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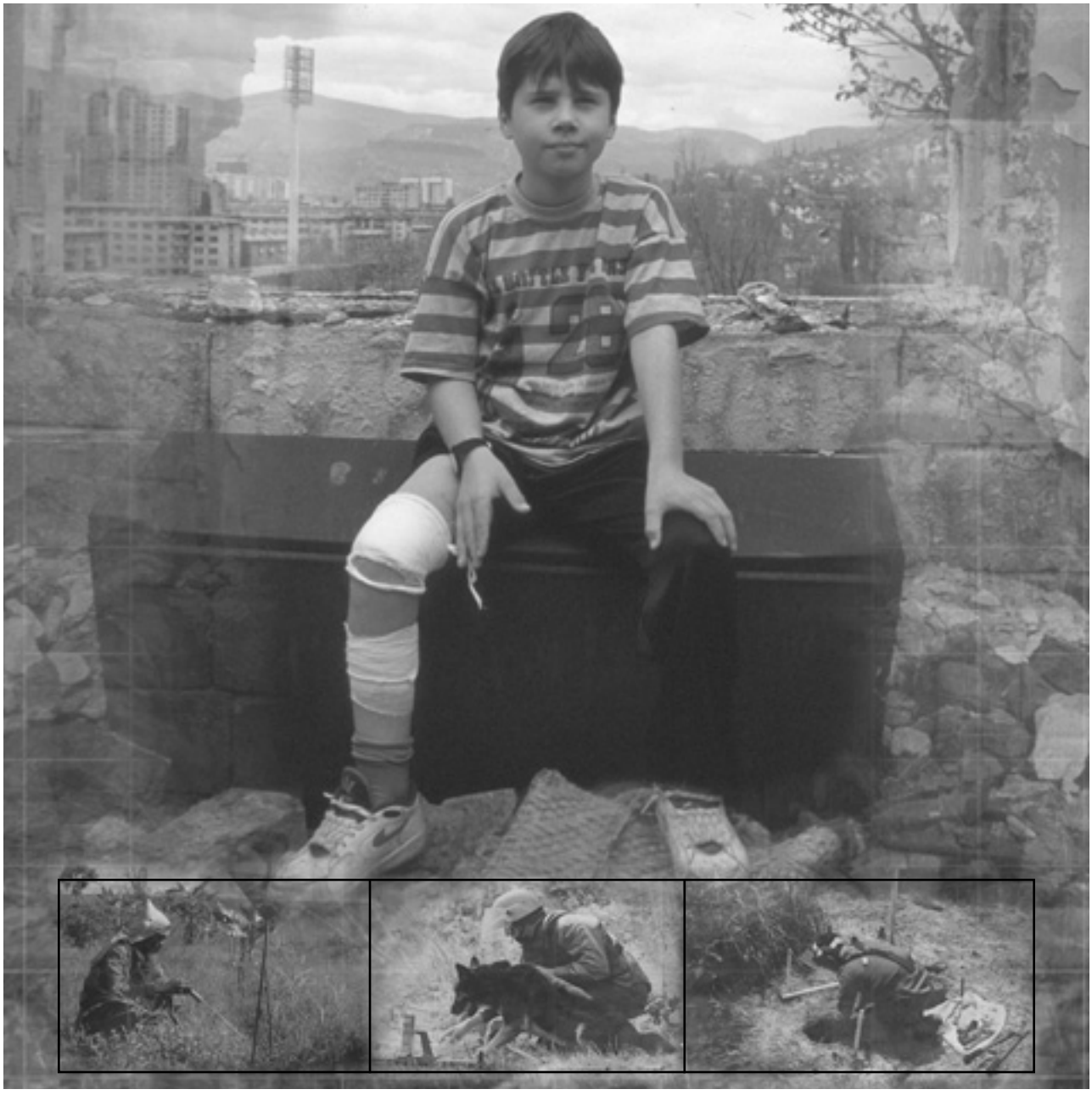

PROTECTING LIVES, RESTORING LIVELIHOODS

THE U.S. PROGRAM TO REMOVE LANDMINES

JANUARY 2004

STRIVING TO BRING AN END TO THIS TRAGEDY

Across the globe, from Afghanistan to Zambia, the United States and several other governments, private organizations, and the United Nations are generously providing humanitarian mine action assistance to many of the over 60 countries that are affected by persistent landmines. Thanks to their efforts over the past decade, reported landmine casualties worldwide have dropped from the generally accepted estimate of 26,000 annually through the year 2000, to less than half of that in 2002; thousands of square kilometers have been cleared one square meter at a time; many thousands of mine survivors are now using prosthetic devices.

Yet, the fact remains that millions of deadly persistent landmines still remain from past conflicts, waiting to kill and maim. Men, women, and children in many countries still cannot go about their daily lives without risk to life and limb. Casualties still occur at a terrible rate and hundreds of thousands of landmine accident survivors still need help.

By engaging civil society and the private sector to reinforce the official efforts of the United States and other donor nations through the creation of mine action partnerships, we can make an even bigger difference in the lives of people all over the world. We can help parents send their children out to play, free from the fear that they will not come home.

We can help villagers put food on their tables by reclaiming their fields for agriculture. We can help the survivors of landmine accidents become fully engaged in their communities. We can help develop new technologies to make demining more effective and less dangerous. We can teach people at risk how to protect themselves and how to protect their families.

We can help heal shattered lives, and help heal torn societies.

In short, we can help to create a secure and stable environment where freedom and opportunity thrive.

I am pleased to welcome you to this issue of *U.S. Foreign Policy Agenda*, which illustrates the challenges of global mine action, and highlights America's extensive record of cooperation, consensus-building, and leadership in the international effort to end the landmine tragedy.

Colin L. Powell
Secretary of State
January 21, 2004

U.S. FOREIGN POLICY
A G E N D A

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PROTECTING LIVES, RESTORING LIVELIHOODS:
THE U.S. PROGRAM TO REMOVE LANDMINES

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Cover photographs courtesy of the *Journal of Mine Action* at the Mine Action Information Center at James Madison University in Harrisonburg, Virginia

U.S. FOREIGN POLICY
AGENDA

AN ELECTRONIC JOURNAL OF THE U.S. DEPARTMENT OF STATE VOLUME 9 • NUMBER 1 • JANUARY 2004

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U.S. HUMANITARIAN MINE ACTION: MAKING THE WORLD SAFER

By Lincoln P. Bloomfield, Jr.
Special Representative of the President and Secretary of State for Mine Action and Assistant Secretary of State for Political-Military Affairs

The United States is a world leader in humanitarian mine action, having contributed over half of the $1.7 billion invested worldwide in mitigating the effects of persistent landmines since 1993. The U.S. departments of State, Defense, and Education, the U.S. Agency for International Development (USAID), and the U.S. Centers for Disease Control and Prevention operate significant mine action programs that work in concert as the U.S. Humanitarian Mine Action Program, says Bloomfield. Mine action embodies American core values — respect for human life, caring in the face of human suffering, and support for economic independence and self-sufficiency.

Persistent landmines, the residue of past wars, insurgencies, and internal reigns of terror, kill or maim thousands of people each year in dozens of countries around the world. Untold numbers of persistent (or dumb) landmines, estimated in the millions, infest areas in every hemisphere. Landmines and unexploded ordnance (UXO) disrupt humanitarian aid delivery, agriculture, trade, education, and social development. These explosive remnants of war drain scarce public health resources and impede post-conflict reconstruction and economic recovery in impoverished areas most in need of relief. Landmine contamination is a humanitarian disaster that perpetuates poverty, desperation, and regional instability.

Humanitarian mine action (HMA) is the term used to encompass landmine detection and clearance; mine risk education; landmine survivor assistance; and research and development of new clearance techniques and technologies. Since 1993 alone, when the United States established its inter-agency mine action program to formalize its humanitarian demining efforts that first began in 1988, it has invested over $700 million dollars in mine action. The landmines that are cleared by this program have almost entirely been manufactured and emplaced by other governments or regimes, some of which no longer exist, and by non-state actors — which include guerilla groups, civilians involved in inter-communal strife, bandits, and terrorists.

Humanitarian mine action is a bipartisan issue that has received broad and growing support from both Republicans and Democrats in the U.S. Congress. The Clinton administration launched the first formal Humanitarian Demining Program, and the Bush administration continues to strengthen it. Mine action embodies American core values – respect for life, caring in the face of human suffering, support for economic independence and self-sufficiency, and concern for wildlife and domestic animals.

U.S. LEADERSHIP — HOLDING THE COURSE

The first mine clearance programs were established in the late 1980s and early 1990s in Afghanistan and Cambodia. These programs, financed in large part by the U.S. government, laid the foundation for a worldwide movement that galvanized international opinion and mobilized significant financial resources to address the disasters caused by the indiscriminate use of persistent landmines. Today, U.S. programs operate in coordination with multinational and intergovernmental organizations to encourage indigenous mine action capability so mine-affected countries can sustain their own programs.

The United States was a founding member of the first international landmine treaty, the Amended Mines Protocol to the Convention on Certain Conventional Weapons, which governs the use of anti-personnel landmines as well as anti-vehicle mines, improvised explosive devices, and booby traps. By contrast the Ottawa Convention to ban landmines deals only with anti-personnel landmines and is silent on these other devices. The United States helped to draft the Amendment in the early 1980s; it entered into force in 1998 and was ratified by the United States in May 1999.

Other important milestones in the U.S. effort to ensure that it did not aggravate the global landmine problem:

1992 — Implemented a unilateral ban on the export of its anti-personnel landmines.

1996 — Initiated the unilateral removal of its landmines from the perimeter of the U.S. Naval Base in Guantanamo, Cuba, the last permanent U.S.-controlled minefield in the world. Clearance was completed in 1999 and quality assurance checks in 2000.

1997 — Designated a senior U.S. government official as the President's Special Representative for Mine Action and established offices in the State Department to focus on mine action programs and partnerships.

1998 — Completed the unilateral destruction of 3.3 million non-self-destructing landmines, retaining only enough for training, research and development, and the defense of South Korea. The majority of the landmines in the U.S. arsenal are of the self-destructing/self-deactivating type that do not cause the kinds of suffering and long-term problems posed by persistent landmines decades after they are emplaced.

2001 — Established the world's first Quick Reaction Demining Force to reinforce cease-fires and peace settlements around the globe, and to hasten the return of internally displaced persons and refugees and the movement of relief efforts.

MEASURING EFFECTIVENESS

International efforts have greatly accelerated mine action programs. To date:

- Thousands of square kilometers of land have been cleared in nearly 60 countries.
- The number of landmine victims reported each year has declined by more than half from 26,000 annually.
- Each year since 2000, more mines have been removed than reportedly laid.
- A wide range of demining technologies and methods have become available, including mine resistant vegetation clearance vehicles, improved personal protective equipment, and teams of mine detecting dogs and trained handlers, resulting in dramatic increases in productivity and safety.
- A refined set of international standards and protocols has been created to address all aspects of humanitarian mine action, further increasing mine action efficiencies and productivity.

In early demining programs, success was measured by numbers of mines cleared, but this does not satisfactorily assess the degree to which mine clearance programs provide public access to land or infrastructure. Similarly, counting the number of people who attend a mine risk education course does not tell us whether the course effectively changed risky behaviors.

We must be able to link levels of effort to specific social and economic outputs like increased food production, roads restored, decreased casualty rates, and improved livelihoods. Donor fatigue is a real concern in a world with competing demands; so officials involved in mine removal must adopt the most meaningful performance measures possible to attract resources for their efforts.

Humanitarian mine action programs must focus efforts where the need is the greatest, balancing risk with resources to determine the best use of available

funding. Program plans should outline an intended "end state" for international assistance, identifying means to ensure that the most acute threats to a country are removed immediately while less pressing requirements are addressed later. For example, results from recent landmine impact surveys in Chad and Yemen clearly indicated that lands posing the greatest risk of casualties and the most economic harm in those cases actually comprised a small fraction of the total contaminated area.

Affected countries themselves must make mine action a national priority and integrate it into their development programs. U.S. efforts focus on enabling countries to carry out their own demining programs so we can gradually shift assistance to other mine-affected nations. Recipient governments must take responsibility for allocating national resources to mine action and assuming program management. Where resources are scarce and declining, countries must make difficult priority decisions for solving their mine problems.

EXPANDING THE VISION

The environmental devastation that results from widespread mine and UXO contamination compounds problems of hunger, poverty, and economic deprivation. Demobilized soldiers and poorly disciplined militias with large quantities of small arms and other light weapons undermine stability and rule of law. The global community must cooperate in attacking these problems.

Humanitarian mine action efforts should be expanded to include a comprehensive response to heal the wounds of war and to generate economic opportunity. Communities whose inhabitants can grow their own food and transport their goods to market, whose young people have opportunities other than soldiering, and whose children can walk to school in safety, are basic to the establishment of stable societies.

Humanitarian mine action is not an end in itself: the measure of its success is reconstruction, reconciliation, and development. To measure up, affected countries must develop the capacity to manage and implement self-sustaining demining programs. This means, in part, reducing the number of expatriates working in mine removal and increasing the numbers of indigenous workers in the effort.

COLLABORATION IS KEY

Achieving a world safe from landmines and other explosive remnants of war requires more than money. The entire mine action community must work together to ensure that our collective efforts are complementary and our aims compatible. Cooperative funding initiatives, such as the International Trust Fund for Demining and Mine Victims Assistance (ITF) based in Slovenia, whose mandate covers the Balkans and the Caucasus, offer a model for pooling resources. By establishing a matching grant system, the United States and 29 other donors have mobilized more than $100 million to support regional mine action. The United States is also working closely with the European Union to coordinate information management as well as our geographic information systems (GIS) and impact survey efforts.

PUBLIC-PRIVATE PARTNERSHIPS

The costs of removing millions of landmines around the world are enormous, as are the associated costs of providing trauma care, rehabilitation, prosthetics, and other support for landmine survivors and development aid for local, regional, and national economies devastated by war. Governments alone do not have sufficient resources to address these needs. Individual citizens, civic and religious associations, non-governmental organizations, charities, and corporations must, and do, play a vital role in humanitarian mine action.

The U.S. Department of State initiated its Mine Action Public-Private Partnership program in 1999. To date, the effort has produced more than 40 partnerships that help support the difficult but necessary work of clearing mines, teaching at-risk populations to avoid mined areas and dangerous

behavior with explosive devices, and helping survivors regain their dignity and independence. Private and non-profit contributors to humanitarian mine action continue to make significant contributions to the cause; and, they deserve credit for what has been achieved to date.

THE WAY AHEAD

A comprehensive review of U.S. government landmine policy is underway. A wide range of private citizens and non-governmental organizations are contributing to this deliberative interagency process that will attempt to balance humanitarian concerns with our country's unique security responsibilities.

The global community has learned a great deal since the inception of humanitarian mine action just over a decade ago. The governments of donor and mine-affected nations, international organizations, and the private sector have created a formidable international network to confront the problem of mines. Working together, we can free the world of the effects of landmines and unexploded ordnance, and restore peace, stability, and security to war-ravaged societies.

THE LEAHY WAR VICTIMS FUND — A CRUCIAL PART OF U.S. HUMANITARIAN AID

By U.S. Senator Patrick J. Leahy
Democrat of Vermont

The Leahy War Victims Fund was established in 1989 to respond to the needs of innocent victims of conflict in developing countries. Under the management of the U.S. Agency for International Development (USAID), the Fund provides $10 million annually for programs to assist people living with disabilities resulting from civil strife and warfare, says Senator Patrick J. Leahy, who led efforts to create the Fund. Most of the money has been used to provide affordable and appropriate artificial limbs and related medical, rehabilitation, and vocational assistance to victims of landmines and other unexploded ordnance (UXO).

Years ago, when my wife Marcelle and I began traveling to developing countries, we witnessed the ravages of conflict on civilian populations. The streets of Phnom Penh, Managua, Kabul, and many other cities were flooded with disabled civilians, many of them children, begging for help. We quickly learned that many of these people were innocent victims of war — farmers and schoolchildren — who had been maimed by landmines and other unexploded ordnance (UXO). These unsuspecting victims were not only disfigured and ostracized by their communities — they often had no way to earn income and were forced to the streets.

The Leahy War Victims Fund was established in 1989 to respond to the needs of these innocent victims of conflict in developing countries. Under the management of USAID, today the Fund provides $10 million annually for programs to assist people living with disabilities resulting from civil strife and warfare. The majority of the funds have been used to provide affordable and appropriate artificial limbs and related medical, rehabilitation, and vocational assistance to victims of landmines and other UXO. The Fund has also been used to help those who have suffered from the indirect consequences of conflict, such as polio caused by interrupted immunization campaigns.

When I first proposed the Fund, the State Department and USAID were, frankly, unenthusiastic. They said helping war victims was not a foreign policy priority. It wasn't a "strategic objective." War victims did not need their own fund; they would, like other people, benefit from our other health and economic development programs. But what I had seen convinced me that there was both a pressing need and an opportunity for a more substantial, targeted response.

During the first few years of the program, we started small and learned big. For example, we found that training local people, many of whom were disabled themselves, was essential. We also discovered that enabling amputees to walk or use wheelchairs is simply a first step. We also realized the numerous obstacles to recovery confronting these people as they try to rebuild their lives. There is, of course, the physical recovery, but these people also face social and psychological adjustments, a lack of employable skills, and discrimination in the workplace.

Advocacy, legislation, and policy reform by and for people with disabilities are as necessary for their social and economic inclusion as artificial limbs are.

USAID has had exceptionally capable, committed people managing the Fund, who consult closely with the Congress on its implementation. Since its inception, more than $112 million has been disbursed through 19 non-governmental organizations (NGOs) in 28 countries in Central America, sub-Saharan Africa, the Middle East, South Asia, and Southeast Asia.

One of my proudest moments was when President George H.W. Bush agreed to use the Leahy Fund in Vietnam, the first U.S. assistance to the Vietnamese people since the war. The Fund in Vietnam has done more than improve peoples' lives; it has enabled two former enemies to work together to rebuild trust. Because it was purely humanitarian, the Fund provided a neutral mechanism to open the door for discussions on a wide range of issues which ultimately led to the resumption of formal diplomatic relations. More recently, the Fund has been used in Vietnam to support efforts culminating in the passage of two national laws regarding disabilities and the establishment of building design codes and construction standards to ensure access for people with disabilities.

Over the years, the Fund has adapted to provide support for a variety of interventions, including improving medical and surgical services, developing and enforcing laws and policies regarding people with disabilities, promoting partnerships between NGOs and governments, and expanding employment and economic opportunities.

Each country poses different challenges and opportunities. For example, in Laos, an impoverished country with a large UXO problem, the Fund has focused on addressing the surgical, medical, and rehabilitation needs of victims of traumatic injuries in isolated rural areas. In Lebanon, the Fund is supporting a cooperative of landmine victims to develop markets for local agricultural products. In Sierra Leone, the Fund has been used to provide artificial limbs and occupational and psychological counseling for children and adults who suffered physical mutilations in the civil war.

Of the many challenges that remain, ensuring the sustainability of programs is perhaps the most significant. Unfortunately, in post-conflict countries — in fact, in most developing countries — addressing the needs of people with disabilities is not a government priority. Government officials often want to manage these programs, but they rarely have the resources or skills to do so effectively. There are examples of Fund-supported programs that declined drastically in quality after control was shifted from an NGO to the government. The most successful examples of sustainability occurred where Fund programs have been integrated into existing health structures, utilizing private sector partners, with appropriately trained, supervised, and supported professionals who are responsive to the views of people with disabilities.

The Leahy Fund, because it has been predominately used to help victims of landmines, is part of the U.S. government's broader mine action efforts. Mine victims' assistance is one leg of a three-legged stool — the other legs being humanitarian demining, and banning the production, export, and use of mines. Support for all three is essential, particularly by the world's lone superpower, if the global mine problem is to be solved.

Although the United States has not joined the worldwide Ottawa Convention, which bans anti-personnel mines, we are the world's largest contributor to humanitarian demining. The State Department plans to spend $50 million in Fiscal Year 2004, not counting at least that amount to clear millions of unexploded mines and other UXO that litter Afghanistan and Iraq. These efforts, which are costly, time consuming, and dangerous, will prevent the deaths and crippling injuries of thousands of innocent people.

My goal is to one day be able to say that the Leahy War Victims Fund is no longer needed. But despite the efforts of the United States and other countries to find and destroy landmines before they are triggered by unsuspecting children, these insidious weapons and other UXO-like cluster bomb duds will indiscriminately maim and kill for the foreseeable future. For that reason, the Fund will continue to have a role in U.S. foreign policy — not because it necessarily fits into some strategic objective, and not because it necessarily advances some other foreign policy goal (although it often does). The Fund will continue to be important because it is the right and humane thing for the world's wealthiest, most powerful country, to do.

APPLYING EPIDEMIOLOGY TO THE FIELD OF MINE ACTION

By Mark Anderson, MD, MPH and Michael Lipton Gerber, MPH
National Center for Environmental Health, U.S. Centers for Disease Control and Prevention

By adopting some steps that epidemiologists use to study the health conditions of communities, mine action officials are gaining new insights into the direct and indirect public health consequences of landmines and unexploded ordnance. However, much remains unknown. The authors, two U.S. epidemiologists, argue that surveillance efforts need to be expanded and data collection made more consistent.

The public health impact of landmines and unexploded ordnance (UXO) on civilian populations has been well documented.[1-9] Landmines and UXO cause death, injury, and disability, but there are indirect public health consequences for civilian populations as well. In areas with large numbers of landmines and UXO, indirect health consequences can include long-term psychological effects, population displacement, and limited access to clean water and arable farmland, which can lead to heightened risk of disease transmission and malnutrition. Landmines and UXO can also impose a significant financial burden on families, health institutions, and communities.

We still have much to learn about the impact of landmines and UXO on the health status of conflict-affected populations. For instance, we do not know precisely how many people are injured or killed by landmines and UXO each year; we do not know what behaviors or characteristics put people at risk for injury or death from landmines and UXO; and we do not know whether prevention activities such as mine-risk education are effective.

We can begin to find answers to these questions by introducing some of the principles of applied epidemiology, the scientific basis of public health practice, into the field of mine action. By applying basic epidemiology, the public health community has developed an approach that has been successful in preventing other injury-related public health problems such as suicides and road traffic injuries.[10-12] Using the same approach in the field of mine action could provide the scientific rigor needed to address some of the field's unanswered questions, which could ultimately lead to greater success in preventing deaths, injuries, and disabilities caused by landmines and UXO.

The science of epidemiology involves the study of health conditions, such as disease and injury, among populations rather than among individuals. One goal of applied epidemiology is to determine the effects of a health condition on a population. To develop successful prevention strategies, epidemiologists collect and analyze data to answer the following basic questions:

- Who is affected by the health condition?
- Where geographically is the health condition occurring?
- When is the health condition occurring?
- How or why did a person get the health condition?

Epidemiologists move from questions to answers by using an approach that involves four critical steps: (1) determining the magnitude, scope, and characteristics of the problem; (2) studying the factors that increase the risk of disease, injury, or disability, and determining which factors are potentially modifiable; (3) assessing what can be done to prevent the problem by using the information about causes and risk factors to design, pilot test, and evaluate

interventions; and (4) implementing the most promising interventions on a broad scale.[4]

The mine action community has adopted several of these critical steps. Surveillance systems have been developed in several settings, providing useful information on the magnitude of landmine and UXO injuries there. However, these surveillance systems are often limited in scope and are inconsistently implemented. Most landmine and UXO injury surveillance systems are hospital-based and do not cover people killed or injured who never reach the hospital.

Although collecting data on landmine-related injuries and disabilities is difficult in conflict-affected countries, we must expand the scope of current surveillance efforts by providing additional data from community-based surveillance systems and periodic cross-sectional surveys. We must also make sure that surveillance data are collected in a consistent manner that will allow comparisons across countries. Consistency in data collection could be achieved through the development and adoption of minimum datasets, which would provide standardized epidemiologic data collection instruments and definitions. Some effort has already been made to develop standardized data collection tools, but these instruments have not been adopted universally.[13, 14]

Determining those factors that increase the risk of injury is the second critical step in a public health approach to landmine and UXO injury prevention. Epidemiologic methods, such as case-control studies, can be used to identify potential risk factors for landmine and UXO injury and death. These studies can be conducted at individual and community levels to determine what behaviors or characteristics of individuals or communities put them at higher risk for injury or death. Public health agencies such as the Centers for Disease Control (CDC) and the World Health Organization (WHO) can conduct some of these studies, but it would be better if public health practitioners within the mine action community itself could help conduct these studies.

The public health approach also involves the evaluation and implementation of effective prevention programs. There are strategies currently in place, such as mine-risk education programs, that have not been rigorously evaluated. As a result, the effectiveness of these programs to decrease landmine and UXO injuries is unknown. By applying epidemiologic methods, prevention efforts, such as mine-risk education programs, could be systematically evaluated. For instance, communities where a mine-risk education program has been implemented could be compared with other communities where the program has not been implemented. This comparison strategy, which has been used successfully to evaluate other injury-prevention programs, could demonstrate whether the number of landmine and UXO injuries were reduced in the community that implemented the education program.[15, 16] Then, if the prevention program was found to be effective, public health practitioners could assist in widespread dissemination and implementation of the program.

Public health professionals can assist the mine action community in applying epidemiologic methods to the prevention of landmine and UXO injuries, and they can also train mine action personnel in basic epidemiology to begin applying these methods themselves. In October 2003, CDC and the United Nations Children's Fund (UNICEF) collaborated in conducting a Field Epidemiology for Mine Action Course (FEMAC). This course provided 25 mine action professionals with basic training in field epidemiology methods. The topics covered in the two-week course included basic concepts in epidemiology, survey design, surveillance, program evaluation, use of data for decision making, and data presentation. The participants also received training in EpiInfo 2002, a software package for epidemiological data collection and analysis. CDC and UNICEF plan to conduct the course on a regular basis to train mine action professionals in applied epidemiology and to promote the systematic development of effective landmine and UXO injury prevention programs.

The field of mine action faces many challenges in preventing injuries and deaths from landmines and UXO. The application of basic epidemiologic methods can provide the mine action community with cost-effective tools for meeting these challenges.

By thoroughly describing the problem, accurately identifying risk factors, and effectively targeting and evaluating prevention measures, we can lessen the impact of landmines and UXO on civilian populations.

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U.S. DEFENSE DEPARTMENT: SHARING TRAINING AND TECHNOLOGY WITH THE INTERNATIONAL COMMUNITY

Beginning in May 1996, the U.S. Department of Defense was directed to significantly expand its humanitarian demining program, to develop improved mine detection and clearing technology, and to share this new technology with the international community. The assistant secretary of defense for special operations and low intensity conflict oversees the DOD Humanitarian Demining Program.

The U.S. Department of Defense (DOD) trains countries in the procedures of landmine clearance, mine awareness, and victims' assistance, as well as in the development of leadership and organizational skills necessary to sustain these programs after the departure of U.S. military trainers. In addition, a DOD research and development program creates new technologies to deal with landmine issues.

Landmine policy in the United States is made through an interagency process. The National Security Council evaluates concerns put forth by various departments and agencies and gives recommendations to the president for a decision. The Department of State, Department of Defense, and Joint Chiefs of Staff are the primary agencies charged with implementing that decision.

The DOD's Humanitarian Demining Program seeks to reduce civilian casualties, create conditions for the return of refugees and internally displaced persons to their homes, reinforce national stability, and encourage international cooperation and participation. The program helps to establish and support sustainable mine action capabilities by providing the resources and skills with which affected countries can achieve a mine-safe status.

DOD established the Humanitarian Demining Research & Development (R&D) Program to develop equipment for immediate use in various international humanitarian demining missions and environments. The goal is to provide equipment to the international demining community that reduces the time and cost associated with demining while improving operator safety.

This is accomplished through:

- Utilizing commercial-off-the-shelf equipment;
- Integrating mature technologies; and
- Leveraging existing technologies of countermine technology programs used for military purposes.

The program aims to improve technologies for mine and minefield detection, area clearance, vegetation clearance, mechanical mine clearance, mine neutralization, individual deminer protection, and individual deminer tools.

PROGRAM EXECUTION

The Countermine Division of the U.S. Army Research, Development, and Engineering Command's (RDECOM) Night Vision and Electronic Sensors Directorate (NVESD) executes the Humanitarian Demining Research & Development Program. The NVESD Countermine Division has many years of experience with military countermine research and development. The extensive countermine engineering expertise, coupled with a world-class fabrication facility and organic test facilities, make the Countermine Division uniquely qualified to conduct this important Humanitarian Demining R&D mission.

Each year the Humanitarian Demining R&D Program Office invites representatives from mine-affected nations to an Annual Requirements Workshop to identify and update their most critical needs.

STRUCTURE THE PROGRAM

Once a program plan is approved, design and development of new prototype technology begins. This is primarily accomplished by one of two methods. The first is by awarding prototype contracts to various U.S. and foreign companies specializing in demining equipment development. The second is by designing and building prototypes in NVESD's one-of-a-kind fabrication facility. International market surveys help to identify commercially available items for landmine detection, landmine and vegetation clearance, neutralization, and individual protection. Once built, the prototypes undergo developmental testing to ensure that all design requirements are met. If test results identify further engineering modifications that will improve the system's performance, changes are made and the system is re-tested.

PERFORM IN-COUNTRY ASSESSMENTS

A Site Assessment Team, which includes representation from the R&D Program Office, will assist the requesting nation in determining the most appropriate prototype equipment for its mine problem. Many factors, including terrain, weather, and type and variety of landmines, are considered. The assessment process ends with a recommendation of the most suitable prototype, which then undergoes evaluations that typically last for six months to one year.

CONDUCT IN-COUNTRY FIELD EVALUATIONS

Once the assistant secretary of defense for special operations and low intensity SO/LIC approves deployment, the R&D Program Office contacts the appropriate U.S. Embassy representative, combatant command headquarters, and host nation representatives to begin the deployment process. The first order of business is completion of a Memorandum of Understanding, a Logistics Support Agreement, and an evaluation plan spelling out everyone's responsibilities. Once these are completed, the R&D Program Office transports the equipment along with multi-lingual instructional materials to the host country and conducts training. After the training team departs, the R&D Program Office will typically conduct periodic assistance visits.

TRANSITION TO OPERATIONAL USE

The host country may be part of the development team, participating in meetings and observing testing. In return, the host country agrees to conduct an operational field evaluation of the prototype. The country benefits by being part of a technology development designed specifically for its problem, and the R&D Program benefits from the information and experience gained in the evaluation.

INFORM THE DEMINING COMMUNITY

The Humanitarian Demining R&D Program is responsible for keeping the military countermine and humanitarian mine action communities informed of its technology developments. The R&D Program Office does this in several ways. Technologies developed are listed in the Developmental Technologies Equipment Catalog available on the Internet, in hard copy, and on CD. The Catalog is updated approximately every two years. Test results are sent to organizations and individuals in the international demining community for use in making equipment investment decisions. The program has also developed a newsletter that will be available to everyone on its website, which is regularly updated.

PUBLIC-PRIVATE PARTNERSHIPS ARE ESSENTIAL IN HELPING LANDMINE SURVIVORS

By Kenneth R. Rutherford
Co-founder of the Landmine Survivors Network and
Professor of Political Science, Southwest Missouri State University

The author, a landmine survivor, highlights the vital role that public-private partnerships play in landmine survivor assistance. While the U.S. government's survivors assistance efforts differ from country to country and covers a variety of programs, I believe that prosthetics, amputee education, and social reintegration are three of the most important aspects the U.S. government considers in helping survivors, says Kenneth R. Rutherford.

On December 16, 1993, a landmine accident changed my life forever. Because I had excellent medical and rehabilitation support, I learned how to live as a double amputee and pursue my dream of becoming a teacher. I am one of the lucky landmine survivors, many of whom receive inadequate assistance or die.

While reported civilian casualties from landmines are down from an estimated 26,000 annually as recently as the late 1990s to less than half that number — about 11,700 — in 2002,[1] there are more than 300,000 landmine survivors worldwide. It is estimated that it will cost more than $3 billion over the next 10 years to rehabilitate these survivors.[2]

To address this need, the U.S. Department of State is partnering with non-governmental organizations (NGOs) on a range of humanitarian mine action initiatives — to include survivor assistance activities. This article highlights the vital role that public-private partnerships play in landmine survivor assistance programming. While the U.S. government's survivors assistance aid differs from country to country and covers a variety of programs, I believe that prosthetics, amputee education, and social reintegration are three of the most important aspects the U.S. government considers in helping survivors.

Survivor assistance is comprehensive and not restricted to the provision of medical treatment for initial traumatic injuries sustained from landmine explosions and the provision of prosthetics.[3] It also includes ongoing treatment to aid in the physical, mental, and emotional rehabilitation of survivors and their families. Landmine survivors themselves have defined survivor assistance as "emergency and medical care; access to prosthetics, wheelchairs and other assistive devices; social and economical reintegration; psychological and peer support; accident prevention programs; and legal and advisory services."[4] These activities can take the form of continued rehabilitative care, psychological and social counseling, vocational training, broader public advocacy for disability rights, and judicial reform aimed at removing barriers to persons with disabilities in an effort to achieve integration into society.

The primary source of U.S. government support for survivor assistance programming is the U.S. Agency for International Development/Patrick J. Leahy War Victims Fund (USAID-LWVF). It provides financial and technical assistance to civilian victims of war, including those with landmine injuries, in developing countries. To date, the LWVF has given more than $112 million in more than 28 countries. During the past 10 years, the fund has financed prosthetic services and follow-up patient monitoring.

One of the LWVF's key implementing partners is the Vietnam Veterans of America Foundation (VVAF), an NGO based in Washington, D.C. In 1992, the VVAF

established the Kien Khleang Physical Rehabilitation Center, a treatment facility and fully equipped workshop that produces more than 140 prostheses and orthoses and 30 wheelchairs each month, in Cambodia. Especially noteworthy is that many of its employees are former patients of the Center. The Center currently treats more than 240 patients each month and has helped more than 10,000 Cambodians to date, 70 percent of whom are landmine survivors. It is the largest rehabilitation center in Cambodia and continues to receive USAID-LWVF support.

The LWVF also helps to improve survivors' lives by encouraging and increasing their accessibility to education, training, and employment opportunities. In this regard, the LWVF partnered with the Landmine Survivors Network (LSN), an NGO founded by landmine survivors to facilitate effective long-term rehabilitation and to enable persons with limb loss to resume active, productive lives. To help survivors, LSN developed a series of limb-loss educational pamphlets with input from amputees and rehabilitation professionals from seven countries and funded by the U.S. government through the LWVF.

These pamphlets are important to an amputee's recovery. Once an individual has lost a limb to an antipersonnel mine or other form of exploding ordnance, early medical, rehabilitative, and prosthetic care is vital.

Although the majority of the world's amputees live in mine-affected countries, anyone who has experienced limb loss will find these pamphlets useful. The series comprises 10 pamphlets translated into several languages: Amharic, Arabic, Bosnian, Portuguese, Spanish, and Tigrigna. The series is aimed primarily at amputees and covers a broad range of issues, from what to expect immediately after the surgery to returning to work. The pamphlets also discuss different amputee related issues:

- **Amputation Surgery:** Why people have amputations, what to expect, do's and don'ts during recovery.
- **Pain After Amputation:** Types of pain, their causes, and ways to alleviate them.
- **Wrapping Your Residual Limb:** Why and how to wrap the residual limb (the portion of the limb that remains after injury and surgery).
- **Infection Prevention:** How to prevent, recognize, and treat infections.
- **Emotions After Limb Loss:** Positive ways to deal with emotions people experience with limb loss.
- **Prosthetics:** Frequently asked questions and advice about prosthetics from others who have lost limbs.
- **Physical Rehabilitation:** Tips to help survivors recover from surgery, prepare for prosthesis, and learn to walk again.
- **Getting Back to Work:** Stories from people who returned to work after amputation.
- **Rights and Responsibilities:** What they are, and why you should understand them.
- **Information for Families:** What family members and friends should know to understand and help the amputee.

Another non-profit organization that works with the State Department to support humanitarian mine action is Freedom Fields USA, a group helping people in mine infested countries "return to a path of economic redevelopment and hope." Working with the Department of State's Office of Weapons Removal and Abatement, Freedom Fields USA has raised more than $140,000 to alleviate the effects of landmines in the Kamrieng District in Cambodia. In addition to landmine clearance, the poorest communities within the Kamrieng District will benefit from Freedom Fields USA's restoration of its schools, roads, and water supply.

Speaking at a November 15, 2003, Freedom Fields USA benefit event entitled "Evening in Cambodia: A Benefit for Humanitarian Mine Action," Deputy Secretary of State Richard Armitage highlighted the vital role that can be played by civil society working in partnership with the Department of State to reinforce official mine action efforts, including those devoted to rehabilitating landmine survivors.

Finally, it is hard to be empowered and involved if you can't go anywhere, communicate, or participate. To accomplish these goals, the U.S. government, through the LWVF fund, supports a program of

assistance in Vietnam that began with a focus on barrier-free accessibility. This has resulted in passage of a comprehensive national disabilities law, which is based on the principles of the Americans with Disabilities Act. Signed into law on July 26 1990, the Americans with Disabilities Act is intended to make American Society more accessible to people with disabilities.

In Vietnam, a non-governmental organization, Vietnam Assistance for the Handicapped (VNAH), in close coordination with the Vietnamese government and funded by the U.S. Department of Labor, works to increase employment opportunities for people with disabilities, many of whom are landmine survivors. This program provides support to several Vietnamese government entities to promote creation of labor law and policy on employment opportunities for persons with disabilities.

The LWVF's programs, coupled with the U.S. government's public-private partnership initiative to support mine action, are vital to helping hundreds of thousands of landmine survivors recover. This assistance enables survivors to receive some of the benefits that I was so fortunate to have as a citizen of a wealthy, technologically advanced country.

The private organizations cited here are but a few of many humanitarian NGOs that are working with the U.S. government to provide similar rehabilitation and other assistance to landmine survivors around the world. To so many of these survivors, having one's legs and arms are critical to economic viability. They are the farmers, herders, traders, merchants, and others who, fitted with artificial limbs, are contributing in ways small and large to the prosperity of their families, their communities, and their countries.

While serving as an NGO humanitarian aid officer on a micro-credit project funded by the U.S. government, I distributed loans to Somalis trying to recover from years of war and drought. I made it a point to tell loan recipients that this was a gift from the people of the United States of America. In the future, I would also like to say that similar U.S. government public-private partnerships were essential in helping many thousands affected by landmines successfully recover from their injuries and pursue dreams once more.

The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. Government.

1 "Clear a Path to a Safer World: Addressing the Tragedy of Landmines," Lincoln P. Bloomfield, Jr., Assistant Secretary for Political-Military Affairs and Special Representative for Mine Action, Remarks to Smith College, Polus Center, Northampton, Massachusetts, November 15, 2003.

2 *Landmine Monitor: Toward a Mine-Free World: Executive Summary 1999*, International Campaign to Ban Landmines, 1999, p. 22.

3 According to the ICBL, the definition of "landmine victim" are "those who, either individually, or collectively, have suffered physical, emotional, and psychological injury, economic loss or substantial impairment of their fundamental rights through acts or omissions related to mine utilization." Therefore, the ICBL believes that "mine victims include directly impacted individuals, their families, and communities affected by landmines." *Victim Assistance: Contexts, Principles, and Issues*, Position paper of the ICBL Working Group on Victim Assistance, p. 1.

4 Jerry White and Ken Rutherford, *The Role of the Landmine Survivors Network*, in TO WALK WITHOUT FEAR: THE GLOBAL MOVEMENT TO BAN ANTIPERSONNEL LANDMINES, 99, 103-104 (Maxwell A. Cameron et al. eds., Oxford University Press 1998).

THE MYTHS AND REALITIES OF DEMINING

By Colin King
President, Colin King Associates, and
Editor, Jane's Mines and Mine Clearance

"There will never be a simple, universal solution to demining, but there can be continual improvement of equipment and techniques. Understanding that there is more to the mine threat than small plastic objects buried on playing fields is fundamental to that process."

STRUGGLING WITH STEREOTYPES

For an issue that has received such intense media attention, it is surprising how little is really understood about demining. Most of the public seems to be divided between those that believe the landmine problem evaporated with the arrival of the Ottawa Treaty, and those that still believe it will take thousands of years and billions of dollars to solve. Both views stem from sensational media coverage originating within the mine action community and both are, of course, equally wrong.

Among those that do recognize the on-going need for demining, there is often a sneaking suspicion that technology to improve the process already exists. Most know that humanitarian demining is slow and dangerous and see a need to enhance it but, despite years of research, little seems to have changed; why is there still no simple solution to mine clearance?

To answer this question, we need to understand something about mines and minefields. And therein lies the difficulty, because most people feel that they do know something about the problem; they fail to see why lifting such inherently simple munitions (mines) from open ground (minefields) should prove quite so challenging.

The fact is that, while myths and stereotypes are plentiful, very few people understand the realities of mines or the environments in which they are found. These are the most central factors in demining, yet they tend to be dismissed, or at least over-simplified, in the relentless pursuit of innovative solutions. Failing to grasp the fundamentals inevitably creates a false perception of the problem, and all too often the consequent misunderstandings lead to wasted resources and the development of useless equipment.

What follows is a quick overview intended to illustrate the reality of the mine threat. The aim is not to record an exhaustive list of potential problems, but rather to put the typical preconceptions about mines and minefields into a more balanced perspective. If nothing else, it should become clear that the subject is far from simple.

MINES

The Over-Publicized Blast Mine

The universal stereotype landmine image — even within sections of the mine action community — is of a small non-metallic anti-personnel (AP) mine. Many pressure-operated blast mines are plastic cased and do indeed have a minimal metal content, although very few are truly non-metallic or undetectable. It is true that these mines constitute a substantial proportion of the threat and continue to cause serious problems for deminers in many parts of the world. However, since they became the focus of media attention, the threat from other mine types has been largely ignored.

The AP blast mine even has a couple of points in its favor. First, the fuse requires direct and often fairly substantial pressure (typically 20 to 50 lbs); second, the plastic casing creates a very limited fragmentation hazard and is rarely lethal. There are numerous examples of deminers escaping accidental detonations with minor injuries, so for the well-protected operator, adhering strictly to standard operating procedures, AP blast mines are not the greatest danger. If the reliable detection of minimum-metal blast mines were the only problem faced by deminers, clearance rates would be several orders of magnitude greater than they are.

The Lesser-Understood Fragmentation Mine

There are three categories of fragmentation mines: stake mines (so called because they are mounted on short wooden stakes) and bounding (jumping) mines scatter fragments in all directions when they detonate. Claymores are more directional, firing their fragments in a cone or fan-shaped pattern, rather like an immensely powerful shotgun.

To the uninitiated, their high metallic content makes these mines sound almost deminer-friendly in a world with metal detectors, but the reality is very different. To begin with, most fragmentation mines are initiated by tripwires so, unlike the blast mine, direct contact is not required; these are area weapons with area fusing systems. While most blast mines require substantial direct pressure, tripwire actuation may take as little as 1 or 2 lbs. Gone too is the comforting notion of adequate protection. Not only will a mistake with a fragmentation mine invariably result in serious injury or death, but somebody else's mistake — some distance away — may get you killed as well. The detection of tripwires is every bit as important as the detection of minimum-metal mines, yet attracts a tiny fraction of the research effort.

The power of a fragmentation mine makes it virtually impossible to protect a nearby deminer, while the substantial range (in excess of 100 yds) makes it impractical to maintain adequate safety distances. Protective equipment has to be worn, yet offers no guarantee of safety; meanwhile it restricts peripheral vision, increases fatigue, and can make the operator dangerously clumsy. When a fragmentation mine is detonated, whether by accident or intent, the fragments also contaminate a large area, interfering with any subsequent detection or quality assurance process.

Such is the strength of the blast mine stereotype, that people often overlook the fact that many fragmentation mines are placed above ground to maximize their effect. Being visible, once again, ought to make them safer, yet often the lethal range far exceeds the distance at which they can be seen; in other words, they can see you before you can see them. Mines and tripwires placed well above the ground create a three-dimensional threat, complicating both location and demolition. To the vast majority of the scientific community, minefields are seen as strictly two-dimensional planes; this means that, in every sense, a fundamental dimension of the problem is being overlooked.

Anti-vehicle mines

Amid the intense focus on AP mines, it is easy to overlook the fact that anti-vehicle (AV) mines are responsible for a significant proportion of mine-related casualties. They make no distinction between military and civilian vehicles; with up to 100 times the explosive content of an AP mine, the blast from an AV mine can kill at far greater range and creates a lethal 'secondary fragmentation' effect from nearby objects. Even large animals can be heavy enough to initiate AV mines, killing or injuring any nearby people or livestock. It is also important to understand that a number of AV mines fitted with sensitive tripping devices can be actuated by people.

Rules of Mine Laying

It is the indiscriminate use of mines that has the greatest impact on communities, and among the irresponsible users, there are no rules. In addition to routine camouflage and concealment, improvisation makes every aspect of the mine threat unpredictable. Examples include stacking mines, the use of wooden stakes to initiate deep buried mines (to avoid detection), the linking of fragmentation mines to create killing zones, and the use of AP mines to

nitiate far larger charges (such as artillery shells). Additionally, virtually any mine can be booby-trapped, further complicating the clearance process and demanding yet more precautions.

THE ENVIRONMENT

Killing Fields, Not Playing Fields

The stereotype image of a flat, grassy minefield is just as limited as that of the non metallic blast mine. Yet the "football field" image is constantly reinforced by the trials, demonstrations, and publicity shots that invariably take place in near-perfect conditions. Even ignoring the special circumstances of Kuwait's oil lakes, the Middle East's drifting sand dunes, Afghanistan's mountains, or the Falklands peat bogs, minefields are rarely flat and featureless.

To begin with, there is vegetation. Minefields are not harvested or grazed, and many lie in the type of hot, wet environment that promotes the rapid growth of foliage. Most of the world's minefields have been in place for years, and many have become totally over-grown. Not only does this create a physical access problem, but the inability to spot fragmentation mines and tripwires makes overgrown minefields particularly dangerous. In some regions of Cambodia, more than 80 percent of the time spent on manual demining is devoted to the clearance of undergrowth. One of the few areas of real progress in recent years has been the introduction of mechanized vegetation cutters, which gain rapid access to the ground and eliminate the threat from tripwires.

The minefields of the real world are often uneven and cluttered with obstacles, natural and man-made. Rocks of all sizes create problems for the deminer, and even small stones can make probing almost impossible. Most vehicle-borne systems are completely defeated by heavily forested areas, steep or very rocky terrain; even for deminers on foot, access and movement can be difficult or dangerous. From the mountains of Afghanistan, and the steep border regions of Oman, Chile, and Peru, to the forested hills of Bosnia-Herzegovina, Croatia, and Kosovo province, terrain imposes serious limitations on demining procedures. Meanwhile, forces of nature constantly conspire to bring elevated mines down to earth. For example, it may be a rut or pothole just beyond the reach of a detector, flail hammer, or roller, or the bottom of a hill — perhaps well outside the existing minefield boundary.

Water is the most influential of the natural forces, with the capability to erode and dislodge mines, carry them well away from their original locations, and even to bury them again. Water can also create obstacles impassable to any mechanical clearance equipment. In the Jordan Valley, the river has cut 12-foot gullies through mixed (AP and AV) minefields; some mines are left dangling over the cliff edge while others are buried under the collapsed ground. Several miles downstream, the Sea of Galilee must be patrolled daily to check for mines washed up on the beaches. Elsewhere, mine clearance is made almost impossible by tidal action on the beaches of the Falklands, standing water in the rice fields of Cambodia, flooding in the South Chilean islands, and snow in the minefields of Bosnia-Herzegovina.

Battle Areas

Not surprisingly, mines are often found in and around battlefields where the ground has been contaminated with the scrap of war. At best, there will be large quantities of metal present: one shell can produce thousands of steel fragments, and each splinter will be large enough to dwarf the signature from a minimum-metal mine. At worst, the area may be cratered, strewn with wire (barbed wire, communication cables, and the guidance wires from missiles), and littered with unexploded ordnance (UXO). Using metal detection, false alarm rates can exceed 1,000 to one, resulting in a considerable amount of wasted time and effort. In some areas, metal detection simply is not an option.

The detection failure rate among conventional munitions generally exceeds 10 percent, and can be far higher. This means that the quantity of UXO often dwarfs the number of mines, as was the case among the submunition strikes in Kuwait and Iraq, Kosovo and Afghanistan, where huge numbers failed to function. Most types of UXO are less hazardous than mines, but this is not always so — particularly with submunitions.

Urban Areas

The word "minefield" strongly conveys a rural setting, yet some of the most awkward and dangerous minefields are in urban areas. In most cases the presence of buildings, walls, fences, overhead and underground services, paths, and roads makes use of mechanical equipment impossible. These obstacles — with their high metallic content, voids, electric and magnetic fields — also rule out the use of most automated detection techniques. Inside buildings, where virtually any type of booby trap may have been used, clearance techniques have more in common with counter-terrorist procedures than traditional demining. In Afghanistan, the collapse of buildings and subsequent re-mining have created layers of mines — sometimes to a depth of several feet.

Another important consideration is infrastructure — or rather the lack of it. Communications and repair facilities are strictly limited in many of the heavily mined developing countries. There is also an assumption that road and rail networks are universally available for the movement of heavy equipment but, in some regions, routes have become virtually impassable. Even where suitable tracks still exist, few of the bridges can cope with anything more than light trucks. Good mobility, survivability, and sustainability are therefore key considerations for demining equipment in remote regions.

SUMMARY

Any one of the problems encountered during mine clearance can significantly complicate the task — and the list outlined here is far from exhaustive. Unfortunately, in any given area of the real world, a number of problems tend to be superimposed, resulting in a complex, unpredictable tangle of mines, UXO, and tripwires, often in difficult terrain littered with man-made and natural obstacles. There will never be a single solution, because there is no single problem.

Given the practical difficulties faced by deminers, it emerges that much of the technology under development will have, at best, limited application. Sadly, some research has been so misguided that the effort has been totally wasted. The detection of minimum-metal mines, seen by so many as the Holy Grail of demining, is merely one of many problems, and the clearance of flat accessible ground is generally straightforward. Meanwhile, above-ground mines, tripwires, steep slopes, heavy vegetation, and water obstacles rarely feature in equipment test sites and demonstration areas.

One of the greatest obstacles to the enhancement of demining has been, and continues to be, the oversimplification born of deep-rooted preconceptions. At last, there is some effective communication between the scientific and operational communities to ensure that problems are clearly articulated and potential solutions are realistic. There will never be a simple, universal solution to demining, but there can be continual improvement of equipment and techniques. Understanding that there is more to the mine threat than small plastic objects buried on playing fields is fundamental to that process.

The opinions expressed in this article do not necessarily reflect the views or policies of the U.S. government.

AFGHANISTAN: A MODEL FOR A HUMANITARIAN MINE ACTION

The report and the two that follow examine the problem of landmines in Afghanistan, Cambodia, and Mozambique and the role of the United States to help eradicate them. The articles were prepared by ***Hayden Roberts*** *of the Office of Weapons Removal and Abatement in the State Department's Bureau of Political-Military Affairs. Roberts notes that the indiscriminate use of persistent landmines (those that do not self-destruct or self-deactivate) in Afghanistan left the country with perhaps the greatest level of mine contamination in the world. Since 1988 the United States has been helping to rid Afghanistan of its deadly legacy, teaching its people how to avoid landmines, and rendering assistance to landmine accident survivors.*

THE LANDMINE PROBLEM

Afghanistan remains one of the most heavily mined countries in the world. The widespread and indiscriminate use of persistent landmines for more than two decades by many armies and factions has been one of the most brutal aspects of conflict in Afghanistan. Mine contamination affects almost all regions — more than 1,500 villages in 27 of the country's 29 provinces were mine-related problems in 2002, according to the UN. While the UN estimates that the country is infested with five- to seven million landmines, some non-governmental organizations (NGOs) say that, based on their experiences clearing mined areas, the UN estimate is too high. Regardless, Afghanistan remains severely affected. The most heavily mined areas are in the provinces bordering Iran and Pakistan. Mines are located in agricultural fields, irrigation canals, and grazing areas, as well as on roads and in residential and commercial areas. Landmines also encircle major cities, airports, government installations, and power stations. Casualties caused by landmines are estimated at 150 per month.

Following careful analysis of the immense landmine threat in Afghanistan stemming from the Soviet occupation, the United States began demining assistance to Afghanistan in October 1988 by establishing a comprehensive mine clearance program. This program, which was eventually taken over by the UN Mine Action Service (UNMAS) Mine Action Program for Afghanistan (MAPA), is the world's largest and most productive demining effort, and it is staffed almost entirely by Afghans. The MAPA's use of local managers and employees, the transparency of its operations, and its diversified funding sources have served as a model for other humanitarian mine action programs elsewhere. Assistance through the MAPA and other government outlets continued when the United States formally established the U.S. Humanitarian Demining Program (now officially referred to as the Humanitarian Mine Action Program) in October 1993.

U.S. PARTNERSHIPS

U.S. mine action in Afghanistan is being provided directly, as well as through the UN. Contractors and NGOs are supplying technical skills, training, and oversight for demining operations throughout the country. Their focus has been to clear and return land to productive use, provide a safer environment for reconstruction activity, and to educate the general population on the dangers posed by landmines.

Since 1993 the United States has provided nearly $51 million to support humanitarian mine action in Afghanistan. This assistance has paid for mine-risk education programs, minefield surveys and markings,

training of deminers, mine clearance, survivors' assistance, equipment, and mine-detection dogs. Afghanistan is currently the largest recipient of U.S. government mine action assistance in the world. In fiscal year 2003 (FY03), almost 17 percent of U.S. government funding for mine action worldwide ($8.3 million out of $49 million) went to Afghanistan. The Leahy War Victims Fund, adminstered by the U.S. Agency for International Development (USAID), provided $1 million in assistance to support socioeconomic reintegration of mine survivors and other persons with disabilities and for training Afghan orthopedic technicians. The United States awarded a $2.3 million contract to RONCO to teach modern demining skills to local NGOs and to support MAPA and explosive ordnance disposal (EOD) training. The HALO Trust, an experienced non-profit demining organization, received $2.1 million toward mine clearance operations and UNMAS received $2.6 million to fund local NGOs working in Afghanistan. Currently, the Department of State is providing qualified, experienced personnel to assist MAPA to conduct skills transfer and capacity building for the Demining Agency for Afghanistan (DAFA) and other MAPA-supported NGOs. The Department of State is also providing limited equipment to the MAPA.

In addition, the Department of State encourages U.S. and foreign civic associations, nongovernmental organizations, charitable foundations, and corporations to collaborate in public-private partnerships to reinforce humanitarian mine action worldwide. One such partner, a California-based NGO called Roots of Peace, has used money donated by corporations and even American school children to support demining teams in Afghanistan's Shomali Valley. Roots of Peace is taking its good works a step further by supporting the replanting of grapes and other fruits for which the Shomali valley was once famous, so that its farmers may once again sustain themselves.

PROGRAM CONCERNS

By late 2002 MAPA had expanded its operations to 253 mine clearing teams, employing over 7,000 Afghan personnel. However, security has become a growing concern. Most demining operations in Afghanistan have been limited to the area of Kandahar. After a series of attacks on demining staff, the UN Mine Action Center halted demining activities along parts of the road between Kabul and Kandahar on May 8, 2003, and, after another attack in mid-May, it announced that deminers in six provinces would travel with armed escorts provided by local authorities to ensure their safety. Despite security concerns, demining operations have resumed.

U.S. ACCOMPLISHMENTS

U.S. support for humanitarian mine action in Afghanistan enabled more than 1.8 million refugees and internally displaced persons to return to their homes in 2002 alone. In addition, the 23,825,611 square meters of high-priority areas cleared in the first quarter of 2002 have enabled the MAPA to employ more than 9,200 farmers and industrial workers. Agricultural outputs (valued at $14.2 million) and livestock production (valued at $43.4 million) have increased.

Demining operations by HALO Trust in 2002 and 2003 covered a large geographical area and removed thousands of mines from the ground. Through June 2003, HALO demining teams working in the provinces of Kabul, Parwan, Baghlan, Balkh, Kunduz, and Takhar cleared a total of 11, 608 mines. A total area of 1,015,129 square meters was cleared by manual teams, and 279,668 square meters by mechanical teams. In addition, 1,335,748 square meters were surveyed. In June 2003, the United States assisted in the destruction of over 10,000 anti-tank mines in Afghanistan's Kandahar province. These landmines were located in an unsecured ammunition supply point where terrorists had access to the explosive materials. Teams from RONCO, DAFA, and Handicap International Belgium destroyed the mines in nine days according to international standards. Progress has also been made demining along the Kabul-Kandahar road construction project. With funding from international donors, including the United States,

and the UN NGOs have also instituted a number of educational programs and mine-risk education campaigns in various areas. Finally, all known sites affected by unexploded cluster munitions from Operation Enduring Freedom have been, where access has been possible, surveyed and are now being cleared.

CAMBODIA: REDUCING CASUALTIES, RETURNING LAND TO PRODUCTIVE USE

THE LANDMINE PROBLEM

Thirty years of conflict associated with political unrest, wars, and international border disputes have made Cambodia one of the countries most severely affected by landmines and unexploded ordnance (UXO). Some 60-to-70 mine-related accidents are reported each month — one of the highest rates anywhere in the world. Landmines and UXO have accounted for more than 30,000 injuries throughout the country, and in 2002 civilians represented 98 percent of reported mine casualties. The Cambodian Mine Action Center (CMAC) estimates that up to one million landmines are contaminating 2,000 square kilometers of Cambodian soil, and it reports that mines and UXO have contaminated 45.5 percent of the 6,422 villages surveyed.

The northwest, the most heavily mined area, accounts for the largest number of casualties and is therefore the highest demining priority. In addition, two central and southern provinces contain large areas of suspected minefields. Landmines constitute a long-term threat to socio-economic development, limiting living opportunities for Cambodians in rural areas and making it difficult and hazardous to access essential resources and facilities such as water, roads, bridges, and cultivable land. Some of Cambodia's mined regions are still waiting for clearance activities to begin. The best estimate is that the program will need at least another five years of support from the United States and other donor nations before self-sustaining technical, operational, and financial capabilities are fully realized.

U.S. PARTNERSHIPS

Cambodia has received over $31 million in U.S. humanitarian mine action assistance since fiscal year 1993. This funding has augmented financial assistance from the UN Development Program Trust Fund and other international donors, allowing Cambodia to obtain necessary demining training and equipment. The bulk of funding for mine clearance has gone to CMAC, HALO Trust, and Mines Advisory Group (MAG). In fiscal year 2003 alone, the United States provided an estimated $3.2 million in humanitarian demining grants to these organizations for operations in Cambodia.

PROGRAM CONCERNS

Although the humanitarian demining program in Cambodia is mature, the number of mine casualties remains unacceptably high. The rate of casualty decrease, which had been dramatic in the first few years of the program, has not dropped in the past three years. This can be explained by inadequate funding for mine risk education, by population growth, and by new settlements of internally displaced persons and returning refugees, among other factors. CMAC will try to reverse this trend by increasing the number of mine-risk education programs over the next several years.

Adequate funding has always been a problem. A financial crisis hit Cambodia about three years ago and the demining program had to lay off a large percentage of its staff. Although this problem has been largely remedied, continued funding over the long term is a major concern. The United States has played a strong leadership role in moving international donors toward direct funding of CMAC. The United States also insists that an independent on-site company to provide quality assurance monitoring to CMAC.

ACCOMPLISHMENTS

The U.S. government's mine action program in Cambodia seeks to reduce civilian casualties, create conditions for the return of refugees and displaced persons to their homes, reinforce stability, and encourage international cooperation and

participation. The program in Cambodia is accomplishing these goals by providing many mine action initiatives. In addition to training and equipping indigenous personnel, various demining organizations such as CMAC, HALO Trust, MAG (Mines Advisory Group), and RCAF (Royal Cambodian Armed Forces) deminers, in partnership with the United States, have cleared a total of 122 million meters of land in Cambodia.

According to the Landmine Monitor Report 2003, 25 percent of the 2002 landmine casualties required an amputation. The U.S. Agency for International Development (USAID) has invested more than $7 million in Cambodia's prosthetics and rehabilitation programs for landmine-accident survivors. Since 1996, USAID funds have not only enabled Cambodia's prosthetics and rehabilitation programs to provide mobility assistance to nearly 10,000 landmine victims and other people with disabilities, they have also supported the Disability Action Council, a semi-autonomous body that has been delegated authority by the Royal Cambodian Government to oversee all programs related to people with disabilities.

From May 2001 to April 2003, U.S. government funds have facilitated the destruction of 2,500 landmines and the clearance of approximately 2.7 million square meters of land. In addition, U.S. assistance has funded the acquisition of demining equipment, personal protective gear, the training of manual demining teams, and landmine impact surveys. The U.S.-funded heavy equipment, including tractors, vegetation-cutters, and mini-flails, continues to assist deminers greatly, accelerating the pace of their activities by as much as 60 percent. A primary goal of the U.S. program in Cambodia continues to be building up an indigenous capacity to handle clearance requirements.

However, the true measure of mine clearance operations in Cambodia goes wll beyond the total amount of land cleared. The real benefit must be measured in the numbers of Cambodians who have regained safe access to land for resettlement and production. Land once sown with persistent landmines can now be used for agriculture, roads, health centers, and schools that benefit the entire country.

MOZAMBIQUE: REBUILDING LIVES AND INFRASTRUCTURE

THE LANDMINE PROBLEM

Mozambique experienced 26 years of conflict, including a war for independence as well as a civil war, which left the country littered with non-self destructing or "persistent" landmines. The exact number of landmines is not known. However estimates range as high as one million. Several mine action non-governmental organizations (NGOs) with extensive experience argue that this estimate is high and should be lowered, but the lack of landmine location records makes it impossible to give a more precise figure.

While landmines are a problem in all of Mozambique's 10 provinces, the most heavily mined regions are in the north. Virtually every part of Mozambique has experienced negative social and economic consequences from landmines. These "hidden killers" are a public health menace, hinder economic development, and have an adverse impact on farming. Persistent landmines also make it difficult for Mozambicans to install water supply systems. However, the humanitarian threat is becoming manageable, and the U.S. government plans to continue to support mine action efforts until it achieves a landmine-free environment, currently projected for 2009. Clearance of high and medium impact sites is projected to be complete by 2006.

U.S. PARTNERSHIPS

Working with NGOs and in partnership with other donor nations, the United States has supported mine action throughout Mozambique and has been the largest donor, contributing more than $33 million in humanitarian demining assistance to the country since 1992, when the U.S. Agency for International Development (USAID) and the Department of State's Bureau of Population, Refugees and Migration (PRM) supported mine clearance operations as part of the Demobilization/Reintegration Project. USAID continues to focus on rural income generation programs in the agricultural provinces in northern-central Mozambique, which have 55percent of the country's population. The agency has contributed $4 million to support mine clearance along 2,400 kilometers of roads, facilitating post-war resettlement of agricultural land. In addition, the agency has disbursed $1.2 million to fund, along with the Netherlands, HALO Trust's clearance operations in Nampula Province. USAID's Leahy War Victims Fund is underwriting Prosthetic and Orthotic Worldwide Education and Relief (POWER), an NGO, to assist the Mozambican government in producing and maintaining prosthetic devices. Thus far, more than 7,000 amputees (70 percent of the amputee population) have been fitted with prosthetics manufactured in the POWER workshop in Maputo.

Between 2000 and 2002, the Department of State alone contributed about 15 percent of annual donor financing for mine action in Mozambique, to include the donation of mine detecting dogs to the United Nations Development Program (UNDP)/Accelerated Demining Program (ADP); equipment and training for the National Demining Institute (IND) Headquarters staff, and HALO Trust clearance operations in two provinces. At the request of the IND, the Department of State contracted RONCO to conduct high priority demining under IND direction, including clearance of the Sena Rail Line between Beira and the Malawi border. This restored rail line opens large areas of the Zambezi River Valley, key to development of the central provinces, for the export of agricultural products and minerals to the country's second largest city and port of Beira. In addition, the Department of State in partnership with Japan contributed $1 million to the Massingir Dam demining project, which is vital to the country's overall development strategy. The dam is capable of supplying electricity to the area and irrigating nine million square meters of land.

Currently the United States is supporting HALO Trust in the clearance of the Cabo Delgado and Zambezia provinces. Demining in these provinces will facilitate cross-border trade with Tanzania and allow for agricultural development. Clearance of both these provinces will also improve income and food security of farm families. The United States also provides initial and refresher mine action training and equipment for Mozambique's military demining brigade, the only nation to do so.

PROGRAM CONCERNS

The Humanitarian Mine Action Program in Mozambique faced a serious problem in February 2000 when two typhoons caused severe floods and displaced landmines. At the request of the IND, the Department of State provided funding for the U.S. contractor RONCO to address the problem

On June 28, 2002, H.E. Leonardo Santos Simão, Minister of Foreign Affairs and Cooperation, and U.S. Ambassador Sharon P. Wilkinson signed an agreement formally establishing the world's first rapid response demining unit — the Quick Reaction Demining Force (QRDF) to be based in Mozambique. This force is available for immediate use in crisis situations worldwide. This unique force has already deployed to wide acclaim in Sri Lanka as well as to the Sudan and Iraq. The QRDF currently consists of four squads of 10 deminers each and eight mine detection dogs. All demining personnel are Mozambicans who keep their professional skills well honed in demining their homeland between emergency deployments to other countries.

U.S. ACCOMPLISHMENTS

In 2002, NGO mine-clearance operations funded by the United States, removed more than 17,000 landmines and cleared more than 14 million square meters of land. More than 4,500 kilometers of roads have been opened, including 2,400 kilometers in Sofal, Manica, and Zambezia Provinces, reconnecting nearly one million people to their land and communities. Casualty rates in Mozambique have been decreasing, proving that mine risk education programs do work. In 2002, 47 landmine victims were reported, a 58 percent decrease from the 80 reported in 2001. Fifty thousand people have gained access to previously inaccessible natural resources. U.S. support to clearing the northern provinces is improving safety conditions for local populations and, along with USAID projects, enabling residents to increase their incomes.

UNITED NATIONS MINE ACTION SERVICE

The United Nations Mine Action Service (UNMAS) was formed in October 1997 to serve as the UN focal point for mine action. UNMAS is responsible for coordinating all aspects of mine action within the UN system, including providing mine action assistance during humanitarian emergencies and peacekeeping operations.

UNMAS works in the following areas:

- Policy development and coordination, which involves the development of guidelines and strategies for all mine-related issues, in consultation with key stakeholders, including non-governmental organizations (NGOs).

- Assessment and monitoring of the landmine/unexploded ordnance (UXO) problem in affected countries and defining the requirement for international assistance. Various types of monitoring and fact-finding missions have been undertaken to support this responsibility.

- Information management through the development of the Electronic Mine Information Network, known as E-MINE (see below), and through support for the continued development of the Information Management System for Mine Action (IMSMA) by the Geneva International Centre for International Demining (GICHD). This system is in place in a growing number of countries and programs, providing an effective tool to coordinate information about the local, national, and regional landmine problem.

- Quality management and technology through the development, maintenance, and promotion of technical and safety standards for mine action (see International Mine Action Standards below) in partnership with the GICHD.

- Advocacy and convention implementation. UNMAS is an active advocate of both the Antipersonnel Mine Ban Convention and Amended Protocol II of the Convention on Conventional Weapons (CCW).

- Resource mobilization. The vast majority of UN mine action activities are funded from voluntary donor contributions. As the focal point for UN mine action, UNMAS coordinates UN resource mobilization efforts and manages the Voluntary Trust Fund for Assistance in Mine Action (VTF). It issues a Portfolio of Mine Related Projects annually, which outlines the broad range of mine action programs and projects supported by the various entities of the United Nations system, and which aims to assist in mobilizing the voluntary contributions required for their successful implementation.

INTERNATIONAL MINE ACTION STANDARDS

UNMAS is the office within the United Nations Secretariat responsible for the development and maintenance of International Mine Action Standards (IMAS). These standards establish the principles that should be followed to improve the safety and efficiency of mine action programs. They do not have authority until they are adopted at the country program level. Governments of mine-affected countries can adapt the standards to meet national requirements, rules, and codes of practice. Donors can use the standards as minimum contractual requirements when allocating resources for mine action projects and programs, and the United Nations and NGOs can use the international standards as guidelines for the safe and efficient implementation of mine action in the field.

The first International Standards for Humanitarian Mine Clearance Operations were issued by UNMAS on behalf of the United Nations in March 1997. In 1999, the Geneva International Centre for Humanitarian Demining (GICHD) was commissioned by the United Nations to conduct a review of these standards, taking into account lessons learned and new procedures. The resulting International Mine Action Standards were made available in October 2001. They comply with a number of international regulations, conventions, and treaties, particularly the Antipersonnel Mine Ban Convention and the Amended Protocol II to the CCW. They will progressively cover areas of mine action not previously addressed such as mine risk education, mechanical clearance, and dog detection of mines.

THE INFORMATION MANAGEMENT SYSTEM FOR MINE ACTION AND THE ELECTRONIC MINE INFORMATION NETWORK

Information management is a central aspect of mine action. This is vital because of the broad scope of the landmine problem and the number of issues and organizations involved. UNMAS is responsible for coordinating the collection, analysis, and dissemination of landmine-related information, and for the development of mine action information management systems. It has entered into a collaborative agreement with the GICHD to support this responsibility and to develop an Information Management System for Mine Action (IMSMA) designed for programs in the field. Under the arrangement, the GICHD is responsible for the development of the IMSMA software, implementation and training in the field, technical support, and project management. UNMAS is responsible for providing guidance to the Centre for the definition of the overall policy, scope, content, functionality, and deployment requirements of IMSMA.

Another important information management tool is the Electronic Mine Information Network (E-MINE). E-MINE is a public and freely accessible website found at www.mineaction.org. The site has been designed to support field operations through the dissemination of technical information and documents, as well as global coordination and resource mobilization.

RAPID RESPONSE PLAN

In humanitarian situations and peacekeeping operations, UNMAS is responsible for ensuring that there is a coordinated UN mine action response. This often requires the immediate deployment of personnel, followed by equipment, to ensure that the response is coordinated effectively. UNMAS is developing, in conjunction with other UN agencies, NGOs, and other partners, a Rapid Response Plan, which will meet the requirements of emergency situations, and other scenarios where the rapid deployment of personnel, equipment, and a mine action capacity is required.

COUNTRIES/REGIONS SUPPORTED BY UNMAS

UNMAS cooperates with all UN departments and agencies concerned with humanitarian emergencies and peacekeeping operations, particularly UNDP (UN Development Program), UNICEF (UN Children's Fund), and UNOPS (UN Office for Project Services), and with a number of international and national NGOs specializing in mine action. UNMAS managed, in partnership with UNOPS, the successful program in Kosovo from its initiation in 1999 until its completion in December 2001.

As of January 2003, UNMAS is supporting mine action in: Afghanistan, The Democratic Republic of the Congo, The Temporary Security Zone between Ethiopia and Eritrea, Kosovo (FRY), South Lebanon, Sudan, and The Former Yugoslav Republic of Macedonia.

Source: The U.N. Mine Action Service Wegpage at www.mineaction.org.

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KEY INTERNET SITES

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U.S. Agency for International Development: Humanitarian Assistance: Leahy War Victims Fund
http://www.usaid.gov/our_work/humanitarian_assistance/the_funds/lwvf/index.html

U.S. Centers for Disease Control and Prevention: Landmine Injury Prevention
http://www.cdc.gov/programs/global3.htm

U.S. Department of Defense: Defense Security Cooperation Agency: Office of Humanitarian Assistance and Mine Action
http://www.dsca.osd.mil/programs/HA/HA.htm

U.S. Department of Defense: Humanitarian Demining Training Center: U.S. Humanitarian Mine Action Programs
http://www.wood.army.mil/hdtc/ushma.html

U.S. Department of State: Bureau of Political-Military Affairs: Office of Weapons Removal and Abatement
http://www.state.gov/t/pm/wra/

NON-GOVERNMENT SITES

The Asia Foundation
http://www.asiafoundation.org/

CARE: Landmines: The Hidden Menace
http://www.careusa.org/newsroom/specialreports/land_mines/index.asp

Clear Path International
http://www.clearpathinternational.org/

Geneva International Center for Humanitarian Demining
http://www.gichd.ch/

The HALO Trust
http://www.halotrust.org/

Humpty Dumpty Institute: Mine Action
http://www.humptydumpty.net/nmag.asp

International Committee of the Red Cross: Landmines
http://www.icrc.org/eng/mines

Landmine Survivors Network
http://www.landminesurvivors.org/

Landmines Struggle Center
http://www.lsce98.8m.com/lsce98/index.html

The Marshall Legacy Institute
http://www.marshall-legacy.org/index.html

Mine Action Information Center at James Madison University
http://maic.jmu.edu/

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http://www.nato.int/pfp/trust-fund.htm

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http://www.landmines.org/

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