

have caused delays. "I don't think anybody is happy with the current fusing," one Army official said.

Two people close to the Navy said recently that reports of civilian casualties have reignited what they called a stalled Navy effort to modify one type of grenade considered notoriously unreliable by experts. A military report indicates 36,179 such grenades were used in Iraq.

Lt. Col. Stephen Lee, who manages an Army program to upgrade cluster-weapon safety, said, "There have been major improvements; it's just that they're not fielded yet."

Speaking about a type of grenade used widely in Iraq, Lee said, "There really is no difference in terms of the dud rate between the first Gulf War and the most recent conflict in Iraq."

Experts say the military has focused on building new precision weapons systems. "Safety and collateral damage are not as high a priority as mission effectiveness," said David Ochmanek, a RAND Corp. defense analyst who was a deputy assistant defense secretary in the Clinton administration.

The Defense Department defended its recent use of cluster weapons in Iraq. Gen. Richard Myers, chairman of the Joint Chiefs of Staff, blamed the civilian casualties on Hussein for deliberately placing Iraqi weapons in populated areas where they would draw return fire. "War is not a tidy affair. It's a very ugly affair," Myers said in April. "And this enemy had no second thoughts about putting its own people at risk."

The U.S. military has known about the dangers of the unexploded grenades for decades, since the Vietnam War, when Viet Cong fighters used unexploded grenades as land mines against the U.S. forces that fired them by the millions.

In the three decades since, the duds have killed thousands in Laos, says the International Committee of the Red Cross. The Red Cross, human rights groups and the European Parliament have campaigned to ban cluster-weapon use until nations agree to improve grenade reliability, avoid firing them in populated areas and regulate their cleanup.

The United States did little in the 1970s and 1980s to improve the reliability of the grenades, said Darold Griffin, former deputy director for research and development in the Army Material Command. "Some felt duds were an asset on the battlefield. You fire them into an area where an enemy is, and having some duds decreases his freedom of movement," he said.

Countries that have fought wars on their own soil, most notably Israel, have made improvements, out of fear that duds would harm their own civilians and under public pressure. Israeli-made grenades now have a dud rate of less than 1 percent, said Davison, the Israeli Military Industries official. The company has sold tens of millions of grenades to Britain, Germany, Denmark and Finland, and to Switzerland, which has proposed international standards to improve grenade reliability.

Sweden also requires its cluster grenades to have secondary fuses, said Lt. Col. Olof Carelius of the Swedish Armed Forces.

Grenades fail to detonate mostly when their landing impact is lessened, because they fall on a soft surface or sloped terrain, or they collide in midair and lose speed. The Pentagon says many grenades fail only 2 percent of the time but acknowledges dud rates are difficult to ascertain and vary widely depending on conditions. It says the weapons are ideal for hitting spread-out targets like troop formations and tank columns.

But the consequences of failure rates are magnified by the numbers of grenades used:

To destroy one air-defense system covering 100 square yards requires 75 rockets, each carrying 644 grenades—a total of 48,300. The 16 percent failure rate listed by the Pentagon produces 7,728 unexploded grenades, scattering them over 600 square yards.

Bonnie Docherty, part of a Human Rights Watch team that recently spent a month surveying battle damage throughout Iraq, said she "saw evidence of thousands of submunitions in or near populated areas."

Cluster-weapon use was "significantly more extensive than in Afghanistan," where the United States dropped 1,228 cluster bombs containing 248,056 grenades in a six-month span, according to Human Rights Watch.

A report by the Air Force in late April said U.S. aircraft over Iraq dropped 1,714 cluster bombs containing about 275,000 grenades. No report is available on the number of ground-fired cluster weapons, but throughout the war launchers could be seen firing grenade-carrying rockets.

Efforts to improve grenades stalled when an Army contractor, KDI Precision Products Inc. of Cincinnati, proved unable to mass-produce a secondary fuse for new grenades. A contract signed in 1987 was canceled in 2000.

"It's not an easy technical problem to solve," KDI president Eric Guerrazzi said. He and others say the program might have succeeded with more funding, perhaps to pay a competing firm to work as well on developing the fuses.

Spending on munitions research and procurement dropped from \$18 billion a year during the 1980s to about \$6 billion a year after the Cold War.

"The funding for R and D [research and development] in the Army was minimal, and fusing was the last on the list," said Bruce Mueller, a former Army lieutenant colonel who managed the fuse program for defense contractor Raytheon. "They develop weapons, then they develop munitions, and after they develop munitions, the last thing they worry about is how to fuse them."

A Lingering Threat

The war in Iraq is over, but the danger from the bombing remains. Cluster bombs used by coalition forces showered wide areas and their unexploded remnants pose a threat to Iraqi citizens and U.S. forces.

How They Work

Most cluster munitions consist of four components:

A dispenser, fins, internal fuses and bomblets.

Dispenser is dropped from a warplane like a conventional bomb.

Dispenser is stabilized in flight by fin assemblies.

Internal fuses trigger dispenser to open at a predetermined height above the target.

Dispenser spins and disperses bomblets to target.

Bomblets float to target and detonate.

However . . .

Mechanical and fuse failures can leave some bomblets unexploded. Their toy-like appearance can attract children, with tragic results.

What They're Used For

Cluster bombs are designed to kill troops moving in the open. The smaller explosions spread over acres can take out large numbers of the enemy.

The Bomblets

The bomblets, or submunitions, can be designed for anti-personnel, anti-materiel, anti-tank or dual purposes. They can be fin-guided or parachute-aided.

Cluster bombs can be carried by bombers such as the Air Force's B-52 Stratofortress.

Some, shaped like tennis balls, can be 1.7 inches or 3.9 inches in diameter. Others are cylindrical.

RECOGNIZING DR. KRISHNA REDDY

HON. HILDA L. SOLIS

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, July 15, 2003

Ms. SOLIS. Mr. Speaker, I rise today to recognize a great community leader and President of the Indian American Friendship Council, Dr. Krishna Reddy, for his commitment to the advancement of the U.S.-India relationship and the Indian-American community.

Dr. Reddy has a remarkable record of advocating on behalf of the Indian-American community. As Founder and President of the Indian American Friendship Council, Dr. Reddy has demonstrated his tremendous dedication to improving U.S.-India relations. His expertise and service have undoubtedly led to increased dialogue and solidarity between these two democracies.

Dr. Reddy's commitment to engaging the Indian-American community in the political process and ensuring that Indian-Americans have a voice in our government is also commendable. His organized efforts have helped educate Congress about issues important to India and the Indian-American community and fostered relationships between Members of Congress and Indian-Americans nationwide.

It is a great honor to pay tribute to Dr. Krishna Reddy and the Indian American Friendship Council.

NATIONAL SECURITY AND WARTIME LEADERSHIP

HON. TOM DeLAY

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, July 15, 2003

Mr. DELAY. Mr. Speaker, despite our success in Afghanistan and Iraq, despite our many allies around the world, and despite our unquestionable leadership here at home, the wolves of terrorism are still on the lurk.

Wherever they threaten, we must gird ourselves for battle.

This war presents many foes on many fronts, but we fight it for one purpose: the security of American people.

This week, the House considered one of the tools that will help us win this war: President Bush's "Project Bioshield" initiative. Project Bioshield, as you know, is a comprehensive program to research, develop, and acquire vaccines, drugs, and countermeasures to protect Americans from terrorism.

It will streamline government-sponsored research of biological, chemical, nuclear, and radiological weapons and medicines to combat their effects. And it will authorize a special reserve fund to purchase enough of those countermeasures to respond to catastrophic terrorist attacks.

Project Bioshield is another way to protect America, and further evidence that there is no difference between national security and homeland security. Both agendas are designed to win the war on terror and protect the American people from future attack. Thus, we will implement Project BioShield for the same reason we defeated the Taliban and liberated Iraq: Security.