

EXPOSING THE SOURCE

U.S. Companies and the Production of Antipersonnel Mines

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I. SUMMARY

Today I am launching an international effort to ban antipersonnel landmines....The United States will lead a global effort to eliminate these terrible weapons and to stop the enormous loss of human life.—President Bill Clinton, May 16, 1996

Despite the Clinton Administration's attempts to lay claim to the mantle of global leadership in the effort to ban antipersonnel landmines, the United States has refused to ban—or even formally suspend—the production of antipersonnel mines. From 1985 through 1996, the U.S. produced more than four million new antipersonnel mines. At the same time that President Clinton was urging the rest of the world to move toward the total elimination of the weapon, the Pentagon was awarding contracts to dozens of U.S. companies to manufacture antipersonnel mines to replace those used in the Persian Gulf War. The U.S. currently has a stockpile of 15 million antipersonnel mines, although three million older mines are scheduled to be destroyed by the end of 1999.

In this report, Human Rights Watch—as part of a coordinated national effort to promote a total ban on antipersonnel landmines—identifies forty-seven U.S. companies that have been involved in the manufacture of antipersonnel mines, their components, or delivery systems. That is more than twice the number of companies previously acknowledged by the Department of Defense (DoD). This report is to be the basis for a "stigmatization" campaign by the U.S. Campaign to Ban Landmines (USCBL) to press all companies that have been involved in antipersonnel mine production in the past to renounce any future activities related to antipersonnel mine production.¹

As a result of our research and dialogue with the manufacturers, seventeen of the forty-seven companies have already agreed to Human Rights Watch's call to renounce any future involvement in antipersonnel mine production. Motorola was the first, and the most visible, to renounce in June 1996. Others include Hughes Aircraft, Olin Ordnance, Kemet, Microsemi, AVX, and Dyno Nobel.

Some of the largest companies that have declined to renounce future involvement in antipersonnel landmine production are General Electric, Alliant Techsystems, Lockheed Martin, Raytheon, and Thiokol. Some companies that have declined to renounce future involvement in production are now involved in developing technology to detect, remove, and destroy uncleared antipersonnel mines, including Lockheed Martin, Raytheon, Mohawk, and Ensign-Bickford.

In the U.S., no single company is responsible for the production of antipersonnel mines from beginning to end. The Pentagon will usually award a contract to one large company which will in turn buy component parts from many other companies. Final assembly of mines is often done in government-owned, contractor-operated Army Ammunition factories. Thus, the landmine industry in the U.S. consists more of component suppliers than "mine producers" per se. Some companies that have supplied components for antipersonnel mines objected to their inclusion in this report by claiming that they are not "mine producers."

Human Rights Watch has identified many electronics companies that have sold millions of tiny components for use in antipersonnel mines. Many of these components can also be used in any number of consumer appliances and products, from pagers to refrigerators. Human Rights Watch has asked U.S. companies to make every effort to insure that their products are not used in antipersonnel mines, so that the same chips that power children's computers in the U.S. do not end up in landmines that might one day blow up children in another country.

¹ The USCBL, a coalition of more than 180 non-governmental organizations across the country, is part of the International Campaign to Ban Landmines (ICBL), which has been nominated for the 1997 Nobel Peace Prize. Human Rights Watch serves as the chair of the Steering Committee of the USCBL.

The forty-seven companies are located in twenty-three states. Six of the companies are foreign-owned. Individual companies have profited from landmine contracts worth hundreds of millions of dollars. Alliant Techsystems, in Hopkins, Minnesota, appears to be the largest recipient of landmine production contracts. DoD records show that Alliant won \$336,480,000 in antipersonnel and antitank landmine production contracts from 1985 to 1995. Alliant is also the parent company of Accudyne Corporation, in Janesville, Wisconsin, which reaped an estimated \$150 million in landmine production contracts in the same time period.

United States Policy

The Clinton Administration's actions with respect to banning antipersonnel mines have failed to meet its rhetoric. The U.S. has steadfastly refused to ban or formally suspend antipersonnel mine production even though President Clinton in 1994 was the first world leader to call for the "eventual elimination" of antipersonnel landmines.

In a major landmines policy statement on May 16, 1996, President Clinton said the U.S. would "lead a global effort" to ban antipersonnel mines, but his announcement amounted to little more than a restatement of existing plans and policies. The U.S. would no longer produce and would destroy most of its stockpile of older "dumb" mines, while keeping all existing stocks and maintaining the right to produce "smart" mines. Dumb mines can remain deadly for decades, while smart mines are supposed to "self-destruct" (automatically blow up) after a pre-set period of time.

In November 1996 the U.S. introduced a United Nations General Assembly resolution urging nations "to pursue vigorously" an international ban treaty "with a view to completing the negotiation as soon as possible." The resolution also called on governments unilaterally to implement "bans, moratoria or other restrictions" on production, stockpiling, export and use of antipersonnel mines "at the earliest date possible."² The U.N. General Assembly passed the resolution on December 10 by a vote of 156-0, with ten abstentions. Yet the U.S. has not heeded its own call by putting in place a moratorium or ban on mine production.

It is a step the U.S. could easily take: several large contracts for antipersonnel mines were completed in late 1996, and it does not appear that there is any production of antipersonnel mines currently underway in the U.S. Moreover, according to a Pentagon document, there are no plans for antipersonnel mine procurement at least through Fiscal Year 2004.³

Many of the U.S.'s close allies, including key NATO partners such as France, Germany, and Italy, have already banned or suspended production of antipersonnel mines. Some of the other nations that have halted production are Austria, Belgium, Canada, Denmark, Finland, the Netherlands, Norway, Portugal, South Africa, Sweden and Switzerland.

On January 17, 1997, the Clinton Administration announced that the U.S. will seek negotiations on a worldwide treaty banning production, use, stockpiling and transfer of mines in the U.N. Conference on Disarmament (CD) in Geneva, Switzerland. The decision was criticized by the U.S. Campaign to Ban Landmines as an effort to avoid rapid progress toward a ban, given the notoriously slow pace of the CD. The USCBL has been urging the Clinton Administration to support the diplomatic initiative sponsored by Canada, Austria, Belgium and Norway aimed at the signing of a comprehensive ban treaty in December 1997.

The Administration also announced that it would turn its moratorium on mine exports into a permanent ban—a step warmly welcomed by the USCBL—and that it would cap the U.S. antipersonnel mine stockpile at the current level of inventory. Strangely, however, the Administration refused to reveal the current stockpile figure, saying only "several million." Finally, in April, DoD pegged the total stockpile at fourteen million, including ten million smart mines and four million dumb mines. Not included in that total are nearly one million Claymore mines, which the Pentagon now

² U.N. General Assembly resolution 51/149.

³ Letter from George R. Schneider, Acting Director, Tactical Warfare Programs, Acquisition and Technology, Office of the Undersecretary of Defense, to Representative Lane Evans, October 27, 1994.

prefers to call command-detonated munitions, rather than landmines. (See Appendix D). Since three million dumb mines are slated for destruction, the official inventory cap number is eleven million. The other one million (non-Claymore) dumb mines are to be used only in Korea.

Company Responses

After identifying the forty-seven companies, Human Rights Watch sent each a letter informing them of our findings and calling on them to renounce voluntarily future involvement in antipersonnel landmine production. (See Appendix C). Thirty-four responded, with seventeen stating that they would commit themselves to no future involvement in antipersonnel landmine production. Many company representatives initially expressed surprise or denied involvement, but eventually acknowledged the validity of our evidence. Several companies took immediate steps to end their involvement when Human Rights Watch raised with them the humanitarian consequences of antipersonnel mine production. It does not appear that landmine activities constitute a significant portion of income for any U.S. company.

The seventeen companies that have told Human Rights Watch that they will no longer be involved in antipersonnel landmine production are: ASC Capacitors (Nebraska), AVX Corp. (South Carolina), Compensated Devices, Inc. (Massachusetts), Dyno Nobel, Inc. (Utah), Hughes Aircraft (Virginia), Kalmus and Associates, Inc. (Illinois), Kemet Corp. (South Carolina), Mathews Associates, Inc. (Florida), MascoTech (Michigan), Microsemi Corp. (Arizona), Motorola, Inc. (Illinois), Olin Ordnance (Florida), Plastics Products Co., Inc., (Minnesota), S&K Electronics (Montana), Siliconix, Inc. (California), S W Electronics & Manufacturing Corp. (New Jersey), and TLSI, Inc. (New York).

The decision by seventeen big and small companies to renounce future involvement in mine production is a landmark event in the movement to achieve a total antipersonnel mine ban in the U.S. Human Rights Watch will stay in touch with each company to monitor their new anti-mine codes of conduct.

Motorola was the first company to renounce publicly future involvement in antipersonnel mine production. In July 1996, Motorola stated: "We will do everything reasonably possible to make sure that Motorola does not knowingly sell any component part that is intended for use in an antipersonnel mine... (W)e believe that we have an obligation and a unique opportunity to proactively support the elimination of antipersonnel mines."⁴ Encouragingly, Motorola also took pains to think through how best to implement and to insure institutional fealty to the new policy. It drew up a forty-page internal company guideline and posted it to Motorola subsidiaries. The USCBL applauded Motorola's decision, saying, "Motorola has now emerged as the best kind of industry leader. They have set the standard and we hope other companies will follow suit. Motorola deserves high praise for its recognition of the humanitarian disaster caused by mines, and especially its willingness to act on its own to help stem the crisis."⁵

Seventeen companies declined to renounce future involvement in antipersonnel mine production. Company statements came from: AAI Corp. (Maryland), Allen-Bradley (Texas), Alliant Techsystems, Inc. (Minnesota), also representing mine producers Accudyne Corp. (Wisconsin), and Ferrulmatic, Inc. (New Jersey), CAPCO, Inc. (Colorado), Dale Electronics, Inc. (Nebraska), Ensign-Bickford Industries, Inc. (Connecticut), General Electric Company (Connecticut), Lockheed Martin Corp. (Maryland), Mohawk Electrical Systems, Inc. (Delaware), Nomura Enterprise, Inc. (Illinois), Parlex Corp. (Maryland), Quantic Industries, Inc. (California), Raytheon (Massachusetts), Thiokol Corp. (Utah), and Vishay Intertechnology, Inc. (Pennsylvania).

Thirteen companies did not respond in writing to Human Rights Watch: Action Manufacturing Co. (Pennsylvania), Aerospace Design, Inc. (California), Amron Corp. (Wisconsin), BI Technologies (California), Consolidated Industries, Inc. (Alabama), Day & Zimmerman, Inc. (Pennsylvania), EMCO, Inc. (Alabama), Formworks

⁴ Motorola company notice to employees, received by Human Rights Watch on July 17, 1996.

⁵ U.S. Campaign to Ban Landmines Press Release. "Motorola: No More Components for Landmines." August 26, 1996.

Plastics, Inc. (California), Fort Belknap Industries (Montana), Intellitec (Florida), Mason & Hangar/Silas Mason Co., Inc. (Kentucky), Primetec, Inc. (Florida), Unitrode Corp. (New Hampshire).

Recommendations

The Clinton Administration should declare an immediate ban on production of all types of antipersonnel mines. It should release detailed information about its current stockpile of antipersonnel mines, and should develop a plan for destruction of all “smart” mines as well as “dumb” mines. Most importantly, the U.S. should support the Canadian-led diplomatic initiative aimed at the signing of a comprehensive ban treaty in December 1997.

Human Rights Watch calls on U.S. companies to take immediate steps to disassociate themselves from future involvement in antipersonnel mine production. We congratulate the renouncing companies for responding to our concerns and for showing strong moral leadership in their respective industries. We urge the other companies to reconsider their positions and to join the rapidly growing international movement toward a ban on antipersonnel mines. There is an urgent need for the private sector to initiate voluntary codes of conduct, either at an industry-wide level or at the company level, to stop the supply of landmine components. Designing, developing and making antipersonnel mines, or supplying component parts for their use, is immoral in light of the devastating impact caused by these indiscriminate “hidden killers.”

Human Rights Watch encourages the more than 180 nongovernmental organizations in the USCBL, as well as concerned citizens across the country, to utilize this report as part of a stigmatization campaign to get U.S. corporations out of the antipersonnel landmine business. We urge supporters of an international ban on antipersonnel mines to send statements of support to companies which have renounced future involvement in mine production, and to send statements of protest to those which have not. Human Rights Watch encourages citizens to take actions such as divestment and shareholder resolutions of protest.

II. THE GLOBAL LANDMINE CRISIS

I lost both my legs in an explosion in 1982 near the Thai-Cambodian border. I had to chop off part of my own leg with an axe to reduce the weight so my friend could carry me thirty kilometers to a medical post.—Tun Channareth, who in 1982 stepped on an antipersonnel mine

The mine has been designed with a view to disable personnel. Operating research has shown that it is better to disable a man than to kill him. A wounded man requires attention, conveyance and evacuation to the rear, thus causes disturbances in the traffic lines of the combat area. Also, a wounded person has a detrimental psychological effect on his fellow soldiers.

—Pakistan Ordnance Factories brochure, “Technical Specifications for Mine Anti-Personnel (P4 MK2)”

Global landmine contamination has been recognized by the international community as a pressing humanitarian crisis. In some sixty-eight nations, fields, deserts, forests, roads and waterways are littered with an estimated 110 million mines. Antipersonnel mines claim a victim every twenty minutes—more than 26,000 each year. Almost all of the killed and maimed are civilians, often women and children, nearly always after the cessation of active hostilities. Mines have an average life span of fifty to one hundred years. Many are nearly undetectable because of their low metallic content. Some of the most popular varieties of antipersonnel mines cost as little as \$3.

Antipersonnel mines are indiscriminate hidden killers and constitute one of the great public health hazards of the late twentieth century. For millions of people, antipersonnel mines are the biggest influence in their daily routine because every step they take could literally be their last. Antipersonnel mines frustrate post-war reconstruction in a score of countries. Resources which should be used to rebuild schools and hospitals are instead diverted to landmine

clearance, which the U.N. has estimated at \$300 to \$1,000 per landmine, a crushing financial burden for the world's poorest nations.

Historically, the U.S. has been one of the world's most influential exponents of landmine warfare doctrine, as well as one of the world's major landmine producers and exporters. Antipersonnel mines made in the U.S.A. are being dug out at great financial cost and personal risk in the fertile coffee plantations of Nicaragua, the sandy loams of Somalia, the bomb-pitted paddies of Vietnam, and along southern Africa's old confrontation lines. From 1969 through 1992, the U.S. exported 4.4 million antipersonnel mines.

DoD estimates that in this century 100,000 Americans have been killed or injured in landmine incidents, the equivalent of nearly seven military divisions.⁶ Landmines caused 33% of all U.S. casualties in Vietnam; 28% of U.S. deaths were attributed to mines.⁷ Startlingly, military records from the Vietnam era report that 90% of all mine and booby-trap components used by the National Liberation Front against U.S. troops were of U.S. origin.⁸ In the Persian Gulf War in 1991, 34% percent of all U.S. casualties were caused by landmines.⁹

Behind the dry statistics are the faces of the victims: Jerry White, an American student trekking in northern Israel, lost a leg when he stepped on an antipersonnel mine in 1984; a ten-year-old Palestinian shepherd was killed in April 1995 while tending his flock in the Gaza Strip; two U.S. medical officers on honeymoon were blown up in the Sinai in June 1995; four children were killed and five wounded when the landmine they were playing with in the Rwandan capital, Kigali, exploded in October 1995; two Portugese and one Italian peacekeeper were killed, and seven others wounded, when an antipersonnel mine detonated in Sarajevo in January 1996.

With the end of the Cold War, humanitarian organizations and peacekeepers have raced against time to stabilize former war zones but instead have found themselves penned in and logistically paralyzed by millions of hidden killers. The terrible irony of modern day peacekeeping for U.S. troops is that their lives are sometimes threatened by landmines manufactured, sold and shipped out from their own nation a few years or a generation ago. U.S. mines have been identified during clearance operations in old and new global hot spots like Rwanda, Lebanon, Iraq, Nicaragua, Laos, Vietnam, Cambodia, Mozambique, Somalia and Angola.

While the notion of ten million landmines in Angola or three million in Bosnia is stunning, these dramatic sums are almost beside the point. The number of landmines sown is not as important as the landmine infestation per square mile. For as long as one landmine remains undetected in a field in Angola, and as long as five landmines sit in wait in a devastated city block in Grozny, Chechnya, there can be no peace of mind for the hapless and traumatized civilians living there. Crops rot in fields made fallow by only one landmine and in towns the fear engendered by landmines can force the closure of buildings, streets and sometimes entire neighborhoods.

⁶ Harry N. Hambric and William C. Schneck, *The Antipersonnel Mine Threat: A Historical Perspective*, Symposium on Technology and the Mine Problem, Naval Postgraduate School, Monterey, CA, November 18-22, 1996, p. 3.

⁷ Ibid., p. 15. In some cases, mines took an even higher toll. For example, during the last six months of 1968, 57% of all casualties suffered by the 1st Marine Division were from mines and booby-traps. H.E. Dickenson, Chief of Staff, 1st Marine Division (Rein), "Standard Operating Procedures for the 1st Marine Division: Countermeasures Against Mines and Booby-Traps," San Francisco, Department of the Army Office, Chief of Engineers, February 1, 1969, p. H-39.

⁸ Ibid.

⁹ Hambric and Schneck, p. 15.

It is a sadly familiar story in at least sixty-eight countries. For example, after intensive fighting in and around the Afghan capital, Kabul, during the winter of 1994-95, there was a dramatic upsurge in antipersonnel mine casualties when refugees trekked back in the spring to reclaim neighborhoods which, unknown to them, were booby-trapped and strewn with landmines. Fifteen hundred civilians were killed and wounded in the month of April 1995, reported the International Committee of the Red Cross.¹⁰ Afghanistan's Mine Clearance Planning Agency (MCPA) reported that 8,000 civilians were being killed or wounded in mine incidents each year, a rate of twenty to twenty-five per day.¹¹ U.N. deminers have identified fifty types of antipersonnel landmines in Afghanistan, the most ever recorded in one country.¹²

Antipersonnel mines are also weapons of terror employed directly against civilians. The destruction of the Croat village of Lovas in October 1991 at the hands of Serb paramilitaries is a case in point. After being rounded up and taken to a clover field, "[fifty local men] were made to advance through the field, holding each other by the hand. At this point they realized they were being driven through a minefield. When they caught sight of a taut wire, they stopped. They were then ordered to pull it with their hands. At that moment, one of them stumbled on a trip-wire mine; a series of explosions followed, interspersed with machine-gun shots from behind....Some of the men were so badly wounded that they begged to be killed. Seventeen men were killed by mines or shot in the back."¹³

Human Rights Watch believes that any use of antipersonnel mines is a violation of existing international humanitarian law. The weapon is inherently indiscriminate, and its use clearly fails to meet the proportionality test of humanitarian law: the short-term military benefits are far outweighed by the long-term human and socio-economic costs.¹⁴

III. U.S. ANTIPERSONNEL MINE PRODUCTION, STOCKPILES AND EXPORTS

Despite the dangers posed by antipersonnel mines to U.S. troops in combat and on peacekeeping missions, the Pentagon clings to its assumptions about the military benefits of the weapon. Many in the U.S. military establishment are eager to reverse the U.S. policy calling for a total ban, believing that a ban on dumb mines is sufficient. The U.S. appears to be taking a "go slow" approach to banning antipersonnel mines because of concerns expressed by some in the military that alternatives to antipersonnel mines have not yet been developed.

¹⁰ Cited in the U.N.D.H.A Central Landmines Database, *Afghanistan Country Report* (New York: United Nations, 1996).

¹¹ Shawn Roberts and Jody Williams, *After the Guns Fall Silent: The Enduring Legacy of Landmines* (Vietnam Veterans of America Foundation, Washington, D.C., 1995), p. 66.

¹² U.N.D.H.A., *Afghanistan Country Report*.

¹³ Amnesty International, *Yugoslavia: Further Reports of Torture and Deliberate and Arbitrary Killings in War Zones* (London, 1992), pp. 3-4.

¹⁴ For a full legal analysis of antipersonnel mines, see Human Rights Watch Arms Project and Physicians for Human Rights, *Landmines: A Deadly Legacy* (Human Rights Watch, New York, 1993), pp. 261-318.

Yet, fifteen distinguished retired U.S. military officers told President Clinton in a full-page open letter in the *New York Times*: “Given the wide range of weaponry available to military forces today, antipersonnel landmines are not essential. Thus, banning them would not undermine the military effectiveness or safety of our forces, nor those of other nations.” They also said, “We view such a ban as not only humane, but also militarily responsible.” Those who signed include General David Jones, former Chairman of the Joint Chiefs of Staff; General Norman Schwarzkopf, Commander Operation Desert Storm; General John Galvin, former Supreme Allied Commander Europe; Lt. General James Hollingsworth, former Commander of U.S. forces in Korea; and Lt. General Robert Gard, former President, National Defense University.¹⁵

Production

Historically, the United States has been one of the world's biggest producers and exporters of antipersonnel landmines. The U.S. has produced tens of millions of antipersonnel mines. Until the mid-1970s, these were nearly all so-called “dumb” mines—those that can remain buried in the ground for decades, waiting blindly for a soldier or a civilian to step on them.

Following the disastrous U.S. experience with antipersonnel mines in Vietnam, the Pentagon decided to develop and procure so-called “smart” mines, the most notable feature of which is a self-destruct mechanism that will cause the mine to automatically blow up after a pre-set period of time (usually four to forty-eight hours). Most of these mines were also designed to be “scattered” (dropped from helicopters or planes, or fired from artillery or other systems) rather than hand-emplaced. Production of dumb mines went into decline and billions of dollars were poured into corporate research and development laboratories in the 1970s and early 1980s to develop smart landmine systems.¹⁶ In a 1983 advertising brochure one company described the new FASCAM (“Family of Scatterable Mines”) as “a family of target-activated munitions which will revolutionize the modern battlefield. Yes, these mine systems...have the potential to change battlefield methods more than any innovation since guided missiles.”¹⁷ A variety of smart landmines were used during the 1991 Persian Gulf War.¹⁸

¹⁵ *New York Times*, April 3, 1996. These were not the first military men to speak out against mines. “No one likes mines,” wrote Captain Richard W. Smith in the *Marine Corps Gazette* of October 1954. “The engineers may admire their efficiency and the commanding general may appreciate the principles of their employment, but the fact remains that those who know them best hate them with a passion. The unexpectedness of their damage, the high percentage of lost limbs, their tendency to strike at friend and foe alike, and their limiting effect on the Marines’ time honored offensive tactics—all these add up to make it the stepchild at the family reunion.”

¹⁶ DoD spent \$1.68 billion on scatterable landmine systems in 1983-92 (U.S. Army, Information Paper, “Anti-Personnel Land Mine Procurement and Production,” 1992). This figure also includes the antitank mine components of combined antitank/antipersonnel mine systems. It is believed that significant research and development contracts were awarded in the 1970s.

¹⁷ Honeywell brochure of FASCAM products, October 1983.

¹⁸ Arguments in favor of the military utility of “scatterable” mines have been challenged by retired military commanders like former Marine Corps Commandant General Alfred Gray, Jr., who said: “We kill more Americans with our mines than we do anybody else. We never killed many enemy with mines.... What the hell is the use of sowing all this (airborne scatterable mines) if you’re going to move through it next week or next month?... I know of no situation in the Korean War, nor in the five years I served in Southeast Asia, nor in Panama, nor in Desert Shield-Desert Storm where our use of mine warfare truly channeled the enemy and brought them into a destructive pattern.... We have many examples of our own young warriors trapped by their own minefields or by the (old) French minefields (in Southeast Asia)—we had examples even in Desert Storm.” Speech to the American Defense Preparedness Association’s Mines, Countermine and Demolitions Symposium, Asheville, NC, September 7-9, 1993.

There is an estimated five billion dollars worth of scatterable smart landmine equipment now in U.S. stockpiles.¹⁹ According to one source, one company—Alliant Techsystems—produced eight million of one type of smart antipersonnel mine—the ADAM—in a fifteen year period.²⁰ New orders were placed by the Pentagon to replace antipersonnel mines used in the 1991 Persian Gulf War, and those contracts were completed by the end of 1996. Human Rights Watch believes that there has been no production of antipersonnel mines in the U.S. since November 1996.²¹

In the U.S., no single company is responsible for the production of an antipersonnel landmine from beginning to end. The Pentagon will usually award a contract to one large manufacturer, like Alliant Techsystems, which in turn will buy component parts from many other companies. Final assembly of mines is often done in government-owned, contractor-operated factories.

Alliant Techsystems was the primary contractor on the two most recent antipersonnel mine contracts, for Gator and Volcano mine systems. In August 1996 Alliant CEO Richard Schwartz informed Human Rights Watch: "Since Desert Storm, production of self-destruct, self-deactivating mines has been limited to replenishing inventories used during that conflict, and we anticipate no future production of self-destruct, self-deactivating mines." He said the Pentagon has requested Alliant to reconfigure the Volcano landmine system solely to an antitank capacity, instead of its current mix of antitank and antipersonnel mines. Production of the Gator system was completed in late 1996.²²

On January 9, 1997, Assistant Secretary of Defense H. Allen Holmes stated: "At this time, the Department is not conducting any research and development efforts for antipersonnel landmines. In light of the President's direction on antipersonnel landmines, the Department does not envision a need to conduct research and development for antipersonnel landmines in the future."²³ It should be noted that DoD has earmarked continued funding for self-destruct antitank mines.

Stockpiles

¹⁹ Charles Digney, Deputy Program Manager, U.S. Army Mines, Countermine and Demolitions, "Program Opportunities," presentation to the ADPA Symposium, Asheville, NC, September 7-9, 1993.

²⁰ William M. Arkin, "Military Technology and the Banning of Land Mines," presentation to the 1st International Campaign to Ban Landmines NGO Conference on Antipersonnel Landmines, London, May 24, 1993, p. 6.

²¹ According to a Pentagon document, there is no planned production of antipersonnel mines in the U.S. at least through fiscal year 2004. Letter from George R. Schneiter, Acting Director, Tactical Warfare Programs, Acquisition and Technology, Office of the Undersecretary of Defense, to Rep. Lane Evans, October 27, 1994.

²² Letter from Alliant Techsystems, Inc., President and CEO Richard Schwartz to Human Rights Watch, August 22, 1996.

²³ Letter from Assistant Secretary of Defense for Special Operations and Low Intensity Conflict H. Allen Holmes to Senator Patrick Leahy and Representative Lane Evans, January 9, 1997. The letter also states: "In implementing the President's decision, the Department has provided additional funds for the FY 1998-2003 time period to undertake an aggressive effort that expands our research and development program for humanitarian demining and establishes a new program for alternatives to antipersonnel landmines."

In April 1997, the Pentagon announced that there are fourteen million antipersonnel mines in U.S. stockpiles, including ten million “smart” self-destructing mines and four million “dumb” non-self-destructing mines. Three million non-self-destructing mines are slated for destruction, with the other one million reserved for use in Korea. The inventory cap announced by Clinton in January 1997 will thus be eleven million antipersonnel mines.²⁴ Not included in any of those numbers are nearly one million Claymore mines which the Pentagon now classifies as command-detonated munitions rather than mines. (See Appendix D). The stockpile number was apparently revealed in response to the landmines resolution adopted by the Organization of American States in June 1996, and endorsed by the U.S., which calls on all states in the hemisphere to make public details of their mine inventories.²⁵

Until April, DoD was unable, or unwilling, to account for the precise number of antipersonnel mines in its inventories. In announcing the cap on inventories on January 17, 1997, both the White House and Pentagon spokespersons would be no more specific than “several million.”²⁶ The only previous public statement regarding overall antipersonnel mine totals known to Human Rights Watch was a 1996 U.S. Army Humanitarian Demining Project symposium paper indicating that there are 12.4 million antipersonnel mines in the national arsenal, including six million M14, M16, and M18A1 Claymore dumb mines, and 6.4 million ADAM, Gator, Volcano, GEMSS, PDM, and MOPMS smart mines.²⁷

However, an Army official who helped prepare the document told Human Rights Watch that the numbers should not be treated as definitive.²⁸ A 1994 DoD document gave a detailed breakdown of nearly 6.3 million dumb mines in the U.S. inventory, not including Claymore mines.²⁹ The same document noted that the U.S. antipersonnel mine inventory, not including Claymores, consisted of 37% dumb and 63% smart mines,³⁰ which would translate into a stockpile of eighteen million mines: nearly eleven million smart mines, more than six million dumb mines, and nearly one million Claymore mines.³¹

²⁴ This information was first provided to Human Rights Watch in a telephone interview with Robert Cowles, Demining Office, Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict, April 8, 1997.

²⁵ OAS Resolution AG/RES. 1411 (XXVI-0-96), “Western Hemisphere as an Antipersonnel Landmine Free Zone,” June 7, 1996.

²⁶ Transcript, White House, Office of the Press Secretary, Press Briefing, January 17, 1997; transcript, Pentagon Press Briefing, unnamed senior military official, January 17, 1997. A White House official clarified in the same briefing: “It’s not tens of millions.”

²⁷ Hambric and Schneck, p. 29. The breakdown is as follows: M14 (3.5 million); M16 (1.5 million); Claymore M18A1 (973,932); ADAM (5,947,000); PDM (16,800); Volcano (107,300); MOPMS (9,200); GEMSS (71,200); Gator (U.S. Air Force, 238,612; U.S. Navy, 45,375).

²⁸ Human Rights Watch telephone interview, January 1997. Other Pentagon officials have also told Human Rights Watch that the U.S. was having difficulty determining just how many mines are in the current arsenal.

²⁹ Letter from George R. Schneiter, Acting Director, Tactical Warfare Programs, Acquisition and Technology, Office of the Undersecretary of Defense, to Rep. Lane Evans, October 27, 1994. Table 4, “Landmine Inventory, Conventional Mines,” gives a breakdown of 4,541,208 M14 mines; 1,702,879 M16 mines; and 20,700 M26 mines.

Official information on the number of dumb mines has been inconsistent. Leaving Claymore mines aside, Schneiter in 1994 cited 6.3 million, Hambric and Schneck in 1996 cited five million, and in the January 17, 1997 Pentagon press briefing, the spokesperson cited four million—three million slated for destruction and one million in Korea.

³⁰ The Joint Chiefs of Staff later provided a similar percentage. In a letter dated September 12, 1995, Chairman of the Joint Chiefs of Staff Gen. John Shalikashvili told Rep. Ron Dellums that smart mines “represent approximately 65% of the US total anti-personnel mine inventory.”

³¹ The Claymore figure comes from Hambric and Schneck, p. 29.

The January announcement was not the first time the U.S. failed to be forthcoming regarding the number of antipersonnel mines in its arsenal. A similar situation occurred in May 1996 when the President announced that the U.S. would, by the end of 1999, destroy all dumb mines not needed for the defense of Korea or for training purposes, yet did not publicly reveal either the number that would be destroyed or the number that would be kept. Shortly after the May announcement, several Pentagon officials privately indicated to Human Rights Watch that some four million to six million mines would be destroyed. Yet, at the time of the January 1997 announcement, the Administration said that it would be destroying about three million dumb antipersonnel mines.³² A Pentagon official has told Human Rights Watch that the destruction of these mines will not free up space for new production under the inventory cap; that is, the U.S. will not replace those three million dumb mines with new smart mines.³³

Exports

The U.S. has also been one of the biggest exporters of antipersonnel mines. From 1969 through 1992, the U.S. exported 4.4 million antipersonnel mines to at least thirty-two different countries.³⁴ The biggest recipients included Iran (2.5 million), Cambodia (622,000), Thailand (437,000), Chile (300,000) and El Salvador (102,000). It is also widely accepted that in the 1980s the U.S. covertly shipped significant numbers of antipersonnel mines to rebel groups in Afghanistan, Angola, Nicaragua and elsewhere.

On October 23, 1992 President Bush signed into law a one-year moratorium on the export of all antipersonnel mines.³⁵ The legislation had been introduced by Senator Patrick Leahy and Representative Lane Evans. The moratorium has subsequently been extended several times and is now effective, by law, until the year 2000.³⁶ In its January 17, 1997 policy announcement, the Clinton Administration stated that the moratorium was henceforth to be considered a permanent ban, and that it would work with Senator Leahy to pass legislation to that effect.³⁷

More than fifty countries have now stated that they will not export antipersonnel mines. To the best of our knowledge, there have been no major exports of antipersonnel mines worldwide in more than two years. There is, in effect, a de facto global moratorium on antipersonnel mine exports. Only a handful of nations known to have exported in the past have yet to at least suspend transfers—Bosnia, Egypt, Iran, Iraq, Serbia, and Vietnam.³⁸

³² White House and Pentagon press briefings, January 17, 1997. A Pentagon official told Human Rights Watch in March that nearly 300,000 dumb mines had been destroyed since the May 16, 1996 announcement, and that 80% of the three million slated for destruction were in inactive status, awaiting destruction. Telephone interview with Robert Cowles, Office of the Assistant Secretary for Special Operations and Low Intensity Conflict, March 14, 1997.

³³ Telephone interview with Lt. Col. Michael W. Thumm, Technology Transfer Action Center, Joint Staff Strategic Plans and Policy Directorate, February 14, 1997.

³⁴ Human Rights Watch Arms Project and Physicians for Human Rights, *Landmines: A Deadly Legacy*, p. 64. This book contains a country-by-country breakdown of U.S. mine exports since 1969.

³⁵ National Defense Authorization Act for Fiscal Year 1993, Public Law No. 102-484, sec. 1365. The implementing regulations appear at *Federal Register*, vol. 57 (November 25, 1992), p. 228.

³⁶ Sec. 558 of the FY 1997 Foreign Operations Act, amended Sec. 1365 (c) of the National Defense Authorization Act for FY 1993.

³⁷ White House, Statement by the Press Secretary, "United States Announces Next Steps on Anti-Personnel Landmines," January 17, 1997; conference call, Robert Bell, Senior Director for Defense Policy on Arms Control, National Security Council, with Human Rights Watch and other members of the U.S. Campaign to Ban Landmines, January 17, 1997.

³⁸ Human Rights Watch Arms Project fact sheet, "Antipersonnel Landmine Exports," June 1996. Some other nations, such as Russia and Singapore, have only suspended export of certain types of mines, usually those that do not self-destruct.

The international drive to stop antipersonnel mine transfers has come at a propitious time. It appeared that a burgeoning and potentially very lucrative market in smart antipersonnel mines was emerging. Smart mines can cost fifty times more than dumb mines. From 1985 to 1992 at least five countries—Greece, South Korea, Taiwan, the Netherlands, and Turkey—imported U.S. manufactured scatterable antipersonnel landmines worth at least \$24.7 million.³⁹ U.S. ADAM smart antipersonnel mines containing depleted uranium were sold to the following countries: Greece (504 ADAM M692 projectiles worth \$2.6 million); South Korea (645 ADAM M692 projectiles worth \$3 million and 232 ADAM 731 projectiles worth \$1 million); Turkey (320 ADAM M692 projectiles worth \$2 million and 232 ADAM M731 projectiles worth \$1.5 million); and Taiwan (72 ADAM M731 projectiles worth \$360,000).⁴⁰

IV. IDENTIFYING AND CHALLENGING U.S. COMPANIES

The Arms Project Investigation

The first list of U.S. companies involved in antipersonnel mine production was published by Human Rights Watch and Physicians for Human Rights in *Landmines: A Deadly Legacy* in 1993. It identified the “first tier” of main suppliers of mine components. The significant number of “secondary tier” suppliers of component parts for use in antipersonnel landmines is revealed for the first time in this report.⁴¹ The Human Rights Watch Arms Project has obtained documents through a variety of governmental and non-governmental sources that expose the corporate web of mine component suppliers across the country. While the forty-seven companies identified in this report represent more than twice the number acknowledged previously by DoD,⁴² Human Rights Watch is convinced that many more companies in the U.S. have been involved in the landmine industry, but have thus far escaped conclusive identification.

The most valuable resources in our investigation came from public court documents relating to a 1993-95 legal dispute involving Accudyne, Hughes Aircraft and Alliant Techsystems, and the U.S. Department of Justice and the U.S. Army, *United States of America ex rel. John Fallon, et al., v. Accudyne Corp., et al.* In addition, Eagle Eye Publishing provided Human Rights Watch with a database listing landmine production contracts since 1985.⁴³ Further research was conducted through the U.S. Freedom of Information Act.

Included in the court papers are company invoices from Accudyne identifying antipersonnel mine component suppliers, deposition testimony about alleged faults in one of the Army’s smart mine systems, and verbal clashes between the defendants, the prosecution, and subpoenaed witnesses. The invoices list the names of many companies whose component parts were used to make several types of antipersonnel mines at the Accudyne plant in Janesville, Wisconsin. For example, in April 1990 Accudyne received 6,005 Allen Bradley resistor networks to be used in body assemblies for Volcano M87 antipersonnel mines (lot number ABC-1-4). In July 1989 two batches of Microsemi diodes were delivered for use in Gator BLU-92/B antipersonnel mines (lot number MIC-1-9).

³⁹ Human Rights Watch and Physicians for Human Rights, *Landmines: Deadly Legacy*, p. 73.

⁴⁰ "Countries Which Purchased Munitions Containing Depleted Uranium as of 13 September 1995," obtained in 1996 by the Human Rights Watch Arms Project under a Freedom of Information Act request to the U.S. Department of the Army.

⁴¹ Manufacturers of antipersonnel mine dispenser systems are also included. Typically, new generation U.S. landmines are not hand emplaced. They are fired from special delivery systems on aircraft, artillery and other platforms.

⁴² A November 21, 1994 letter from George R. Schneiter, Director, Strategic and Tactical Systems, Acquisition and Technology, Office of the Undersecretary of Defense, to Rep. Lane Evans, identified twenty-one antipersonnel mine component suppliers.

⁴³ Eagle Eye Publishing is a market research company that identifies prime contracts awarded by the federal government to the private sector. In this case, using the Federal Procurement Data System’s product and service code for landmines (1345), Eagle Eye was able to identify every company awarded a federal prime contract for landmine production and supply work since 1985. However, in most cases no distinction is made between antipersonnel and antitank mine contracts.

The forty-seven companies are located in twenty-three states. Six of the companies are foreign-owned; two parent companies are based in Germany, two in Japan, one in Norway, and one in Hong Kong. Individual companies have profited from landmine contracts worth hundreds of millions of dollars. Alliant Techsystems, in Hopkins, Minnesota, appears to be the largest recipient of landmine production contracts. DoD records show that Alliant, a spin-off from Honeywell, won \$336,480,000 in landmine production contracts from 1985 to 1995.⁴⁴ Alliant is also the parent company of Accudyne Corporation, in Janesville, Wisconsin, which reaped an estimated \$150 million in landmine production contracts in the same time period.⁴⁵

Companies in these states received Pentagon prime contracts for antipersonnel and antitank landmine production for the following amounts from 1985 through 1995: Minnesota (\$336,480,000), California (\$163,676,972), Wisconsin (\$150,000,000), Florida (\$61,890,959), New York (\$61,565,000), Pennsylvania (\$51,195,000), Illinois (\$44,526,000), Kansas (\$22,218,000), Indiana (\$20,444,000), New Jersey (\$17,792,000), Connecticut (\$15,085,000), Alabama (\$14,728,000), Iowa (\$10,295,000), Ohio (\$7,941,000), Tennessee (\$7,939,000), Maryland (\$5,223,000), Michigan (\$3,708,000), Texas (\$3,698,000), Virginia (\$1,008,000), Montana (\$1,611,000), and Arizona (\$37,000). This list does not include sub-contractors.⁴⁶

As Human Rights Watch conclusively identified U.S. companies involved in antipersonnel mine production, we sent each a letter notifying it that the company would be named in this report and would be a target of the stigmatization campaign to be carried out by the U.S. Campaign to Ban Landmines. Human Rights Watch called on the companies to renounce any future involvement in antipersonnel mine production prior to publication of this report. Of the forty-seven producers, seventeen renounced future involvement in antipersonnel mine production, seventeen refused to renounce, and thirteen did not respond in writing.⁴⁷

Human Rights Watch has been in dialogue—through letters, telephone calls, and e-mail—with many of these companies since August 1996. Many company representatives at first expressed great surprise at being named, and some vehemently denied involvement. Human Rights Watch sent its evidence—usually copies of relevant invoices or primary source material from the Department of Defense—to company representatives who were unaware or denied that any of their products had been used to make antipersonnel mines.

The Recalcitrant Producers

Thirty companies rejected Human Rights Watch's humanitarian appeal to forego any future production of antipersonnel mine components—seventeen companies directly, in writing, and thirteen through silence. These companies will now be the focus of a USCBL stigmatization campaign.

⁴⁴ Ibid. The figures include both antitank and antipersonnel mine production.

⁴⁵ Ibid.

⁴⁶ Eagle Eye Publishing, 1996.

⁴⁷ Human Rights Watch has each of the renunciations in writing. Human Rights Watch sent certified letters to companies that did not respond, in order to insure that they were aware of our efforts.

The seventeen companies that declined in writing to renounce future involvement in antipersonnel mine production are: AAI Corp. (Maryland), Allen-Bradley (Texas), Alliant Techsystems, Inc. (Minnesota), also representing mine producers Accudyne Corp. (Wisconsin), and Ferrulmatic, Inc. (New Jersey), CAPCO, Inc. (Colorado), Dale Electronics, Inc. (Nebraska), Ensign-Bickford Industries, Inc. (Connecticut), General Electric Company (Connecticut), Lockheed Martin Corp. (Maryland), Mohawk Electrical Systems, Inc. (Delaware), Nomura Enterprise, Inc. (Illinois), Parlex Corp. (Massachusetts), Quantic Industries, Inc. (California), Raytheon (Massachusetts), Thiokol Corp. (Utah),⁴⁸ and Vishay Sprague (Pennsylvania).

The thirteen companies that did not respond in writing to Human Rights Watch are: Action Manufacturing Co. (Pennsylvania), Aerospace Design, Inc. (California), Amron Corp. (Wisconsin), BI Technologies (California), Consolidated Industries, Inc. (Alabama), Day & Zimmerman, Inc. (Pennsylvania),⁴⁹ EMCO, Inc. (Alabama), Formworks Plastics, Inc. (California), Fort Belknap Industries (Montana), Intellitec (Florida), Mason & Hangar/Silas Mason Co., Inc. (Kentucky),⁵⁰ Primetec, Inc. (Florida), and Unitrode Corp. (New Hampshire).

Appendix A contains details on the types of antipersonnel mines each of the recalcitrant producers has been involved with, as well as their address, telephone, and fax number.

When contacted by Human Rights Watch, a number of companies objected to their inclusion in this report on a variety of grounds. Most commonly heard were the following:

- Some companies denied being “mine producers.” When presented with our evidence, however, they would have to acknowledge that they had supplied components for use in antipersonnel mines. In the U.S., no company produces mines from beginning to end. The U.S. mine industry consists of component suppliers, with final assembly often done in government-owned, contractor-operated Army Ammunition plants.
- Some companies insisted that because they are not currently involved in mine production, it is unfair for Human Rights Watch to name them in our report. We explained that, after several major contracts had been completed in 1996, it does not appear any antipersonnel mines are being produced in the U.S. today. The purpose of our report is to identify those companies that have been involved in antipersonnel mine production in the past, and to call on them to make a statement renouncing any future involvement.
- Some companies acknowledged, after seeing our evidence, that their products had been used in antipersonnel mines, but claimed that they had no prior knowledge of involvement in mine production. Some also stated that because their components could be used for many purposes—military and non-military—they had no control over or knowledge of the end use. Human Rights Watch views the “no knowledge, no control” claims with skepticism. Several companies that initially told us they were unaware of involvement reversed course after a thorough review of company documents. Moreover, other companies that expressed such concerns later joined the ranks of those renouncing future involvement by pledging to make their best effort to not knowingly provide components intended for use in antipersonnel mines.

⁴⁸ Thiokol operates the government-owned Louisiana Army Ammunition Plant, where antipersonnel mines are assembled.

⁴⁹ In addition to producing antipersonnel mine components, Day and Zimmerman operates the government-owned Lone Star Army Ammunition Plant, where antipersonnel mines are assembled.

⁵⁰ Mason & Hangar operates the government-owned Iowa Army Ammunition Plant, where antipersonnel mines are assembled.

Alliant Techsystems is the company that appears to have profited the most from landmine production contracts. Alliant was awarded DoD antipersonnel and antitank landmine production contracts worth \$336 million in 1985-95; its Wisconsin subsidiary Accudyne Corp. was awarded similar contracts worth \$150 million in 1985-95; and its New Jersey subsidiary Ferrulmatic was awarded a \$72,000 contract in 1985 for the M128 Volcano landmine dispenser.⁵¹

In response to Human Rights Watch's appeal, CEO Richard Schwartz wrote: "The International Campaign to Ban Landmines has served an invaluable role in shedding light on a terrible problem that must be addressed," but insisted that his company's landmines were not to blame. "It is irresponsible to imply in any way that companies such as Alliant Techsystems have contributed to the world's landmine problems. To do so wrongly maligns responsible U.S. citizens, and diverts resources that could be applied toward stigmatizing the governments that violate international law."⁵²

Virtually identical wording came from Colorado's CAPCO, which repeated Alliant's argument that antipersonnel mine production was in the national interest.⁵³ CAPCO insisted: "Our company will continue to support the U.S. need for mines of these types (i.e. self-destruct mines) as deemed necessary by our Government."⁵⁴

Raytheon is best known for its air traffic control, fire control, communications, space and navigation systems. Raytheon told Human Rights Watch: "We understand well the importance of the cause you are forwarding.... Furthermore, we understand the basis of the Motorola statement and its flexibility. However...it is generally our practice not to broadly and formally renounce participation in businesses, despite the fact that this is not a business in which we participate and, when we did, it was as a minor supplier of transistors - a business we have since sold."⁵⁵ Thus, Raytheon acknowledged past involvement and declined when offered the opportunity to renounce future involvement.

Quantic Industries, Inc., a defense contractor involved in producing the GEMSS landmine system, suggested that if government policy changed, so would Quantic: "Quantic does not make mines. Some of our components have been used in mines. All of them were used to ensure the safety of the product by U.S. personnel. I do not endorse warfare period, let alone mine warfare. I look forward to the time when this and other countries do not make such weapons. Clearly these are political decisions. I wish you success in dealing with this problem through our public officials."⁵⁶

⁵¹ Eagle Eye Publishing, 1996. Alliant was the only company to lobby vigorously against the Leahy-Evans mine export moratorium, claiming that it could cost U.S. producers \$500-650 million in overseas business. Alliant Techsystems, "Current Potential FASCAM Overseas Markets," 1993. In a June 11, 1993 letter from former Alliant Techsystems President and CEO Toby G. Watson to Senator Leahy, Mr. Watson argued against a mine export moratorium that included smart mines: "Export of convention-compliant mines will actually help to achieve the goal of avoiding harm to non-combatants, while preserving American jobs and critical elements of our nation's defense industrial base at the same time."

⁵² Letter from Alliant Techsystems, Inc. President and CEO Richard Schwartz to Human Rights Watch, August 22, 1996.

⁵³ CAPCO's statement repeated word for word Alliant's four arguments in favor of smart antipersonnel mines. For example, both declared: "The U.S. has used self-destruct, self-deactivating antipersonnel mines in a disciplined manner only in combat situations."

⁵⁴ Statement from CAPCO, Inc. Vice-President John Younger to Human Rights Watch, September 3, 1996.

⁵⁵ Statement from Raytheon Vice President, Corporate Affairs, Robert S. McWade to Human Rights Watch, September 19, 1996.

⁵⁶ Letter from Quantic Industries, Inc. President Robert M. Valenti to Human Rights Watch, August 6, 1996. Quantic, despite its stated moral opposition to "landmine warfare," won DoD landmine production contracts worth \$1,261,000 in 1987. Eagle Eye Publishing, 1996.

From Nomura Enterprise came a stern warning that banning antipersonnel mines would somehow destabilize U.S. strategic interests: "Although Nomura Enterprise, Inc. (NEI), and the undersigned personally, can join with you in deploring war and the personal tragedies that result, we also consider it necessary for the United States to be able to defend itself and its citizens with military force. We truly wish that that were not the case but at this point in world history it is a hard, cold fact."⁵⁷

Ensign-Bickford's letter was remarkable for both confirming and denying past involvement in mine production: "Please be advised that while [Ensign-Bickford] has never been a manufacturer or supplier of antipersonnel landmines, mine components or delivery systems, a former subsidiary, Ensign-Bickford Aerospace Company did, at one time, supply products that allowed for the safe separation of such devices from their delivery vehicles."⁵⁸

Lockheed Martin, one of the biggest U.S. defense contractors, initially sent an indignant letter protesting the company's inclusion on the Human Rights Watch list: "The basis for this listing is completely erroneous - in fact the opposite is true - and Lockheed Martin should be removed from the list. Please confirm that our name has been removed from the USCBL list."⁵⁹ Human Rights Watch informed Lockheed that the basis for its listing came from DoD, which credits Lockheed with involvement in four antipersonnel landmine systems. According to the DoD, Lockheed supplied components for the Army's ADAM and GEMSS antipersonnel mines, the Air Force's Gator (CBU-89) antipersonnel mines, and the Navy's Gator (CBU-78) mines.⁶⁰

In its letter Lockheed also said: "A review of our records indicates that we do not produce landmines and have not since the Vietnam era." But Lockheed Martin New Jersey was awarded DoD landmine production contracts worth \$52,444,000 from 1985 to 1990. Lockheed Martin California was awarded landmine production defense contracts worth an estimated \$850,000 in 1990.⁶¹ It is unclear whether the contracts were for antitank or antipersonnel mine production, or for both.

⁵⁷ Letter from Nomura Enterprise President Leland Nomura to Human Rights Watch, September 13, 1996. DoD awarded Nomura Enterprise landmine production contracts worth \$21,453,000 in 1986-95. Eagle Eye Publishing, 1996.

⁵⁸ Letter from Ensign-Bickford Industries, Inc. President Herman J. Fonteyne to Human Rights Watch, August 7, 1996. DoD awarded Ensign-Bickford landmine production contracts worth \$15,085,000 in 1989-92. Eagle Eye Publishing, 1996. Contract No. DAAA21-C92-C-0039 (May 13, 1992), obtained by Human Rights Watch under the Freedom of Information Act, shows that Ensign-Bickford was awarded \$6.8 million to supply components for Volcano landmines. The components were shipped to army ammunition plants in Iowa and Texas.

⁵⁹ Letter from Lockheed Martin Vice-President, Corporate Communications, Susan M. Pearce to Human Rights Watch, September 4, 1996.

⁶⁰ Letter from George R. Schneider, Director, Strategic and Tactical Systems, Acquisition and Technology, Office of the Undersecretary of Defense, to Rep. Lane Evans, November 21, 1994.

⁶¹ U.S. DoD landmine production contracts for 1985-94. Eagle Eye Publishing, 1996.

In a subsequent letter, Lockheed told Human Rights Watch, "The agency [DoD] confirms that Lockheed Martin is not now and has never been a producer of landmines."⁶² However, Lockheed has failed to respond to repeated requests by Human Rights Watch to provide us with any details of such a confirmation. In a telephone interview, a Lockheed spokesperson agreed that DoD's response to Lockheed was contradictory to the official information in Human Rights Watch's possession, and when told that we would keep Lockheed on our list replied, "I understand."⁶³

In another letter, dated January 27, 1997, Human Rights Watch reminded the company: "Lockheed's failure to provide evidence to the contrary means that the company will be listed by Human Rights Watch as a producer of antipersonnel landmines, components or the systems that deploy them."⁶⁴ Lockheed Martin responded: "As previous correspondence between our offices points out, Lockheed Martin's records indicate our Corporation is not now and never has been a producer of landmines. Further, our records indicate we have not produced any components for landmines since the 1980s.... Finally, we would repeat our request that your report distinguish between those companies currently manufacturing landmines or components and those firms no longer involved in such activities, as well as identify those companies using technology to detect and remove landmines."⁶⁵ Thus, Lockheed has acknowledged past involvement in mine production, but has refused to commit to no future antipersonnel mine production activities.

AAI, curiously, initially told Human Rights Watch that it would not produce or supply antipersonnel mine components in the future, but subsequently asked not to be put on a list of renouncing companies. On August 22, 1996 AAI said: "...AAI Corporation does not manufacture landmine systems or components nor does the company intend to pursue that line of business in the future. I am hopeful that any listing you generate or publish will accurately reflect AAI Corporation's status in the (sic) regard."⁶⁶ Yet, in response to our congratulatory letter informing them our intention to name them as a renouncing company came a fax on September 17 insisting that Human Rights Watch "not list AAI Corporation on your growing list of companies which have agreed to renounce all participation in future antipersonnel mine production. We do not wish to be so named."⁶⁷

Vishay Intertechnology—identified on Accudyne invoices as a supplier of components for Volcano and Gator antipersonnel mines—intimated possible legal action if Human Rights Watch listed it and its subsidiary Dale Electronics as component suppliers: "...the products in question, passive electronic components, are basically standard products sold either directly to major electronic manufacturers or to independent distributors of passive electronic components. In many cases we do not know either the application for which the product will be used or the end customer. Therefore it would be pointless for us to make any statement regarding our intention not to sell components to any particular customer for a specific application.... We are a public company traded on the New York Stock

⁶² Letter from Lockheed Martin Vice President, Corporate Communications, Susan M. Pearce to Human Rights Watch, September 25, 1996.

⁶³ Telephone interview with Charles Manor, Lockheed Martin, Vice President, News and Information, Corporate Communication, September 27, 1996.

⁶⁴ Letter from Human Rights Watch to Susan Pearce, Vice President, Corporate Communications, Lockheed Martin, January 27, 1997.

⁶⁵ Letter from Susan Pearce, Vice President, Corporate Communications, Lockheed Martin, to Human Rights Watch, March 4, 1997.

⁶⁶ Letter from AAI Corp. President G.J. Kersels to Human Rights Watch, August 22, 1996. DoD awarded AAI a \$750,000 contract to manufacture the M128 landmine dispenser in 1985. Eagle Eye Publishing, 1996.

⁶⁷ Fax from AAI Corp. Communication staff person Susan Flowers to Human Rights Watch, September 17, 1996.

Exchange and any false statement or misleading innuendo about our customers or us can result in substantial monetary damages to our shareholders or to the Company."⁶⁸

⁶⁸ Fax from Vishay Intertechnology Vice Chairman of the Board of Directors, Avi D. Eden, to Human Rights Watch, September 19, 1996.

When Human Rights Watch reminded Vishay in January 1997 of the company's impending listing, and faxed the relevant Accudyne invoices, Mr. Avi Eden wrote: "In response to your letter dated January 27, 1997, Vishay Intertechnology has the following comments: We do not manufacture landmines. We do not manufacture components specifically for landmines. We do sell to the Government and Government Contractors but cannot control the end use of our components."⁶⁹

Allen-Bradley, owned by Rockwell, would only acknowledge that "the document referencing Allen-Bradley resistors in a shipment to Accudyne Corporation was not traceable to a distributor or other immediate source. Further review indicates a 'resistor network' was provided. Allen-Bradley ceased manufacturing resistor networks in 1991."⁷⁰

The response from the Parlex Corp. was somewhat encouraging: "Parlex does not currently, nor do we have any plans to produce components for landmines." However, Parlex would not rule out future mine component supply: "Company policy is to refrain from any blanket statement concerning our future process."⁷¹

Thiokol Corp. would not renounce future antipersonnel mine activities, but said it "does not manufacture landmines. Production operations at Army-owned munition facilities have been discontinued and production contracts ended."⁷²

Mohawk Electrical Systems makes the Claymore M18A1. Although the Claymore has been classified as an antipersonnel landmine in government and private reference works in the past, the growing success of the mine ban movement has led the DoD more recently to begin referring to the Claymore as a command detonated munition and not a landmine. Likewise, Mohawk does not consider the Claymore an antipersonnel mine and told Human Rights Watch that it will confine its production solely to Claymores. Mohawk noted that "as a part of the 1996 Defense Authorization Act, Claymores were removed from the export moratorium. Suffice to say that our company over a period of about 35 years has consistently refused to even quote on any of the APERS MINES that were targeted by Senator Leahy's crusade."⁷³

Human Rights Watch does not believe that Claymores should suddenly be classified as something other than a landmine. While Claymores operated in a command detonated mode (where a soldier identifies the enemy and explodes the mine remotely) do not pose the dangers to civilians that other mines do, Human Rights Watch remains concerned about the indiscriminate nature of Claymores used with tripwires. Any mine designed to be used with a tripwire should be banned.

The Case Against General Electric

⁶⁹ Letter from Mr. Avi Eden, Vice Chairman of the Board of Directors, Vishay Intertechnology, to Human Rights Watch, February 25, 1997.

⁷⁰ Letter from Bruce Womer, Vice President, Electronic Components Business, Allen-Bradley, to Human Rights Watch, September 5, 1996. At one point, Allen-Bradley had informally communicated a strong interest in issuing a statement of renunciation.

⁷¹ Letter from Peter J. Murphy, President, Parlex Corp., to Human Rights Watch, September 5, 1996.

⁷² Letter from Edwin M. North, Corporate Secretary, Thiokol Corp., to Human Rights Watch, August 9, 1996.

⁷³ Letter from C.M. Welch, Chairman, Executive Committee, Mohawk Electrical Systems, Inc., to Human Rights Watch, August 15, 1996.

By far the most recognizable name on the list of landmine component producers is General Electric—the U.S. multinational that says it “brings good things to life.”⁷⁴ For more than a dozen years these “good things” included parts for deadly antipersonnel landmines.

General Electric’s involvement in the landmines business first came to Human Rights Watch’s attention when GE showed up on a 1994 Pentagon list of suppliers of landmines and mine components.⁷⁵ DoD confirmed GE’s past production activities in a February 10, 1997 letter stating that GE was a supplier of “integrated circuit components for the self-destructing landmines,” and that GE is still considered by DoD to be one of several “potential sources of supply” for landmine components.⁷⁶ Our review of the Eagle Eye Publishing database of defense contracts revealed that DoD awarded GE New Jersey landmine production contracts worth \$667,000 from 1989 to 1992, though it is unclear whether the contracts were for antipersonnel or antitank mines, or for both.⁷⁷

Subsequent research by Human Rights Watch has centered on GE’s business ties with the Italian ex-landmine producer Tecnovar Italiana. In September 1996 a Human Rights Watch Arms Project researcher visited Tecnovar’s facility in the southern Italian town of Bari and saw sacks of GE’s Lexan plastic powder on the premises. Tecnovar subsequently wrote a letter to Human Rights Watch stating that GE’s Dutch and U.S. subsidiaries supplied Lexan plastic powder and synthetic rubber components to Tecnovar sufficient to manufacture 1.6 million antipersonnel mines and 1.2 million antitank mines from 1979 to 1993.⁷⁸ Human Rights Watch has also obtained invoices that identify GE as a supplier of Lexan to Tecnovar.

⁷⁴ On January 24, 1997 GE was identified as the world’s biggest company, heading the *Financial Times* Global 500 list. GE was also named the most profitable U.S. company, with after-tax profits of \$7.28 billion, as sales grew 13% to \$79 billion. *Financial Times*, January 24, 1997, p. 17. GE has an estimated 250,000 employees and is ranked number ninety-six out of the top one hundred U.S. defense contractors. *Aviation Week and Space Technology*, vol. 146, no. 2, January 13, 1997, p. 235.

⁷⁵ Letter from George R. Schneider, Director, Strategic and Tactical Systems, Acquisition and Technology, Office of the Undersecretary of Defense, to Rep. Lane Evans, November 21, 1994. See Table 3 of the letter. It does not, however, specify whether GE supplied parts for antipersonnel or antitank mines, or both.

⁷⁶ Letter from George R. Schneider, Director, Strategic and Tactical Systems, Acquisition and Technology, Office of the Undersecretary of Defense, to Senator Patrick H. Leahy, February 10, 1997.

⁷⁷ Eagle Eye Publishing, 1996.

⁷⁸ In a letter to Human Rights Watch dated December 2, 1996, V.A. Fontana, managing director of Tecnovar Italiana, wrote: “Regarding our raw material producers we can confirm that our main suppliers were General Electric Plastics (GEP) for plastic components using the LEXAN polycarbonate produced in the GEP factory in the Netherlands; General Electric Plastics (U.S.) and Rhone-Poulenc (France) for the rubber components; Sandvik (Sweden) for stainless steel wire used in springs; RIV/SKF (Italy) for the stainless steel spheres present in the working mechanism. All the suppliers were aware of our production...”

Human Rights Watch, in a December 3, 1996 letter to GE CEO Jack Welch, requested that the company issue a statement regarding any past or present involvement in the manufacture of antipersonnel landmines or their component parts.⁷⁹ GE responded: "Based on a review of GE's business, we know of no active GE contracts or any current direct sales of GE products or materials in which we are involved with manufacturers of antipersonnel mines, mine components or mine delivery systems....The reported presence of our materials at a particular company cannot be construed as evidence of a current direct relationship with GE."⁸⁰

While GE was forthcoming about its absence of "current direct" activities, it made no comment about past production and supply, nor would the company agree to renounce future production and supply. In a follow-up letter, Human Rights Watch again explicitly asked GE to comment on its past activities related to landmines. A Human Rights Watch researcher sought clarification on this point: "In my December 3 letter I also requested information about GE's possible past involvement in antipersonnel mine production. Your statement did not address the issue of past production. The Arms Project is committed to researching and identifying any company which has shown a previous capacity or willingness to be involved in mine production and component supply. Our primary concern is that these companies may involve themselves in future mine production....Human Rights Watch requests a statement by GE regarding possible past involvement in the manufacture or supply of antipersonnel mines, their component parts and the systems that dispense them."⁸¹

Five weeks later, GE responded in writing: "After consideration of our recent conversations and after further review by our businesses, there is no change in GE's statement contained in my December 11, 1996 letter to you.... We know of no active GE contracts nor any current direct sales of GE products or materials in which we are involved with manufacturers of antipersonnel mines, mine components or mine delivery systems....GE's name on an undated (but apparently old) government list of suppliers is not relevant to the Company's current operation."⁸² On January 17, 1997, the day after receiving GE's reply, Human Rights Watch sent yet another letter inquiring about past activities, but has not received a response.

GE's refusal to address directly the issue of past involvement in antipersonnel mine production, the fact that it has not denied past involvement, and its dismissal of "old" Pentagon documentation are indicative of an effort to avoid the embarrassment of its evident status as a past supplier of antipersonnel mine components. Indeed, one company representative has expressed concern about GE being held responsible for what he described as "historical" events.⁸³ Human Rights Watch strongly urges GE to answer our concerns and to take steps to stop the use of its products in antipersonnel mine production in the U.S. and overseas.

It is instructive to note where some of the Italian mines ended up. Tecnovar in 1979 beat out half a dozen other big European companies to stock Egypt's landmine arsenal. From 1979 to 1993 Tecnovar delivered a total of 1.4 million TS-50 antipersonnel mines and 200,000 VAR-40 antipersonnel mines to Egypt. In the Egyptian Army's arsenal the TS-50 was renamed "Mine Type 79" and exported under the acronym "MAT-79."

⁷⁹ Letter from Human Rights Watch to Jack F. Welch, Jr., Chairman of the Board and CEO, General Electric Co., December 3, 1996.

⁸⁰ Statement from General Electric Company's Manager of Corporate Communications, David C. Warshaw, to Human Rights Watch, December 11, 1996.

⁸¹ Letter from Andrew Cooper, Human Rights Watch Arms Project Research Assistant, to David Warshaw, General Electric Company's Manager of Corporate Communications, December 12, 1996.

⁸² Letter from David Warshaw, General Electric Company's Manager of Corporate Communications, to Andrew Cooper, Human Rights Watch Arms Project Research Assistant, January 16, 1997.

⁸³ Telephone interview with David Warshaw, General Electric Company's Manager of Corporate Communications, January 6, 1997.

In 1994 Human Rights Watch published documents linking Egypt to weapons flooding Rwanda in the months prior to the genocide. MAT-79 Egyptian antipersonnel landmines were cited in one document.⁸⁴ In 1996, after being alerted to arms smuggling along the Zaire-Rwanda border, a United Nations commission initiated an investigation of Tecnovar after recording the presence of antipersonnel mines among weapons captured from rebel Hutu militia groups.⁸⁵

Companies Renouncing Future Involvement

One of the most promising developments for the campaign to ban antipersonnel mines in the U.S. is the pledge by seventeen companies to refrain from future involvement in the antipersonnel mine business. Human Rights Watch has stressed with all forty-seven companies that its overriding concern is to discourage any future production and supply activities. Many companies argued that they were unable to control the ultimate destination or use of their products. However, making a commitment to *not knowingly* sell components for end use in antipersonnel mines is viewed by Human Rights Watch as a vital step forward. Ultimately, companies must also take responsibility for the impact of their past activities related to mine production.

The seventeen companies that have told Human Rights Watch that they will no longer be involved in antipersonnel landmine production are: ASC Capacitors (Nebraska), AVX Corp. (South Carolina), Compensated Devices, Inc. (Massachusetts), Dyno Nobel, Inc. (Utah),⁸⁶ Hughes Aircraft (Virginia),⁸⁷ Kalmus and Associates, Inc. (Illinois), Kemet Corp. (South Carolina), Mathews Associates, Inc. (Florida), MascoTech (Michigan),⁸⁸ Microsemi Corp. (Arizona), Motorola, Inc. (Illinois), Olin Ordnance (Florida),⁸⁹ Plastics Products Co., Inc. (Minnesota), S&K Electronics (Montana), Siliconix, Inc. (California), S W Electronics & Manufacturing Corp. (New Jersey), and TLSI, Inc. (New York).

⁸⁴ Human Rights Watch Arms Project, "Arming Rwanda: The Arms Trade and Human Rights Abuses in the Rwandan War," *A Human Rights Watch Short Report*, vol. 6, issue 1, January 1994, p. 15. Appendix A3 contains a copy of a March 1992 \$6 million dollar arms sale from Egypt to Rwanda, which included 2,000 MAT-79 antipersonnel mines, at a cost of \$20 each.

⁸⁵ United Nations, *Third Report of the International Commission of Inquiry (Rwanda)*, October 28, 1996, p. 17: "On 17 September 1996, a member of the Commission visited Kibuye on the Rwandan side of Lake Kivu, where he inspected weapons seized from insurgents who had infiltrated into Rwanda. The weapons included TS-50 antipersonnel landmines which, the Commissioner was informed, were manufactured in southern Italy and which had not been available to the former RGF before the imposition of the embargo. Accordingly, the Commission wrote to the Government of Italy on 26 September to request information regarding the factory where the mines were said to have been manufactured, the countries to which they were delivered, delivery dates, the parties involved in the transactions and details of the end-user certificates and payment details. No reply has yet been received." No document number is available for this report because the United Nations has yet to release it for public dissemination.

⁸⁶ Dyno Nobel responded on behalf of its Port Ewen, New York facility, originally identified by DoD as a supplier of mine components.

⁸⁷ The Hughes Aircraft statement also applied to the following Hughes subsidiary companies identified by Human Rights Watch as former mine production participants: Hughes Georgia, Inc. (Georgia), Hughes Ground Systems Group (California), and Hughes Microelectronics Circuits Division (California). For the purposes of this report, Hughes is only listed once.

⁸⁸ MascoTech issued a statement on behalf of its subsidiary company Norris Industries.

⁸⁹ Olin Ordnance's Downey, California plant (formerly Aerojet Ordnance) was previously identified by DoD as a supplier of landmine components.

Motorola was the first company to state publicly that it intended to get out of the antipersonnel mine business, and its decision has clearly paved the way for others. Motorola's involvement with antipersonnel mines first came to light in a film shot in 1995 of a Khmer Rouge guerrilla in Cambodia unwinding the cap of a Chinese Type 72 antipersonnel mine, revealing the presence of a Motorola electronic chip.⁹⁰ Unsettled by this scene, Motorola initiated an internal investigation into its export practices, and began exploring with Human Rights Watch and the Vietnam Veterans of America Foundation ways in which the company could assist with the international effort to ban antipersonnel mines. In May 1996 Human Rights Watch informed Motorola that evidence also pointed to Motorola components in U.S. Volcano and Gator antipersonnel mines. After an internal company audit confirmed our findings, Motorola moved quickly to adopt a new company policy. In July, Motorola pledged to "do everything reasonably possible to make sure that Motorola does not knowingly sell any part that is intended for use in an antipersonnel mine....[W]e believe that we have an obligation and a unique opportunity to proactively support the elimination of antipersonnel mines."⁹¹ The company produced a forty-page manual and shipped it off to its subsidiary plants in the U.S. and abroad advising employees of the new company policy.

The USCBL applauded Motorola's decision, saying: "Motorola has now emerged as the best kind of industry leader. They have set the standard and we hope other companies will follow suit. Motorola deserves high praise for its recognition of the humanitarian disaster caused by mines, and especially its willingness to act on its own to help stem the crisis."⁹²

Motorola's action appears to have had a significant impact on many of the sixteen other companies that subsequently agreed to renounce future antipersonnel mine activity. In their written renunciations provided to Human Rights Watch, many companies used language similar or identical to that of Motorola. In particular, smaller companies seemed to view Motorola as providing them with leadership on a moral issue. Motorola's decision was praised by *Electronic Engineering Times*, one of the electronic industry's national news publications,⁹³ and by political figures like Sen. Patrick Leahy of Vermont, who is championing the cause of an antipersonnel mine ban in the U.S. Congress.⁹⁴

"S W Electronics will do everything reasonably possible to ensure that we do not knowingly sell any parts that are intended for use in antipersonnel mines," declared company president Carl P. Szczepkowski.⁹⁵

⁹⁰ "Terror in the Minefields," produced by David A. Feingold and Deborah LaGorce Cramer, directed by David A. Feingold, Ophidian Films, Ltd., for Nova [PBS], WGBH, January 1996.

⁹¹ Motorola company notice to employees, received by Human Rights Watch on July 17, 1996.

⁹² U.S. Campaign to Ban Landmines Press Release, "Motorola: No More Components for Landmines," August 26, 1996.

⁹³ Loring Worbel, "Bold Step," *Electronic Engineering Times*, October 14, 1996, p. 34. Worbel's editorial noted that "Motorola has stepped into dangerous territory by refusing to sell components for products that neither the United States nor the United Nations has had the courage to ban. Critics will say that the company has inappropriately appointed itself judge of its customers' moral fitness....Yet shareholders should applaud Motorola's courage in walking away from sales for the sake of a goal more far-reaching than profit."

⁹⁴ Jon Frandsen, "Motorola Leads Charge Against Land Mines," *The Burlington Free Press*, December 24, 1996, p. 1. Senator Leahy told the *Free Press*: "Motorola's action is a sign that companies who have made these insidious weapons or whose products have been used in land mines can become a potent force for a ban. It is only a matter of time before other manufacturers follow Motorola's example."

⁹⁵ Letter from S W Electronics & Manufacturing Corp. President Carl Szczepkowski to Human Rights Watch, September 4, 1996. DoD awarded S W Electronics and Manufacturing a landmine production contract for \$378,000 in 1994. Eagle Eye Publishing, 1996.

TLSI's president, Mort Pullman, wrote: "On behalf of TLSI, I would like to state that TLSI endorses the new Motorola policy concerning the ban on the manufacture of antipersonnel mines."⁹⁶

From the Flathead Indian Reservation in remote Ronan, Montana, S&K Electronics, a minority-owned business, declared it would no longer supply component parts for use in antipersonnel mines.⁹⁷

"Thank you for your recent fax regarding use of parts in landmines," wrote Marlene Messin, President of Plastic Products Co., Inc., in Lindstrom, Minnesota. "This letter is to inform you that our sales engineer is contacting our customer, Accudyne, to inform them we will no longer mold parts at our company that go into landmines. As soon as we have worked out an arrangement, the tooling that produces those parts will be returned to Accudyne."⁹⁸

Siliconix, a Santa Clara, California, electronics company owned by Daimler-Benz of Germany, wrote: "We too believe that such weapons have no place in today's world, and that there should be a united effort to encourage their manufacturers to get out of the business. In addition, Siliconix will do everything reasonably possible to ensure that Siliconix does not knowingly sell any part that is intended for use in an antipersonnel mine."⁹⁹

Kemet, an electronics giant, said: "The Company does not sell capacitors directly to the U.S. military nor does it design or manufacture any capacitors specifically for use in antipersonnel landmines. In addition, the Company will do everything reasonably possible to make sure that Kemet does not knowingly sell any part that is specifically intended to be used in an antipersonnel mine."¹⁰⁰

Hughes Aircraft, responsible for designing and building the Army's scandal-wracked Modular Pack Mine System (MOPMS) from 1987 to 1992, said: "Hughes Electronics is no longer involved in this activity nor with any other antipersonnel landmine program. Hughes has no intention of being involved with the production of antipersonnel mines or their components in the future."¹⁰¹

The president of AVX wrote: "We will definitely take the same position Motorola has and others in our industry and will in no way encourage the development of such devices. We will certainly support the elimination of these devices in the future."¹⁰²

⁹⁶ Letter from TLSI President Mort Pullman to Human Rights Watch, August 28, 1996.

⁹⁷ Letter from S&K Electronics President Lawrence R. Hall to Human Rights Watch, September 5, 1996.

⁹⁸ Letter from Plastic Products Co., Inc. President Marlene Messin to Human Rights Watch, September 11, 1996.

⁹⁹ E-mail message from Siliconix, Inc. Secretary and General Counsel David Achterkirchen to Human Rights Watch, September 10, 1996.

¹⁰⁰ Kemet Corp. statement faxed to Human Rights Watch, September 17, 1996.

¹⁰¹ Letter from Hughes Aircraft President John C. Weaver to Human Rights Watch, August 29, 1996. DoD awarded Hughes Aircraft California \$58,551,000 in landmine production contracts from 1987-93 to make antipersonnel and antitank mines. Eagle Eye Publishing, 1996.

¹⁰² Letter from Benedict P. Rosen, President and CEO, AVX, to Human Rights Watch, September 9, 1996.

Microsemi said it was “proud to issue the following statement relative to the U.S. Campaign to Ban Landmines: Microsemi will do everything reasonably possible to insure that we do not knowingly sell any product that is intended for use in the manufacture of antipersonnel mines. We are proud to join other fine companies in their support of the eventual elimination of such destructive weapons.”¹⁰³

Kalmus and Associates initially sent a hand-written note on the back of our original letter that said: “We have not been involved in this program for over three years and do not expect to see any future circuit board requirements for landmines.”¹⁰⁴ Kalmus later sent this via fax: “Please let this letter serve as confirmation that Kalmus and Associates, Inc. is not currently involved in any phase of landmine construction, and will not knowingly participate in such in the future.”¹⁰⁵

Olin Ordnance, one of the largest U.S. munitions manufacturers, purchased Aerojet Ordnance in Downey, California in 1994.¹⁰⁶ Aerojet had been a major manufacturer of mine components. Olin, while unwilling to accept responsibility for its new subsidiary's past activities with respect to antipersonnel mines, issued a clear statement to Human Rights Watch regarding any future involvement in antipersonnel mine production: “Antipersonnel mine production has not ever been and is not a business area in which Olin Ordnance would seek to participate. Additionally, Olin Ordnance is not engaged in the research, development, production, or sale of ‘self-destruct’ antipersonnel mines.”¹⁰⁷

Dyno Nobel initially sent a letter to Human Rights Watch stating that “unforeseeable and demonstrably legitimate” circumstances might provoke it to supply landmine components again.¹⁰⁸ When news of Dyno’s impending listing as a component supplier broke in Norway, the press asked the Norwegian government, which owns a majority shareholding in Dyno and has its own domestic production ban, whether it would allow a U.S. subsidiary to skirt the rules. Within days Human Rights Watch received this statement: “I am pleased to inform you that it is the policy of Dyno Nobel, Inc. not to engage in the manufacture of components for antipersonnel mines. We are not doing so now and will not do so in the future. The management and employees of Dyno Nobel, Inc. look forward to the time when all nations agree to discontinue the production and deployment of such devices.”¹⁰⁹

¹⁰³ Letter from Mick McKeighan, Vice President, Microsemi Corp., to Human Rights Watch, February 13, 1997.

¹⁰⁴ Hand-written note by Henry J. Kalmus to Human Rights Watch, August 5, 1996.

¹⁰⁵ Letter from Henry J. Kalmus to Human Rights Watch, dated September 10, 1996.

¹⁰⁶ Olin Corp. is ranked twenty-eight out of the top one hundred U.S. DoD contractors. *Aviation Week & and Space Technology*, vol. 146, no. 2, January 13, 1997, p. 260

¹⁰⁷ Letter from Olin Ordnance Director of Public Affairs Edwin E. Alber to Human Rights Watch, September 5, 1996. DoD awarded Aerojet Ordnance in Downey, California, later purchased and renamed Olin Ordnance by Olin Corp., a total of \$86,209,000 in landmine production contracts from 1985 to 1992. Eagle Eye Publishing, 1996.

¹⁰⁸ Letter from Jay M. Anderson, Senior Management Team, Health, Safety and Environment, Dyno Nobel, Inc., to Human Rights Watch, August 27, 1996.

¹⁰⁹ Letter from Jay M. Anderson, Senior Management Team, Health, Safety and Environment, Dyno Nobel to Human Rights Watch, September 19, 1996. DoD awarded Dyno Nobel’s Port Ewen, N.Y., facility (formerly known as Ireco) landmine production contracts worth \$45,718,000 from 1985 to 1994. Eagle Eye Publishing, 1996.

ASC Capacitors wrote: "All of us here at ASC join you in our quest to eliminate the production of these destructive weapons. Please be advised that ASC has discontinued the production of the molded axial capacitor that was used in antipersonnel landmines. We have no current open orders and will not accept any new orders for this product."¹¹⁰

MascoTech, writing on behalf of Norris Industries, expressed support for what it called "your noble and human endeavour." MascoTech President Lee M. Gardner said that MascoTech "has never knowingly manufactured components for use in such weapons, nor will we do so at any time in the future. We salute you for your efforts to end the manufacture and deployment of antipersonnel landmines, and we look forward to the day when all nations work together to eliminate their use throughout the world."¹¹¹

"Thank you for making us aware of the AP mine situation," wrote Compensated Devices President Thomas J. Kachel. "I congratulate you and your organization in your humanitarian efforts." Mr. Kachel said in his letter: "I feel the major thrust in the world community should be to stop all production of long-lived AP mines and save the argument against 'smart' AP mines for a later day." However, Compensated Devices agreed to "make every reasonable effort to ensure that we will not knowingly sell components intended for use in antipersonnel mines."¹¹²

"Mathews Associates, Incorporated of Sanford, Florida, will not knowingly sell or manufacture any component part for possible use in antipersonnel landmines or the systems that dispense them," wrote Mr. Daniel W. Perreault.¹¹³

V. RECOMMENDATIONS

Human Rights Watch calls on the United States government:

- to declare an immediate ban on the production of all types of antipersonnel mines in the United States.
- to support the Canadian-led diplomatic initiative aimed at the signing of a comprehensive treaty in December 1997 banning production, stockpiling, export, and use of antipersonnel mines.
- to make public information about the number and types of antipersonnel mines in U.S. inventories.
- to proceed rapidly with its plan to destroy part of its stockpile of so-called "dumb" mines; to expand that plan to include all "dumb" mines, rather than maintaining one million or more for future use in Korea; and to develop a timetable for the destruction of all stockpiles of so-called "smart" antipersonnel mines.
- to proceed rapidly with its announced intention of signing into law a measure that would change the current moratorium on the export of antipersonnel mines into a permanent ban.

Human Rights Watch encourages the more than 180 non-governmental organizations in the U.S. Campaign to Ban Landmines, as well as concerned citizens across the country, to utilize this report as part of a stigmatization campaign designed to encourage U.S. companies to commit to no future involvement in the manufacture of antipersonnel landmines, their components, or their delivery systems.

Human Rights Watch urges supporters of an international ban on antipersonnel landmines:

¹¹⁰ Letter from Chuck Robertson, General Manager, ASC Capacitors, to Human Rights Watch, February 3, 1997.

¹¹¹ Letter from Lee M. Gardner, President, MascoTech, to Human Rights Watch, September 25, 1996.

¹¹² Letter from Compensated Devices, Inc. President Thomas J. Kachel to Human Rights Watch, September 12, 1996.

¹¹³ Letter from Mathews Associates, Inc. President Daniel J. Perreault to Human Rights Watch, September 16, 1996.

- to send statements of support and encouragement to the companies which have renounced future involvement in mine production activities.
- to send statements of protest to the companies which have refused to renounce future mine production activities.
- to take other actions aimed at pressuring those involved in antipersonnel mine production. Some options, in addition to letter writing, could include: purchasing shares in publicly listed companies and then submitting shareholder resolutions condemning the company's involvement in mine production; selling off shareholdings and informing the company that in doing so you have made a statement of conscience; using your consumer power to avoid purchasing commercial products of the companies which have opted not to renounce involvement in antipersonnel mine production; staging vigils at company plants or headquarters; informing local media of the company's involvement in mine production.
- to make a landmines ban an issue with your elected representatives, and encourage them to urge the Clinton Administration to implement the recommendations in this report. Write to your Congressman at: United States House of Representatives, Washington, D.C., 20515. Write to your Senator at: United States Senate, Washington, D.C., 20510. Write to President Clinton at: The White House, Washington, D.C., 20500.

With respect to U.S. companies, Human Rights Watch calls:

- on those companies which have thus far refused to renounce future involvement in antipersonnel mine production to do so immediately, in recognition of the humanitarian crisis caused by antipersonnel mines, and the growing international consensus that the weapon must be banned as soon as possible.
- on those companies which have renounced future involvement to take steps to implement and ensure the effectiveness of that policy.
- on companies within the various industries involved in mine production, such as the electronics industry, to work together to develop industry-wide codes of conduct, rejecting involvement in antipersonnel mine production.
- on competitors of the renouncing companies to refrain from trying to fill any perceived gap in the landmine component market.
- on all companies active in landmine clearance to immediately renounce future antipersonnel mine production and component supply. Companies which refuse to do so should not be eligible for U.S., U.N., or other contracts for landmine clearance.
- on all past participants in the research and development of antipersonnel mines, including major universities and other institutions of higher learning, to renounce future involvement and to draft a code of conduct for students and staff.

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Appendix A: U.S. Antipersonnel Mine Component Suppliers¹¹⁴

AAI Corp.
Location: PO Box 126, Hunt Valley, MD 21030-0126
Mine Types: GEMSS M128 dispenser ¹¹⁵
Phone: 410-628-8710 / Fax: 410-683-6498
Parent Company: United Industrial Corp. (PL) ¹¹⁶

Accudyne Corp.
Location: 340 North Franklin St., Janesville, WI 53547
Mine Types: MOPMS, Volcano M87, Gator BLU-92/B, Gator CBU-89 & CBU-78 ¹¹⁷
Phone: 608-752-9081 / Fax: 608-752-6880
Parent Company: Alliant Techsystems, Inc. (PL)

Action Manufacturing, Co.
Location: 100 East Arie Ave., Philadelphia, PA 19134
Mine Types: MOPMS, Volcano M87, Gator CBU-89 & CBU-78, Gator BLU-92/B ¹¹⁸
Phone: 215-739-6400 / Fax: 215-423-7749

¹¹⁴ In the U.S., no single company is responsible for the production of antipersonnel mines from beginning to end. The Pentagon will usually award a contract to one large company which will in turn buy component parts from many other companies. Final assembly of mines is often done in government-owned, contractor-operated Army Ammunition factories. Thus, the landmine industry in the U.S. consists more of component suppliers than "mine producers" per se.

¹¹⁵ Eagle Eye Publishing (1996).

¹¹⁶ 'PL' denotes a publicly listed company.

¹¹⁷ Letter from George R. Schneiter, Director, Strategic and Tactical Systems, Office of the U.S. Undersecretary of Defense, to Rep. Lane Evans, November 21, 1994 (henceforth referred to as "DoD Fact Sheet, 1994"); Accudyne Corp. invoice no. 2644 for the Gator, 1987; invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993. Invoices used as sources in this list come from public court documents relating to *United States of America ex rel. John Fallon, et al., v. Accudyne Corp., et al.* Invoices from the Accudyne plant in Wisconsin list the suppliers of mine components.

¹¹⁸ DoD Fact Sheet 1994; Accudyne Corp. invoice no. 4351 for the Volcano, 1987; invoice no. 2644 for the Gator, 1993. DoD awarded Action Manufacturing landmine production contracts worth \$95,549,000 in 1985-93 (Eagle Eye Publishing, 1996).

Aerospace Design, Inc. (formerly known as Ordnance Devices)
Location: 21200 South Figueroa St., Carson, CA 90746
Mine Types: Gator CBU-89 & CBU-78 ¹¹⁹
Phone: 310-328-5175 / Fax: 310-328-6813

Allen-Bradley
Location: 1414 Allen Bradley Drive, El Paso, TX 79936-6415
Mine Types: Volcano M87, Gator BLU-92/B ¹²⁰
Phone: 915-592-4888 / Fax: 915-599-9509
Parent Company: Rockwell International Corp. (PL)

Alliant Techsystems, Inc.
Location: 600 Second St. NE, Hopkins, MN 55343-8384 (PL)
Mine Types: MOPMS, Volcano M87, Gator CBU-89 & CBU-78, Gator BLU-92/B, ADAM-L, ADAM-S ¹²¹
Phone: 612-931-6000 / Fax: 612-931-5920

Amron Corp.
Location: 525 Progress Ave., Waukesha, WI 53186
Mine Types: ADAM-L & ADAM-S ¹²²
Phone: 414-547-1661 / Fax: 414-544-8481

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¹¹⁹ DoD Fact Sheet, 1994. DoD describes Aerospace Design as a designer of safety and arming devices, electronic test sets and pyrotechnic devices (Eagle Eye Publishing, 1996).

¹²⁰ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 3683 for the Volcano, 1990.

¹²¹ Accudyne Corp. invoice no. 2644 for the Gator, 1987; invoice no. 3408 for the Gator, 1990; invoice no. 3683 for the Volcano, 1990; DoD Fact Sheet, 1994; letter from Alliant Techsystems to Human Rights Watch, August 22, 1996.

¹²² DoD Fact Sheet, 1994.

BI Technologies (formerly Beckman Industrial)
Location: 4200 Bonita Pl., Fullerton, CA 92635
Mine Types: Volcano M87 ¹²³
Phone: 714-447-2300 / Fax: 714-447-2400
Parent Company: Astec (BSR) PLC (Hong Kong)

CAPCO, Inc.
Location: 1328 Winters Ave., Grand Junction, CO 81501
Mine Types: Gator CBU-89 & CBU-78, Volcano M87 ¹²⁴
Phone: 970-243-8750 / Fax: 970-243-8481

Consolidated Industries, Inc.
Location: 4015 Pulaski Pike NW, Huntsville, AL 35810
Mine Types: GEMSS M128 dispenser ¹²⁵
Phone: 205-859-6890 / Fax: 205-852-7300

Dale Electronics, Inc.
Location: PO Box 609, Columbus, NE 68602
Mine Types: Volcano M87 ¹²⁶
Phone: 402-564-3131 / Fax: 402-563-6418
Parent Company: Vishay Intertechnology, Inc. (PL)

¹²³ Accudyne Corp. invoice no. 4351 for the Volcano, 1993.

¹²⁴ DoD Fact Sheet 1994; Accudyne Corp. invoice no. 4351 for the Volcano, 1993.

¹²⁵ DoD landmine production contracts 1985-94, Eagle Eye Publishing, 1996.

¹²⁶ Accudyne Corp. invoice no. 3887 for the Volcano, 1991.

Day & Zimmerman, Inc. (also operates the government-owned Lone Star Army Ammunition Plant) ¹²⁷
Location: 1818 Market St., Philadelphia, PA 19103
Mine Types: MOPMS, CBU-89 Gator, Volcano, ADAM-L, ADAM-S ¹²⁸
Phone: 215-299-8000 / Fax: 215-299-8208

EMCO, Inc.
Location: 201 Industrial Park, East Gadsden, AL 35903
Mine Types: Volcano M87, Gator BLU-92/B ¹²⁹
Phone: 205-442-3287 / Fax: 205-442-1585
Parent Company: Mid-South Industries, Inc.

Ensign-Bickford Industries, Inc.
Location: 10 Mill Pond Lane, PO Box 7, Simsbury, CT 06070-0007
Mine Types: Volcano M87 ¹³⁰
Phone: 203-843-2528 / Fax: 203-843-2621

Ferrulmatic, Inc.
Location: 11 Jackson Rd., Totowa, NJ 07512-1000
Mine Types: M128 GEMSS dispenser ¹³¹
Phone: 201-256-5533 / Fax: 201-256-1216
Parent Company: Alliant Techsystems, Inc. (PL)

Formworks Plastics, Inc.

¹²⁷ The Louisiana Army Ammunition Plant is located at Highway 82 West, Texarkana, Texas 75505-9100. Ph: 903-334-2161. Fax: 903-334-1730.

¹²⁸ DoD Fact Sheet, 1994.

¹²⁹ Accudyne Corp. invoice no 2644 for the Gator, 1987; invoice no. 3683 for the Volcano, 1990; invoice no. 4351 for the Volcano, 1993.

¹³⁰ News release from the Office of the U.S. Assistant Secretary of Defense, May 13, 1992; DoD Contract No. DAAA21-92-C-0039, \$6.8 million for the Volcano, May 13, 1992.

¹³¹ DoD landmine production contracts, Eagle Eye Publishing, 1996. DoD describes Ferrulmatic as specializing in “machining, produceability, engineering, value engineering, stamping plasma and phosphate coating spc.”

Location: 212 Taft Ave, Orange, CA 92665
Mine Types: Gator CBU-89 & CBU-78 ¹³²
Phone: 714-637-5670 / Fax: 714-921-9643

Fort Belknap Industries
Location: RR1, PO Box 84, Fort Belknap, Harlem, MT 59526
Mine Types: Volcano ¹³³
Phone: 406-353-4801 / Fax: 406-353-2985

General Electric Company (GE)
Location: 3135 Easton Tpke, Fairfield, CT 06431 (PL)
Mine Types: TS-50 and VAR-40 ¹³⁴
Phone: 203-373-2211 / Fax: 203-373-3918

Intellitec
Location: 2000 Brunswick Lane, DeLand, FL 32724
Mine Types: Volcano M139 dispenser ¹³⁵
Phone: 904-736-1700 / Fax: 904-736-2250
Parent Company: Technical Products Group, Inc. (Intellitec was formerly Brunswick Corporation's Defense Division)

Lockheed Martin Corp.
Location: 6801 Rockledge Drive, Bethesda, MD 20817

¹³² DoD Fact Sheet, 1994. DoD describes Formworks Plastics as a developer of new plastic formulas and plastic parts, prototypes and production, missile domes, ocean fenders and aircraft parts (Eagle Eye Publishing, 1996).

¹³³ Ibid.

¹³⁴ Ibid; letter from V.A. Fontana, Tecnovar Italiana S.R.L., to Human Rights Watch, December 12, 1996; GE Plastics invoice dated March 31, 1993, to Tecnovar Italiana S.R.L. for sacks of Lexan polycarbonate manufactured in the Netherlands; GE Plastics invoice dated April 12, 1993, to Tecnovar Italiana S.R.L. for sacks of Lexan polycarbonate manufactured in the Netherlands.

¹³⁵ DoD Contract No. DAAA21-92-C-0096, \$11.9 million for Volcano components, August 13, 1993; DoD Contract No. DAAE30-95-C-0089, \$28.6 million for Volcano components, August 18, 1995; News Release from the Office of the Assistant Secretary of Defense, August 1, 1991.

Mine Types: ADAM, GEMSS M74, Gator CBU-89 & CBU-78 ¹³⁶
Phone: 301-897-6561 / Fax: 301-897-6252 (PL)

Mason & Hangar / Silas Mason Co., Inc. (operates the government owned Iowa Army Ammunition Plant) ¹³⁷
Location: 2355 Harrodsburg Rd., Lexington, KY 40504
Mine Types: ADAM, GEMSS M74, Volcano, Gator CBU-89, Claymore M18A1 ¹³⁸
Phone: 606-223-2277 / Fax: 606-223-1569

Mohawk Electrical Systems, Inc.
Location: 251 South Rehoboth Blvd., PO Box Milford, DE 19963
Mine Types: Claymore M18A1 ¹³⁹
Phone: 302-422-2500 / Fax: 302-422-0715

Nomura Enterprise, Inc.
Location: PO Box 6038, Rock Island, IL 61204-6038
Mine Types: MOPMS, Volcano ¹⁴⁰
Phone: 309-793-4081 / Fax: 309-793-1401

Parlex Corp.
Location: 145 Milk St., Methuen, MA 01844

¹³⁶ DoD Fact Sheet, 1994.

¹³⁷ The Iowa Army Ammunition Plant is located at 17571 State Highway 79, Middletown, Iowa. Ph: 319-753-7600. Fax: 319-753-7601.

¹³⁸ DoD Fact Sheet 1994. DoD awarded Mason & Hangar-Silas Mason in Iowa \$8,456,000 in landmine production contracts in 1985-89 (Eagle Eye Publishing, 1996).

¹³⁹ DoD Fact Sheet 1994.

¹⁴⁰ Ibid.

Mine Types: Volcano M87, Gator BLU-92/B ¹⁴¹
Phone: 508-685-4341 / Fax: 508-685-8809

Primetec, Inc.
Location: 4241 Corporate Square, Naples, FL 34104
Mine Types: Gator CBU-78/B ¹⁴²
Phone: 941-643-2782 / Fax: 941-643-5257

Quantic Industries, Inc.
Location: 990 Commercial St., San Carlos, CA 94070-4084
Mine Types: GEMSS M74, Gator CBU-89 & CBU-78, ADAM, Gator BLU-92/B, Volcano M87 ¹⁴³
Phone: 415-595-1100 / Fax: 415-592-4669

Raytheon
Location: 141 Spring St., Lexington, MA 02173 (PL)
Mine Types: Gator BLU-92/B ¹⁴⁴
Phone: 617-860-2846 / Fax: 617-860-2877

¹⁴¹ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

¹⁴² DoD Contract No. DAAA09-89-C-0839 for the Gator.

¹⁴³ Accudyne Corp. invoice no. 3404 for the Gator, 1987; invoice no. 3683 for the Volcano, 1990; invoice no. 4351 for the Volcano, 1993; Dod Fact Sheet 1994.

¹⁴⁴ Accudyne Corp. invoice no. 3404 for the Gator, 1990.

Thiokol Corp. (also operates the government-owned Louisiana Army Ammunition Plant)¹⁴⁵
Location: 2475 Washington Blvd., Ogden, UT 84401-2398
Mine Types: ADAM-L, ADAM-S, Claymore M18A1, M14, M16A1, PDM M86 ¹⁴⁶
Phone: 801-629-2084 / Fax: 801-629-2279

Unitrode Corp.
Location: 7 Continental Blvd., Merrimack, NH 03054 (PL)
Mine Types: Volcano M87, BLU-92/B Gator ¹⁴⁷
Phone: 603-424-2410 / Fax: 603-424-3460

Vishay Intertechnology, Inc.
Location: PO Box 231, 207 Main St., Sanford, ME 04073
Mine Types: Volcano M87, Gator BLU-92/B ¹⁴⁸
Phone: 207-324-4140 / Fax: 610-889-2161

¹⁴⁵ The Louisiana Army Ammunition Plant is located at: PO Box 358, Shreveport, Louisiana 71130. Ph: 318-459-5501. Fax: 318-459-5114.

¹⁴⁶ DoD Fact Sheet, 1994; Charles Cornett, "LAAP reports of faulty howitzer rounds outdated," *The Times* (Shreveport, LA), January 1, 1988, p.1; Linda Farrar, "Morton Thiokol: making shells, jobs," *The Times*, February 8, 1988, p.1; LAAP brochure January 1976, p.1.

¹⁴⁷ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

¹⁴⁸ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

Appendix B: U.S. Companies Renouncing Future Involvement in Antipersonnel Mine Production

ASC Capacitors (aka American Shizuki)
Location: 301 West O St., Ogallala, NE 69153
Mine Types: Volcano M87, Gator BLU-92/B ¹⁴⁹
Phone: 308-284-3611 / Fax: 308-284-8324
Parent Company: Shizuki Electric Corp. (Japan)

AVX Corp.
Location: PO Box 867, Myrtle Beach, SC 29578
Mine Types: Gator BLU-92/B ¹⁵⁰
Phone: 803-448-9411 / Fax: 803-448-5766
Parent Company: Kyocera Corp. (Japan).

Compensated Devices, Inc.
Location: 174 Green St., Melrose, MA 02176
Mine Types: Volcano M87 ¹⁵¹
Phone: 617-665-1071 / Fax: 617-665-7379

Dyno Nobel, Inc. (formerly Ireco)
Location: Eleventh FL, Crossroads Tower, Salt Lake City, UT 84144
Mine Types: MOPMS, Gator CBU-89 & CBU-78, Volcano, Gator BLU-92/B ¹⁵²
Phone: 801-364-4800 / Fax: 801-328-6452
Parent Company: Dyno Industrier A S (Norway) (PL)

Hughes Aircraft

¹⁴⁹ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

¹⁵⁰ Accudyne Corp. invoice no. 3408 for the Gator, 1990.

¹⁵¹ Accudyne Corp. invoice no. 3887 for the Volcano, 1991; invoice no. 4351 for the Volcano, 1993.

¹⁵² DoD Fact Sheet, 1994; Accudyne Corp. invoice no. 3408 for the Gator, 1990.

Location: 1100 Wilson Blvd., Suite 2000, Arlington, VA 22209-3978
Mine Types: MOPMS ¹⁵³
Phone: 703-284-4209 / Fax: 703-528-4573
Parent Company: General Motors Corp. (PL)

Kalmus & Associates, Inc.
Location: 2424 South 25 Ave., Broadview, IL 60153
Mine Types: Volcano M87, Gator BLU-92/B ¹⁵⁴
Phone: 708-343-7004 / Fax: 708-343-7016

Kemet Corp.
Location: PO Box 5928, Greenville, SC 29606 (PL)
Mine Types: Volcano M87 ¹⁵⁵
Phone: 864-963-6300 / Fax: 864-228-4161

Mathews Associates, Inc.
Location: 645 Hickman Circle, Sanford, FL 32771
Mine Types: Claymore M18A1 ¹⁵⁶
Phone: 407-323-3390 / Fax: 407-323-3115

Microsemi Corp.
Location: PO Box 1390, 8700 East Thomas Rd., Scottsdale, AZ 85251

¹⁵³ Public court documents related to *United States of America ex rel. John Fallon, et al., v. Accudyne Corp., et al.*

¹⁵⁴ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

¹⁵⁵ Accudyne Corp. invoice no. 3683 for the Volcano, 1990.

¹⁵⁶ DoD landmine production contracts. Eagle Eye Publishing, 1996.

Mine Types: Gator BLU-92/B ¹⁵⁷
Phone: 602-941-6300 / Fax: 602-947-1503
Parent Company: Microsemi Corp. (PL)

Motorola, Inc.
Location: 1303 E. Alonquin Rd., Schaumburg, IL 60196
Mine Types: Volcano M87 & Gator BLU-92/B ¹⁵⁸
Phone: 708-576-5000 / Fax: 708-576-5611 (PL)

Norris Industries (aka NI Industries)
Location: 5215 South Boyle Ave., Los Angeles, CA 90058
Mine Types: ADAM-L & ADAM-S ¹⁵⁹
Phone: 213-588-7111 / Fax: 213-588-7623
Parent Company: Mascotech, Inc. (PL)

Olin Ordnance (formerly Aerojet Ordnance)
Location: 9236 East Hall Rd., Downey, CA 90241
Mine Types: GEMSS M74, ADAM, Gator CBU-89 & CBU-78 ¹⁶⁰
Phone: 310-923-7511 / Fax: 310-904-7914
Parent Company: Olin Corp. (PL)

Plastic Products Co., Inc.
Location: 30355 Akerson St., Lindstrom, MN 55045-9456

¹⁵⁷ Accudyne Corp. invoice no. 3408 for the Gator, 1990.

¹⁵⁸ Accudyne Corp. invoice no. 4351 for the Volcano, 1990; invoice no. 3408 for the Gator, 1990.

¹⁵⁹ DoD Fact Sheet 1994. MascoTech, Inc., of Michigan, Norris's parent company, provided Human Rights Watch with a statement of renunciation.

¹⁶⁰ Ibid; DoD landmine production contracts 1985-94, Eagle Eye Publishing, 1996. Olin Ordnance was due to be renamed Primex Technologies in 1997.

Mine Types: Volcano M87, Gator BLU-92/B ¹⁶¹
Phone: 612-257-5980 / Fax: 612-257-9774

S&K Electronics
Location: 53347 Highway 93, Ronan, MT 59864
Mine Types: Volcano ¹⁶²
Phone: 406-883-6241 / Fax: 406-883-6228

S W Electronics and Manufacturing Corp.
Location: 619 Hollywood Ave., Cherry Hill, NJ 08002
Mine Types: Gator CBU-89 & CBU-78 ¹⁶³
Phone: 609-663-2700 / Fax: 609-663-1698

Siliconix, Inc.
Location: 2201 Laurelwood Rd., Santa Clara, CA 95054
Mine Types: Gator BLU-92/B ¹⁶⁴
Phone: 908-735-6100 / Fax: 908-630-9201
Parent Company: Daimler-Benz Aktiengesellschaft (Germany) (PL)

TLSI, Inc.
Location: 815 Broadhollow Rd., Farmingdale, NY 11735

¹⁶¹ Accudyne Corp. invoice no. 3408 for the Gator, 1990; invoice no. 3683 for the Volcano, 1990.

¹⁶² DoD Fact Sheet 1994.

¹⁶³ Ibid.

¹⁶⁴ Accudyne Corp. invoice no. 3404 for the Gator, 1990.

Mine Types: Volcano M87, Gator BLU-92/B ¹⁶⁵
Phone: 516-755-7005 / Fax: 516-755-7626
Parent Company: Instrument Systems, Corp. (PL)

¹⁶⁵ Accudyne Corp. Invoice no. 3408 for the Gator, 1990; invoice no. 4351 for the Volcano, 1993.

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