Look East' or 'Look West'?</i> by Sandy Gordon	
	WP226 <i>Index to Parliamentary Questions on Defence for the Period 1989 to 1990</i> by Gary Brown	
	WP227 <i>Australia and Papua New Guinea: Foreign and Defence Relations Since 1975</i> by Katherine Bullock	
	WP228 <i>The Wrigley Report: An Exercise in Mobilisation Planning</i> by J.O. Langtry	
	WP229 <i>Air Power, the Defence of Australia and Regional Security</i> by Desmond Ball	
	WP230 <i>Current Strategic Developments and Implications for the Aerospace Industry</i> by Desmond Ball	
	WP231 <i>Arms Control and Great Power Interests in the Korean Peninsula</i> by Gary Klintworth	
	WP232 <i>Power, the Gun and Foreign Policy in China since the Tiananmen Incident</i> by Ian Wilson	
	WP233 <i>The Gulf Crisis: Testing a New World Order?</i> by Amin Saikal and Ralph King	
	WP234 <i>An Australian Perspective on Maritime CSBMs in the Asia-Pacific Region</i> by Desmond Ball and Commodore Sam Bateman RAN	
	WP235 <i>Insurgency and the Transnational Flow of Information: A Case Study</i> by Andrew Selth	
	WP236 <i>India's Security Policy: Desire and Necessity in a Changing World</i> by Sandy Gordon	
	WP237 <i>The Introduction of the Civilian National Service Scheme for Youth in Papua New Guinea</i> by Lieutenant Colonel T.M. Boyce	
	WP238 <i>Command, Control, Communications and Intelligence in the Gulf War</i> by Shaun Gregory	
	WP239 <i>Reflections on Cambodian Political History: Backgrounder to Recent Developments</i> by Stephen R. Heder	
	WP240 <i>The Asia-Pacific: More Security, Less Uncertainty, New Opportunities</i> by Gary Klintworth	
	WP241 <i>A History of Australia's Space Involvement</i> by Matthew L. James	
	WP242 <i>Antarctic Resources: A Dichotomy of Interest</i> by John Wells	
	WP243 <i>The Right to Intervene? in the Domestic Affairs of States</i> by Gary Klintworth	
<u>1992</u>	WP244 <i>An Isolated Debating Society: Australia in Southeast Asia and the South Pacific</i> by Greg Johannes	
	WP245 <i>Recent Developments in China's Domestic and Foreign Affairs: The Political and Strategic Implications for Northeast Asia</i> by Di Hua	
	WP246 <i>The Evolution of US Maritime Power in the Pacific</i> by E.A. Olsen	
	WP247 <i>Index to Parliamentary Questions on Defence, 1991</i> by Gary Brown	

- WP248 *Call Out the Troops: An Examination of the Legal Basis for Australian Defence Force Involvement in 'Non-Defence' Matters* by Elizabeth Ward
- WP249 *The Australian Defence Force and the Total Force Policy* by Charles E. Heller
- WP250 *Mobilisation: The Gulf War in Retrospect* by James Wood
- WP251 *Mobilisation: The Benefits of Experience* by James Wood
- WP252 *Strategic Studies and Extended Deterrence in Europe: A Retrospective* by Andrew Butfofy
- WP253 *Geographic Information and Remote Sensing Technologies in the Defence of Australia* by Ken Granger
- WP254 *The Military Dimension of Common Security* by Andrew Butfofy
- WP255 *Taiwan's New Role in the Asia-Pacific Region* by Gary Klintworth
- WP256 *Focusing the CSBM Agenda in the Asia/Pacific Region: Some Aspects of Defence Confidence Building* by Paul Dibb
- WP257 *Defence and Industry: A Strategic Perspective* by Stewart Woodman
- WP258 *Russia and the Asia-Pacific Region* by Leszek Buszynski
- WP259 *National Security and Defence Policy Formation and Decision-Making in India* by Bruce Vaughn
- WP260 *A Question of Priorities: Australian and New Zealand Security Planning in the 1990s* by Stewart Woodman
- WP261 *Papua New Guinea-Australia Defence and Security Relations* by Peter I. Peipul
- WP262 *The Regional Security Outlook: An Australian Viewpoint* by Paul Dibb
- WP263 *Pakistan's Security Concerns: A Chinese Perspective* by Liu Jinkun
- WP264 *The Military Build-up in the Asia-Pacific Region: Scope, Causes and Implications for Security* by Andrew Mack and Desmond Ball
- WP265 *Principles of Australian Maritime Operations* by W.S.G. Bateman and R.J. Sherwood
- WP266 *Sino-Russian Detente and the Regional Implications* by Gary Klintworth
- WP267 *Australia and Asia-Pacific Regional Security* by Peter Jennings
- 1993 WP268 *Cambodia's Past, Present and Future* by Gary Klintworth
- WP269 *Australia's Aerial Surveillance Programme in the South Pacific: Review and New Options* by Wing Commander R.W. Grey
- WP270 *Strategic Culture in the Asia-Pacific Region (With Some Implications for Regional Security Cooperation)* by Desmond Ball
- WP271 *Australian Security Planning at the Crossroads: The Challenge of the Nineties* by Stewart Woodman
- WP272 *Index to Parliamentary Questions on Defence, 1992* by Gary Brown
- WP273 *Trends in Military Acquisitions in the Asia/Pacific Region: Implications for Security and Prospects for Constraints and Controls* by Desmond Ball
- WP274 *A Proposal for Cooperation in Maritime Security in Southeast Asia* by Wing Commander R.W. Grey
- WP275 *The Preparation and Management of Australian Contingents in UN Peacekeeping Operations* by Captain Russ Swinnerton RAN
- WP276 *The Future of Australia's Defence Relationship with the United States* by Paul Dibb
- WP277 *Russia's Military and the Northern Territories Issue* by Geoffrey Jukes
- WP278 *A Regional Regime for Maritime Surveillance, Safety and Information Exchanges* by Captain Russ Swinnerton RAN and Desmond Ball
- WP279 *The Political Role of the Singapore Armed Forces' Officer Corps: Towards a Military-Administrative State?* by Tim Huxley
- 1994 WP280 *The East Coast Armaments Complex (ECAC) Location Project: Strategic and Defence Aspects* by Desmond Ball
- WP281 *Rules of Engagement in Maritime Operations* by Captain Russ Swinnerton RAN
- WP282 *The Political and Strategic Outlook, 1994-2003: Global, Regional and Australian Perspectives* by Paul Dibb
- WP283 *Index to Parliamentary Questions on Defence, 1993* by Gary Brown
- WP284 *New Dimensions to the Japan-Australia Relationship: From Economic Preference to Political Cooperation* by Nobuyuki Takaki
- 1995 WP285 *Winners and Losers: South Asia After the Cold War* by Sandy Gordon

- WP286 *Australia and New Zealand: Towards a More Effective Defence Relationship* by Jim Rolfe
- WP287 *China's Policy Towards the Spratly Islands in the 1990s* by Sheng Lijun
- WP288 *How to Begin Implementing Specific Trust-Building Measures in the Asia-Pacific Region* by Paul Dibb
- WP289 *Burma's Arms Procurement Programme* by Andrew Selth
- WP290 *Developments in Signals Intelligence and Electronic Warfare in Southeast Asia* by Desmond Ball
- WP291 *India's Naval Strategy and the Role of the Andaman and Nicobar Islands* by D.N. Christie
- 1996**
- WP292 *Japan and Australia: A New Security Partnership?* by Naoko Sajima
- WP293 *Chinese Strategy and the Spratly Islands Dispute* by Brigadier Chris Roberts
- WP294 *Transnational Crime: The New Security Paradigm* by John McFarlane and Karen McLennan
- WP295 *Signals Intelligence (SIGINT) in North Korea* by Desmond Ball
- WP296 *The Emerging Geopolitics of the Asia-Pacific Region* by Paul Dibb
- WP297 *Maritime Strategy into the Twenty-First Century: Issues for Regional Navies* by Jack McCaffrie
- WP298 *The Cold War in Retrospect: Diplomacy, Strategy and Regional Impact* by Coral Bell
- WP299 *Australia-Indonesia Security Cooperation: For Better or Worse?* by Bob Lowry
- WP300 *Reflections on American Foreign Policy Strategy* by John Chipman
- WP301 *New Requirements for Multilateral Conflict Management by UN and Other Forces: Nordic Responses* by Jaana Karhilo
- WP302 *Developing Army Doctrine in the Post-Cold War Era* by Bill Houston
- WP303 *The Joint Patrol Vessel (JPV): A Regional Concept for Regional Cooperation* by Desmond Ball
- WP304 *Australian-American Relations after the Collapse of Communism* by Harry G. Gelber
- WP305 *Policy Coordination for Asia-Pacific Security and Stability* by Yukio Satoh
- 1997**
- WP306 *Force Modernisation in Asia: Towards 2000 and Beyond* by Paul Dibb
- WP307 *PMC, ARF and CSCAP: Foundations for a Security Architecture in the Asia-Pacific?* by Jörn Dösch
- WP308 *Burma's Intelligence Apparatus* by Andrew Selth
- WP309 *Burma's Defence Expenditure and Arms Industries* by Andrew Selth
- WP310 *Australia's Vulnerability to Information Attack: Towards a National Information Policy* by Adam Cobb
- WP311 *Australia, the US Alliance and Multilateralism in Southeast Asia* by Desmond Ball
- WP312 *From Distant Countries to Partners: the Japan-Australia Relationship* by Yukio Satoh
- WP313 *The Burma Navy* by Andrew Selth
- WP314 *Problems and Issues in Malaysia-Singapore Relations* by Andrew Tan
- WP315 *The Burma Air Force* by Andrew Selth
- WP316 *Australia's National Security into the Twenty-First Century* by Brigadier Mike Smith
- WP317 *Alliances, Alignments and the Global Order: The Outlook for the Asia-Pacific Region in the Next Quarter-Century* by Paul Dibb
- 1998**
- WP318 *The South African National Defence Force: Between Downsizing and New Capabilities?* by Greg Mills
- WP319 *The Evolution of China's Perception of Taiwan* by Sheng Lijun
- WP320 *UN Peacekeeping, UNIFIL and the Fijian Experience* by Jim Sanday
- WP321 *The Future of the ASEAN Regional Forum: An Australian View* by Alan Dupont
- WP322 *Singapore's Defence Policy in the New Millennium* by Andrew Tan
- WP323 *Responses to NATO's Eastward Expansion by the Russian Federation* by Alexei Mouraviev
- WP324 *The Remaking of Asia's Geopolitics* by Paul Dibb
- WP325 *The Nuclear Crisis in Asia: The Indian and Pakistani Nuclear Programmes* by Desmond Ball and Mohan Malik
- WP326 *Researching Security in East Asia: From 'Strategic Culture' to 'Security Culture'* by Pauline Kerr



- WP327 *Building the Tatmadaw: The Organisational Development of the Armed Forces in Myanmar, 1948-98* by Maung Aung Myoe
- WP238 *Drugs, Transnational Crime and Security in East Asia* by Alan Dupont
- WP329 *The Relevance of the Knowledge Edge* by Paul Dibb
- 1999 WP330 *The US-Australian Alliance: History and Prospects* by Desmond Ball
- WP331 *Implications of the East Asian Economic Recession for Regional Security Cooperation* by Desmond Ball
- WP332 *Strategic Information Warfare: A Concept* by Daniel T. Kuehl
- WP333 *Security Developments and Prospects for Cooperation in the Asia-Pacific Region, with Particular Reference to the Mekong River Basin* by Desmond Ball
- WP334 *Burma and Weapons of Mass Destruction* by Andrew Selth
- WP335 *Transnational Crime and Illegal Immigration in the Asia-Pacific Region: Background, Prospects and Countermeasures* by John McFarlane
- WP336 *Burma and Drugs: The Regime's Complicity in the Global Drug Trade* by Desmond Ball
- WP337 *Defence Strategy in the Contemporary Era* by Paul Dibb
- WP338 *The Burmese Armed Forces Next Century: Continuity or Change?* by Andrew Selth
- WP339 *Military Doctrine and Strategy in Myanmar: A Historical Perspective* by Maung Aung Myoe
- WP340 *The Evolving Security Architecture in the Asia-Pacific Region* by Desmond Ball
- WP341 *The Asian Financial Crisis: Corruption, Cronyism and Organised Crime* by John McFarlane
- WP342 *The Tatmadaw in Myanmar since 1988: An Interim Assessment* by Maung Aung Myoe
- WP343 *Cambodia and Southeast Asia* by Tony Kevin
- 2000 WP344 *The Principle of Non-Intervention and ASEAN: Evolution and Emerging Challenges* by Herman Kraft
- WP345 *Will America's Alliances in the Asia-Pacific Region Endure?* by Paul Dibb
- WP346 *Officer Education and Leadership Training in the Tatmadaw: A Survey* by Maung Aung Myoe
- WP347 *The Prospects for Southeast Asia's Security* by Paul Dibb
- WP348 *The Army's Capacity to Defend Australia Offshore: The Need for a Joint Approach* by John Caligari
- WP349 *Interpreting China-Indonesia Relations: 'Good-Neighbourliness', 'Mutual Trust' and 'All-round Cooperation'* by He Kai
- WP350 *Strategic Trends in the Asia-Pacific Region* by Paul Dibb
- WP351 *Burma's Order of Battle: An Interim Assessment* by Andrew Selth
- WP352 *Landmines in Burma: The Military Dimension* by Andrew Selth

#### MISCELLANEOUS PUBLICATIONS

	SA
	(including cost of packaging & postage)
<i>Australian Paper on Practical Proposals for Security Cooperation in the Asia Pacific Region</i> by Gareth Evans and Paul Dibb (24+ iv pp) 1994	11.50
<i>Armies and Nation-Building: Past Experience - Future Prospects</i> by David Horner (ed.) (240+ xvi pp) 1995	28.00
<i>Planning a Defence Force Without a Threat: A Model for Middle Powers</i> by Paul Dibb (27+ iv pp) 1996	12.50
<i>Restructuring the Papua New Guinea Defence Force: Strategic Analysis and Force Structure Principles for a Small State</i> by Paul Dibb and Rhondda Nicholas (162 + xii pp) 1996	34.50

#### **ORDERING INFORMATION**

- We will accept either one-off or standing orders.
- Cost of packaging and postage (surface mail, Australia or remail service, overseas) is included in all book prices. 15% discount (off the GST-inclusive price) is allowed for books collected personally at the Strategic and Defence Studies Centre.
- Method of payment within Australia: Cheque or money order, payable to Australian National University per SDSC, or Bankcard/Mastercard/Visa/American Express. GST is payable on books supplied within Australia. Please contact SDSC for GST-inclusive quotations before sending your order.
- Method of payment for overseas customers: Bank draft in Australian dollars, payable to Australian National University per SDSC or Bankcard/Mastercard/Visa/American Express. If payment is made in foreign currency, please add US\$10.00 equivalent to cover bank charges. The minimum foreign currency payment accepted is US\$15.00.
- Please include payment or credit card details with your order and forward it to:  
Publications Sales  
Strategic and Defence Studies Centre  
Building 6, Fellows Road  
Australian National University  
Canberra ACT 0200 Australia  
Fax: 61 (0)2 6248 0816, e-mail:sdsc@anu.edu.au.

*Abstracts of recent SDSC publications and a list of publications in print are available through the centre's home page: <<http://sdsc.anu.edu.au>>. A full list of publications will be sent out on request.*

Generated on 2020-12-07 22:49 GMT / https://hdl.handle.net/2027/uc1.31822029516960  
Creative Commons Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access\_use#cc-by-nc-nd-4.0

**Strategic and Defence Studies Centre  
Australian National University**

**MISSION STATEMENT**

Strategic studies is the primary analytical discipline for examining the defence policies of, and security relationships between, states. It embraces not only the control and application of military force, but the full range of factors determining the security of states. Strategic studies is interdisciplinary, and includes military, political, economic, environmental, scientific and technological aspects.

The mission of the Strategic and Defence Studies Centre (SDSC) is:

- to be the leading Australian research centre on strategic and defence studies;
- to develop postgraduate research and teaching on Asia-Pacific strategic affairs, which will support the priorities of the Research School of Pacific and Asian studies;
- to achieve quality in its scholarly publication programme, which will enhance the Centre's international reputation;
- to provide advice to Government, the Parliament and the private sector that will contribute to the University's national function;
- to promote awareness of, and informed public debate on, strategic and defence issues.

Generated on 2020-12-07 22:49 GMT / <https://hdl.handle.net/2027/uc1.31822029516960>  
Creative Commons Attribution-NonCommercial-NoDerivatives / [http://www.hathitrust.org/access\\_use#cc-by-nc-nd-4.0](http://www.hathitrust.org/access_use#cc-by-nc-nd-4.0)

