DEPLETED URANIUM

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By G. Simon Harak

SINCE AT LEAST 1991, the United States has used a new class of radioactive weaponry. During the 1991 Gulf War against Iraq, the United States fired about 300 metric tons of radioactive weaponry and conservatively twice as much during the 2003 invasion of Iraq. In between, the United States employed the weapon against the people of Kosovo and Afghanistan in the attacks there.

In referring to this weapon, the military prefers the term "depleted uranium." The term is misleading since it can imply that the weapon has been "depleted" of most or all of its lethal radiation. While the weapons formed from this non-fissionable material lack the commonly understood "punch" (i.e. blast, light, heat) of nuclear weapons, they create the effects of a "dirty" bomb, spreading radiation and causing harm over a longer period of time.

There are two sources for this radioactive weaponry. The first comes as a by-product of nuclear weapon production. Radioactive materials, like uranium, emit particles that are smaller than atoms. Certain kinds of radioactive materials emit more of these subatomic particles than others. The more radioactive a metal is, the more useful it is for making nuclear weapons. The military makes atomic bombs and the "triggers" for the larger hydrogen bombs by extracting from naturally occurring uranium its most radioactive isotope, known as U-235. What remains from this extraction process is a radioactive metal which, we will see, is also used for weapons.

The second source of radioactive weaponry is from depleted enriched U-235 that has been used as nuclear fuel. Most of that fuel is used in nuclear power plants; smaller amounts of enriched U-235 (the exact percentage is classified) are also used by submarines and some navy ships. After this nuclear radioactive fuel is spent, the remaining metal can also be used for weaponry.

Uranium from both sources is called "depleted uranium" by the military. However, it should be noted that this second source of radioactive weaponry is more dangerous than the first since it has been used in nuclear reactions and therefore acquires other highly radioactive elements like plutonium.

From Waste to Weapon

From its nuclear production programs, the U.S. Department of Energy currently possesses over 700,000 tons of used uranium with about 50,000 tons being added every year. Extremely corrosive, heavy metal toxic, and with a natural tendency to break off into microscopic particles (a process called "spalling"), this metal is dangerous to handle and difficult to store. Furthermore, it has a half-life of 4.5 billion years, meaning it will take that much time for the uranium to become half as radioactive (and another 4.5 billion years for it to become one-quarter as radioactive and on and on for most of eternity…). What to do with all this poison?

Protest at depleted uranium weapons manufacturer Alliant Techsystems in Minnesota

With so much of this material, the Department of Energy began to sell it cheaply or give it away. It is used as ballast in many commercial jets or yachts as well as in some building materials.

Meanwhile, the military discovered that this uranium waste-metal has properties that make it attractive as a weapon. It is extremely hard—1.7 times as dense as lead and 2.5 times as dense as steel. At the same time it is malleable, easily shaped and sharpened. Finally, it can self-ignite and burn, like magnesium.

The military began to shape the uranium waste-metal into sharpened projectiles. It made 30mm bullets to be fired from Gatling guns mounted on A-10 Thunderbolts (nicknamed "Warthogs") capable of firing 4,000 rounds a minute. It made rocket-propelled grenades and tank shells for penetrating opponent's tanks. It made missiles whose fuselage broke apart in flight to expose a long atomic rod again for hard-target penetration. It also made uranium-waste protective shielding (called "cladding") to protect its own tanks.

Traveling at two to five times the speed of sound, these weapons easily penetrate the most hardened target. As they penetrate the armor of a tank or armored personnel carrier, friction wears them away, superheating the uranium and causing it to self-sharpen and catch fire. When it penetrates through to an open area, the metal explodes with tremendous heat. The heat turns between 17 and 70 percent of the weapon's mass into particles of uranium oxide so small that they can be considered a gas. These particles are also encased, or ceramicized, into microscopic glass containers.

Body Blow

Outside the body, this radioactive waste does not cause much damage—except of course if people are exposed to mass amounts of it in one place. Problems truly arise when this weaponized uranium waste gets inside the body, which can occur in a number of ways.

Dust and small particles can enter the bodies of those who are handling this uranium waste, especially considering its aforementioned corrosive and spalling tendencies. The threat was heightened for example on July 12, 1991, when a fire broke out at the U.S. Army Blackhorse Base in Doha, Kuwait, and 9,000 pounds of weaponized uranium waste were destroyed.

But the danger is increased exponentially after this radioactive weaponry is fired in battle. Naturally, everyone inside the tank or armored personnel carrier is burned to death. However, outside the range of this immediate killing, shrapnel-like fragments of the weapon can also penetrate a body.

The lethal blast spreads massive amounts of those tiny particles of uranium oxide. They are so small that they can be

inhaled without causing a gag response. They can also be ingested without one being aware of it. These tiny toxic particles can cling to the carbonized bodies of those inside the tank or armored personnel carrier. They can cling to the surfaces of the shattered vehicles. They can float into the air, fall and become re-suspended (especially in a desert climate) over many miles. When they finally rest on the ground, their weight gradually carries them down into the water beneath the earth. Then they re-emerge in the grains and grasses and are consumed by animals and humans.

Once inside the body, the combination of radiological and chemical toxicity of this uranium waste do more genetic damage than they could separately. They especially damage soft tissue such as lungs, liver, bone marrow etc.—places where there is the most cell division. Because the particles are ceramicized, the body cannot easily absorb and flush them, so they continue to do their internal damage over a long period of time. Children whose bodies are still growing, are, of course, more susceptible to this genetic damage, resulting in leukemia and other forms of cancer.

The U.S. military did its own private study of this radioactive weaponry and stated that the aftermath of its use showed no ill effects. The United States has blocked independent scientific studies on the effects of this radioactive weaponry both on the national and international level. However, six years ago, the College of Medicine at Basra University carried out a study into the rate of cancer among children under the age of 15 in southern Iraq from 1976 to 1999. It revealed a horrific change between 1990 and 1999. The college of Medicine in Basra, Iraq reported that between 1990 and 1999, the incidence of cancer of all types rose by 242 percent, while the rate of leukemia among children rose 100 percent. Children living in the area were falling ill with cancer at the rate of 10.1 per 100,000. In districts where the use of depleted uranium had been the most concentrated, the rate rose to 13.2 per 100,000.

Most cell division occurs in the body in the reproductive system. Thus what would be expected has indeed occurred in Iraq: an explosion of childhood genetic deformities. In Iraq, the rate of such birth defects after increasing tenfold from 11 per 100,000 births in 1989 to 116 per 100,000 in 2001, is rising even more in 2005. Birth defects are striking the children of "coalition" Gulf War vets as well.

In addition to the human cost, depleted uranium massively poisons the environment for a period of time equivalent to the age of the Earth. Nor can that toxic pollution be limited to one field of battle—or one country.

Disarming DU

In August, 1996, the UN Sub-Commission on Human Rights voted a ban on the use of depleted uranium radioactive weaponry as a weapon of mass destruction. And in February 2003 the European Parliament requested "the Member States to immediately implement a moratorium on the further use of depleted uranium ammunition (and other uranium warheads), pending the conclusions of a comprehensive study of the requirements of international humanitarian law." We should support those efforts and all efforts to ban the use of the military's radioactive depleted uranium weaponry. On Dec. 19, 1999, Philip Berrigan, Susan Crane, Rev. Steve Kelly S.J., and Elizabeth Walz performed a plowshares action against two A-10 "Warthogs," hammering on the Gatling guns and pouring their blood into the engines. In the face of the immense, nearly eternal destructiveness of this weapon, and continuing government denial of the nature of its lethality, this and similar actions seem warranted.

In the United States, Alliant Techsystems makes almost all of the radioactive bullets used for combat. The public can put pressure on this company and make sure that when they come to recruit the young minds of our country, they are denied access to them. (Watch future issues of the NVA for ideas from the WRL's Counter-Corporate-Recruitment Campaign.)

Additionally, two veterans, Melissa Sterry, a Gulf War I vet in Connecticut, and Bob Smith, a Louisiana Vietnam vet were instrumental in having their states pass laws requiring that returning veterans be tested for radioactive contamination. A similar national bill [HR 2410] was introduced to the 109th Congress in May 2005 and has been referred to the House Armed Services Committee.

Finally, Dr. Jawad Al-Ali, an oncologist with 35 years of experience, plans to undertake the first scientifically sound study of the effects of depleted uranium in Iraq. It will involve interviewing 1,000 families and will be able to discriminate between effects from chemical exposures and those from depleted uranium. The cost of the study will be high, yet the results may be of critical importance in improving health conditions in Iraq and taking steps to end future use of radioactive weapons.

The nature of this radioactive weapon gives deeper and broader force to peacemakers' contention that war scars the world in the present and for ages to come. We must make every effort to ban it, along with the warmaking that keeps calling for more and more weapons that destroy our lives and those of future generations.

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