



The Landmine Action *Smart* Book



f o r e w o r d

Understanding the phenomenon of landmine remediation can be a daunting task. Even the terms most often used to describe it, “demining” and “mine action,” are commonly misconstrued...those terms encompass numerous disparate tasks, applicable to vastly different affected areas and pursued by many and diverse organizations.

Yet, we cannot ignore the problem simply because it is complex. The problems associated with the latent landmine threat have a pervasive and devastating effect on various aspects of life and culture in countries whose stability—or lack of it—could have far-reaching global effects. This booklet summarizes and focuses on the key aspects of each component of a mine action campaign, so that the scope and nature of humanitarian demining (or mine action) is clear and logical.

We have asked prominent mine action subject matter experts to contribute to this publication. Our hope is that an understanding of the actions and integration of these activities will provide a special appreciation of the integrated nature as well as the sheer importance of mine action, while dissipating much of the fog that surrounds it. It is our fervent wish that after reading the book and becoming “smart,” you will be in the best position to support and enhance this worthy international effort.

The Landmine Action Smart Book

The Landmine Action Smart Book was compiled and edited by the Mine Action Information Center (MAIC) at James Madison University. The MAIC wishes to express sincerest gratitude to all those who contributed time, effort, and subject matter expertise to this first volume. Additionally, we would like to recognize the entire staff of the Office of Mine Action Initiatives and Partnerships (MAIP) at the US Department of State for their sponsorship of this project.

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Historical Development and Use of Landmines

"The landmine is a perfectly designed blind sentry who never sleeps, is perpetually on duty, does not require food or water and never complains to management. Landmines are ready to strike whenever the opportunity rises, day or night, in all weather conditions, causing severe dismemberment or death."

Dave McCracken

Contributor:

Dave McCracken

Dave McCracken has 20 years of professional experience as a Field Engineer specializing in landmine warfare and demolitions. In 2001, he was awarded the Meritorious Service Medal by the Governor General of Canada for contributions to the international effort of humanitarian mine action. He is currently the Mine Action Technical Advisor for the Thailand Mine Action Center (TMAC).

From man's earliest recorded days he has found ingenious ways to entrap animals for his survival. These same skills became useful in conflict for snaring or entrapping his enemies with clever, unseen or camouflaged devices.

The discovery of gunpowder allowed new avenues for inventiveness, harnessing explosive force into a wide array of weaponry. Devices such as the "Fougasse" were made to strengthen fortifications by exploding and spraying lethal fragments towards the unwary, making approaches to defensive positions very dangerous. As recently as the Vietnam War the

"Fougasse" was used to protect fire support bases.

Explosive mines activated by pressure, designed by Brigadier General Gabriel J. Bains of the

Confederate Army, made their first recorded operational appearance in the American Civil War. These devices gained notoriety by causing considerable panic and fear among Union Troops. The use of these explosives began on a limited basis but not without controversy. General William Sherman of the Union Army stated that landmines "were not war, but murder." Surprisingly, the design of these first explosive mines survived the elements and several were discovered near Mobile, Alabama, in 1960.

The stalemate and carnage of World War I trench warfare created a need for armored vehicles (tanks) to pass over trench systems. The first use of tanks shocked unprotected infantry who responded by devising anti-tank devices in defense. The first anti-tank mines were improvised munitions (artillery shells) manufactured for the express purpose of disabling or destroying tanks. Eventually, anti-tank mines were designed specifically to meet the threat of tanks.

World War II introduced Blitzkrieg warfare with the massive use of tanks and other armored vehicles. To immobilize or restrict the movement of armored forces, increased use of anti-tank mines became common. The Russian Army

claimed to have placed half a million mines during the Battle of Kursk alone. Every Soviet soldier advancing to the front lines was required to carry at least one landmine.

The German army sowed "Devils Gardens," a cocktail of mines and booby-traps, during the north Africa campaign to halt the advances of Allied tank forces. Coastal areas of northwest Europe were heavily mined, creating a difficult obstacle for Allied forces on the Normandy beaches during the D-Day landings.

The massive use of tanks and anti-tank mines became a prime method of warfare. To protect against the removal of anti-tank mines, development of anti-personnel mines became necessary. Anti-personnel mines caused heavy casualties and fear among infantry and became commonplace on the battlefield.

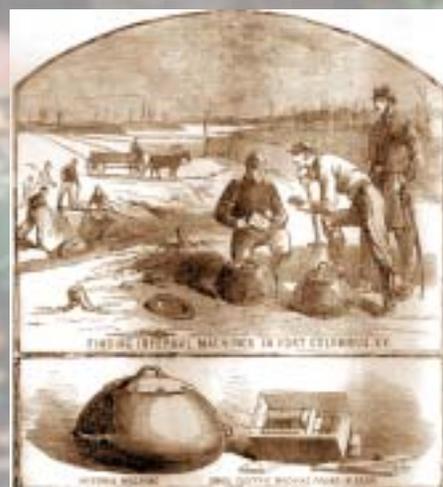
To complicate the removal of both anti-tank and anti-personnel mines, special anti-handling devices were developed to prevent lifting or removing of landmines. In addition, booby-traps, both improvised and manufactured, were designed to catch and kill the unwary, thereby sowing the seeds of fear and terror on the battlefield.

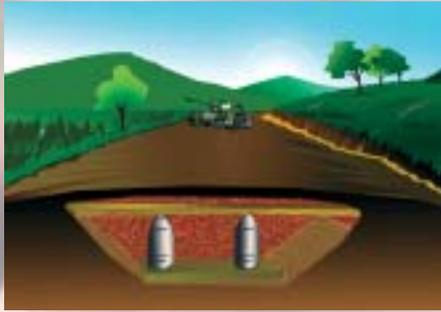
The cycle of mine development and counter response was complete with the invention of the first



(Above) Modern Fougasse designs used in the Vietnam War.

(Right) Harper's Weekly described the early use of landmines in the American Civil War.





Improvised artillery munitions used as a landmine.

generation of both anti-personnel and anti-tank mines becoming standard munitions in the arsenal of armies worldwide.

Eventually, rules of engagement were designed for the use of landmines. Combatants employing landmines were expected to record their exact location and mark the perimeter of the minefield with warning signs. Yet the fog of war plays havoc on rules. Untrained combatants attempting to survive battlefield stresses find little time to record or mark locations of landmines. Eventually, combatants with landmine location knowledge are killed, move away to new battlefields or are demobilized. Too often mine markings, if they existed at all, become obscured or forgotten. Hazardous areas become overgrown and take on ominous size and proportion as civilians are maimed or killed in their communities.

Further complicating the problem of mine clearance today is the way warfare has changed over the last 50 years. Earlier wars were fought with recognizable defensive and offensive positions. Battle lines were easy to follow. Current wars and skirmishes are often fought with no recognizable battle lines in what can be described as guerilla war tactics of low technology but high

intensity. Landmine warfare likewise evolved from strategically deterring an enemy's movements to blatant attempts to kill and maim. Mines are no longer placed within recognizable "war zones," but are now commonly placed around settlements, homes, schools, paths, wells and roads; places where people live, work, play and commute to town. Non-state actors, terrorists, insurgents, self-styled adventurers, thugs and drug lords have taken to employing landmines consciously against civilian and benign targets.

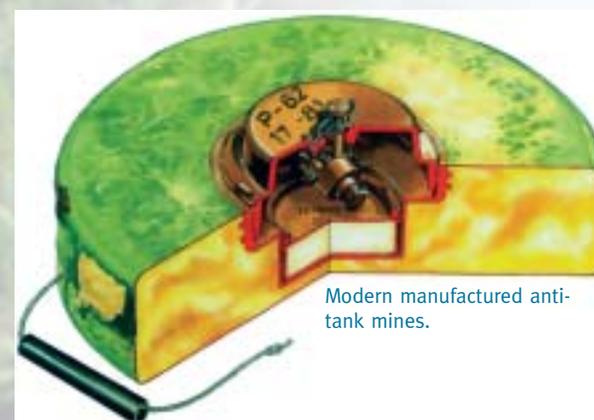
People all over the world have now come to the realization that landmines cause intolerable suffering to innocents far beyond the scope of conventional war. Long after the violence has ended, landmines and the debris of war continue to affect the lives, education, economy and stability of entire countries, provinces, tribes and hamlets. The terrible explosive effects of landmines not only shatter individual lives and limbs; the fear permeates deep into the fabric of society.



(Above) Anti-tank ditch in SE Asia similar to those used in WWII, normally reinforced with landmines.



(Left) Blast anti-tank mine damage to a tank track and bogey wheels.



Modern manufactured anti-tank mines.