

**A 2 Part Warning to the Citizens for the World
“Do Not Use Depleted Uranium Munitions Again”**

Dr. Doug Rokke

Former U.S. Army’s DU team health physicist

Former U.S. Army’s DU Project Director

and

George Angus Parker

Formerly Sgt with the 1st Field Laboratory Unit,

Biological-Warfare Detection Unit. Porton Down.

Great Britain

Part 1: Dr. Rokke’s comments

The leaders of the United States and Great Britain are considering a preemptive military attack against Iraq. Consequently, the potential use of military force requires the careful evaluation of the health and environmental impact of any weapon system that may be employed by U.S. or British forces in their attempts to achieve their military objectives. Consequently, I must issue a warning against the deliberate use of any munitions containing depleted uranium. Depleted uranium munitions (DU) have been used effectively in combat since 1973. Their destructive capabilities are absolutely superior to any other known munitions that can be fired by tanks, armored vehicles, aircraft, and rifles. In addition the ADAM and PDM, which are land mines, are essentially conventional explosives wrapped in shell containing uranium or a “dirty bomb”. Although DU munitions are an excellent weapon, they leave a path of death, illness, and environmental contamination. The radiological and chemical toxicity are due to uranium, plutonium, neptunium, and americium isotopes within each DU bullet. We also have all of the inherent contamination from the equipment, terrain, and facilities that were destroyed.

Upon the completion of the ground combat phase of the Gulf war, I was assigned by Headquarters Department of the Army and consequently the U.S. Central Command to clean up the depleted uranium contaminated U.S. equipment and provide initial medical recommendations for all individuals who were or may have been exposed as a consequence of military actions. Our initial observations of the DU contamination can be summed simply by three words “OH MY GOD!” Although my mission was limited to U.S. personnel and equipment all affected persons and equipment should have been processed identically. They were not! Although I and U.S. Army physicians assigned to the 3rd U.S. Army Medical Command issued immediate verbal and written medical care recommendations those still have not been complied with for not only all U.S. and coalition military DU casualties but for Iraqi military personnel and especially noncombatants, women and children, who were exposed to DU munitions contamination. A United States Defense Nuclear Agency memorandum written by LTC Lyle that was sent to our team in Saudi Arabia during March 1990 stated that quote "As Explosive Ordnance Disposal (EOD), ground combat units, and civil populations of Saudi Arabia, Kuwait, and Iraq come increasingly into contact with DU ordnance, we must prepare to

deal with potential problems. Toxic war souvenirs, political furor, and post conflict clean up (host nation agreement) are only some of the issues that must be addressed. Alpha particles (uranium oxide dust) from expended rounds is a health concern but, Beta particles from fragments and intact rounds is a serious health threat, with possible exposure rates of 200 millirads per hour on contact." end quote.

It took our team from March 1991 to June 1991 to collect and prepare 30 U.S. vehicles that were damaged or destroyed during friendly fire incidents involving DU munitions for burial or shipment to a specialized facility in South Carolina for decontamination and disposal. Thousands of other DU contaminated pieces of equipment, bunkers, and terrain were just ignored. The approximate 1 million individual DU rounds and submunitions that were used by United States and British forces were never cleaned up but left where they fell. During January 1993 following analysis of our written reports and personal discussions, scientists and physicians assigned to the United States General Accounting Office issued a report ("Operation Desert Storm: Army Not Adequately Prepared to Deal With Depleted Uranium Contamination", GAO/NSAID-93-90, January 1993, page 7) recommending that the Secretary of the Army quote:

1. ensure that appropriate Army training schools provide adequate information and training to personnel who would come in contact with DU contaminated equipment,
2. develop time frames to implement the proposed DU testing policy involving the testing of all crew members inside vehicles penetrated by DU munitions,
3. expand testing to include personnel involved in the vehicle recovery process should testing of the Army National Guard personnel show that uranium is present in excess of the standards being applied in the medical tests, and
4. develop a formal plan for dealing with the recovery of DU-contaminated equipment.

At approximately the same time that this report was being prepared, the United States Army's Environmental Policy Institute, AEPI, was tasked (December 13, 1992) by the Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational health to determine (quote):

1. The health and environmental consequences of using DU on the battlefield.
2. Which remediation technologies exist or might be developed to clean up DU contamination.
3. Ways to reduce DU toxicity.
4. How to best protect the environment from the long-term consequences of DU use.

Therefore it was and still is obvious that United States military leaders knew that using DU would cause health and environmental problems. I was asked to help conduct the research and prepare the recommendations and final AEPI report because I was the Army health physicist who helped clean up the DU mess following Desert Storm and was working for the Army preparing environmental compliance procedures. The findings issued in 1995 (Health and Environmental Consequences of Depleted Uranium Use in the

Army: Technical Report, U.S. Army Environmental Policy Institute, June 1995) were quote

1. The battlefield is contaminated with many dangerous things. The impact of DU contamination on the battlefield is not well defined. Relative to many of the other hazards, such as unexploded ordnance. The hazards are probably small; however, additional environmental modeling and data are needed to support this judgment.
2. ***DU remediation technologies involve one or more of the following: excavation and earth moving, physical separation, chemical separation, and in-place stabilization. The Army will continue to identify and evaluate remediation technologies by comparing the cost and effectiveness. From this analysis, the Army will seek effective, less expensive DU remediation technologies.***
3. ***There are no technologies available that can significantly change the inherent chemical and radiological toxicity of DU.***
4. Range management and DU recovery systems have been implemented and are being improved. Models to better describe the environmental fate and effect are being developed. DU migration on test ranges in the United States has been minimal because soil and water conditions on those test ranges tend to prevent formation of soluble DU.

Once more we can see that Army officials acknowledged that DU is toxic forever and that specific remediation procedures are required to clean up DU contamination. I then developed and verified these procedures while the DU Project Director.

Consequently, in response to the GAO report, initial reports submitted by AEPI scientists, and my/our efforts the United States Deputy Secretary of Defense issued an order that was consequently reissued on August 14, 1993 and signed by General Eric Shinseki that DOD shall:

- "1. Provide adequate training for personnel who may come in contact with depleted uranium equipment.
2. Complete medical testing of personnel exposed to DU contamination during the Persian Gulf War.
3. Develop a plan for DU contaminated equipment recovery during future operations."

The criteria describing unusual DU exposures requiring medical screening within 24 hours of exposure and consequent medical care were specified in a message from Headquarters Department of the Army dated October 14, 1993. These exposures included:

- "a. Being in the midst of smoke from DU fires resulting from the burning of vehicles uploaded with DU munitions or depots in which DU munitions are being stored.
- b. Working within environments containing DU dust or residues from DU fires.
- c. Being within a structure or vehicle while it is struck by DU munitions."

Today, at least one decade after thousands and maybe millions of individuals were exposed to DU contamination and who should have received medical care per our original 1991 recommendations and as specified in the October 14, 1993 directive less than 500 individuals have ever been provided the required radio-bioassay testing and consequent medical care. We must note that if United States personnel should receive medical care then *all* exposed individuals also must receive medical care. A letter sent to General Leslie Groves, head of the Manhattan Project (the development of the first atomic bomb), during 1943 that I obtained during Fall 1999 emphasized the need for immediate medical care. In that memorandum dated October 30, 1943, senior scientists assigned to the Manhattan Project suggested that uranium could be used as an air, water, and terrain contaminant. According to the letter sent by the Subcommittee of the S-1 Executive Committee on the "Use of Radioactive Materials as a Military Weapon" to General Groves (October 30, 1943) inhalation of uranium would result in "bronchial irritation coming on in a few hours to a few days". This is exactly what happened to those of us who inhaled DU dust during Operation Desert Storm, U.S. and KFOR soldiers and civilians in the Balkans, and residents of Vieques, Puerto Rico.

The subcommittee went on further to state that "Beta emitting products could get into the gastrointestinal tract from polluted water, or food, or air. From the air, they would get on the mucus of the nose, throat, bronchi, etc. and be swallowed. The effects would be local irritation just as in the bronchi and exposures of the same amount would be required. The stomach, caecum and rectum, where contents remain for longer periods than elsewhere would be most likely affected. It is conceivable that ulcers and perforations of the gut followed by death could be produced, even without an general effects from radiation". Verified adverse health effects from personal experience, reported by physicians, and from personal reports from individuals with known DU exposures include: (a) Reactive airway disease, (b) neurological abnormalities, (c) kidney stones and chronic kidney pain, (d) rashes, (e) vision degradation, cataracts, and night vision losses, (f) gum tissue and teeth problems, (g) lymphoma, (h) various forms of skin and organ cancer, (I) neuro-psychological disorders, (j) uranium in semen, (k) sexual dysfunction, and (l) birth defects in offspring. Similar health effects also have been documented in uranium processing facility employees of and residents living near Puducah, Kentucky, Portsmouth, Ohio; Los Alamos, New Mexico; Oak Ridge, Tennessee; and Hanford, Washington who made the DU. Employees at uranium manufacturing or processing facilities in New York, Tennessee, Iowa, Massachusetts, and the four corners area of southwest Colorado also have repeatedly reported health effects similar to those reported by verified Gulf War DU casualties. Iraqi and other humanitarian agency physicians are reporting the same health effects in exposed populations. Scottish scientists recently verified that residents of the Balkans were excreting uranium in their urine. This indicates that the uranium is mobile in the environment and is more evidence to support what we found during the DU tests in 1994 and 1995. Consequently we can not ignore the serious adverse health effects from DU exposures and these known effects substantiate the banning of DU munitions.

As a result of the 1993 GAO report, congressional inquiries, our recommendations, and an increase in observed adverse health and environmental effects; I was recalled to active duty in the United States Army as Director of the Depleted Uranium Project. I

supervised the research to verify DU hazards and processing procedures and to develop the training and education and formal guidelines for management of DU contaminated equipment, facilities, and terrain. The products of the DU project included: Three training curricula: (1) Tier I: General Audience, (2) Tier II: Battle Damage and Recovery Operations, (3) Tier III: Chemical Officer / NCO; Three video tapes: (1) "Depleted Uranium Hazard Awareness", (2) "Contaminated and Damaged Equipment Management", and (3) "Operation of the AN/PDR 77 Radiac Set"; the draft Army Regulation: "Management of Equipment Contaminated with Depleted Uranium or Radioactive Commodities"; an United States Army Pamphlet specifying "Handling Procedures for Equipment Contaminated with Depleted Uranium or Radioactive Commodities" and a redesigned radiac capable of finding and quantifying DU contamination.

The recommendations that I derived and issued, based on extensive research and first hand experience were:

1. All DU contamination must be physically removed and properly disposed of to prevent future exposures.
2. Specialized radiation detection devices that detect and measure alpha particles, beta particles, x-rays, and gamma rays emissions at appropriate levels from 20 dpm up to 100,000 dpm and from .1 mrem/ hour to 75 mrem/ hour must be acquired and distributed to all individuals or organizations responsible for medical care and environmental remediation activities involving depleted uranium / uranium 238 and other low level radioactive isotopes that may be present. Standard equipment will not detect contamination.
3. Medical care must be provided to *all* individuals who did or may have inhaled, ingested, or had wound contamination to detect mobile and sequestered internalized uranium contamination.
4. All individuals who enter, climb on, or work within 25 meters of any contaminated equipment or terrain must wear respiratory and skin protection.
5. Contaminated and damaged equipment or materials should not be recycled to manufacture new materials or equipment.

The United States Army's own task performance standards for exposure to DU are very specific and require both respiratory and skin protection. They also state that quote

“NOTE: Contamination will make food and water unsafe for consumption”
end quote.

The specific task performance requirements are that individual can quote”

Evaluation Preparation

	HANDS-ON EVALUATION	DATE:
	TASK TITLE	TASK NUMBER
	Respond To Depleted Uranium/Low Level Radioactive Materials (Dullram) Hazards (SL 1-4)	031-503-1017
ITEM	PERFORMANCE STEP TITLE	(CIRCLE ONE)
1	Identified possible hazards	GO / NO GO
	<u>NOTE: Method used depends on scenario selected</u>	
2	Assumed field expedient respiratory protection (cravat/handkerchief) immediately or donned protective mask as required	GO / NO GO
3	Warned others of DULLRAM hazard	GO / NO GO
	a. Alerted other crew members or individuals within 50 meters of the possible DULLRAM hazard	GO / NO GO
	b. Got out of vehicle and seek shelter if vehicle or munitions are on fire	GO / NO GO
4	Protected himself from contact with DULLRAM a. Administered first aid (1) Flushed open wounds with water. (2) Covered open wounds with field dressing. Did not attempt to remove any imbedded fragments b. Covered exposed skin within 50 meters of hazard (pulled down sleeves, bloused pants, put on MOPP gloves, and buttoned up coat) c. Sealed loose contamination on equipment surfaces	GO / NO GO GO / NO GO GO / NO GO
5	Reported suspected contamination to supervisor	GO / NO GO
	Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly. Allow the soldier time to retrain and retest.	
	EVALUATOR'S NAME	UNIT:
	SOLDIER'S NAME	STATUS: GO / NO GO

End quote. It is very important to note that respiratory and skin protection must be worn by all individuals who are or may be exposed to DU contamination. If this is required for United States Army personnel then it must required for *all* citizens of the world. Of special significance is that Army officials acknowledge that DU contamination will make water and food unsafe as specified during October 1943. Consequently, it is apparent the use of DU munitions is simply too dangerous to use even by the U.S. Army’s own safety standards.

Today, eleven years after the extensive use of depleted uranium munitions during the Gulf War, followed by use of DU in the Balkans; on Vieques, Puerto Rico in preparation for combat use in the Balkans, in Okinawa, and on many military installations around the world; visual evidence, personal experience, and published reports verify that:

1. Medical care has not been provided to **all** DU casualties.
2. Environmental remediation has not been completed.
3. Contaminated and damaged equipment and materials have been recycled to manufacture new products.
4. Training and education has only been partially implemented.
5. Contamination management procedures have not been distributed and implemented. The denials about DU hazards although obvious were and still are guided by the infamous Los Alamos memorandum (http://www.spidersmill.com/gwvrl/los_amos.htm) that was sent to our team in Saudi Arabia during March 1991. The author of this memorandum acknowledged serious health and environmental hazards but wrote that we should only report those findings that would permit the continued use DU munitions. **IN OTHER WORDS LIE!**

If we use DU munitions again in areas already contaminated or any new location then we will cause additional health problems and environmental contamination. Consequently, as a scientist, educator, and military officer who was given the responsibility by United States Army officials to clean up the DU mess; I must issue the following recommendation to the citizens of the world.

As the military and civilian leaders of the United States and Great Britain contemplate preemptive attacks on the nation of Iraq; the citizens of the world, all humanitarian agencies, the United Nations, and all concerned law abiding governments of the world must raise a unified voice to ban the use of depleted uranium munitions and force those nations that have used depleted uranium munitions to recognize the immoral consequences of their actions and assume responsibility for medical care and thorough environmental remediation. A nation's military personnel cannot willfully contaminate any other nation, cause harm to persons and the environment then ignore the consequences of their actions. To do so is a crime against GOD and humanity!!! WE MUST DO WHAT IS RIGHT FOR GOD AND THE CITIZENS OF THE WORLD --- BAN DU !!!

PART 2: George Angus Parker's comments

My name is George Angus Parker. I am a British Gulf Veteran.

The above warning issued by Professor Doug Rokke is a chilling reminder that war is nothing more than a monument to the incompetence of politicians and their advisors. His concerns regarding the misuse of depleted nuclear waste (Depleted Uranium - DU) as a weapon of conventional warfare are those of a very knowledgeable scientist, who has witnessed and made actual measurements to support his assertions. As evidence of that fact the reader should be aware that many of the documents and training films pertaining to depleted uranium munitions currently used by the US and UK armed forces, were produced by him and members of his team.

None of his measurements and reports of actual contamination should have been news to the US or UK authorities. They had known for many years that using depleted uranium

ammunition would lead to considerable contamination of both the environment and mankind. As early as the 1940's powdered uranium was considered for use against German agricultural and industrial targets as an area contamination/denial weapon. The idea was a product of the Manhattan Project headed by J. R. Oppenheimer. It was abandoned because of the obvious long-term health consequences for the civilian population and the environment.

As late as July 1990 (one month before Iraq invaded Kuwait) official reports warned against using DU as an antitank weapon. It was reported that the public outcry regarding the use of such a controversial weapon on a conventional battlefield would likely make it impossible to ever use it again. Obviously, those in positions to authorise the use of depleted uranium were well aware of the consequences.

For whatever reason, it was decided that DU would be used against Iraq and the warnings issued by physicists, physicians and good intentioned environmental scientists were to be ignored. That decision alone marks the Gulf conflict of 1991 as the biggest political cock-up (military term) of modern times. Bigger even than the first use of atomic bombs against the already defeated Japanese, marking the end of W.W.II.

Ironically, before the start of the ground war phase of Operation Desert Storm the British Ministry of Defence issued a warning to British ground forces. It stated that care should be taken to avoid areas where DU had been used. Probably for reasons of operational efficiency that warning was not permitted to reach the front line troops. Would an infantryman be so willing to take up his personal weapon and engage the enemy at close quarters, if he had been warned that the burning tank only feet away was belching radioactive dust? I think not! Particularly if he was made aware that the dust would not only endanger his life but also those of any children he fathered at a later date.

I am not qualified to write with the same authority as Professor Rokke on the technical aspects of DU environmental contamination because his actual experience and scientific knowledge of the subject is considerable. However, as a former vice chairman of Gulf Veterans association, I can comment on the official resistance to fully investigate the depleted uranium contamination of Gulf War Veterans. The reluctance and obstruction of attempts made by veterans who sought and still seek official investigations into this matter, has uncovered a trail of deceit and lies that shook the beliefs of many. Serving Queen and Country by placing oneself in harms way in support of the ideals, freedom, truth, and justice, no longer has the same attraction.

It was the National Gulf Veterans and Families Association (UK charity) who on advice from independent scientists initiated the clinical testing of veterans looking for Depleted Uranium. After encountering and defeating every dirty trick in the political obstruction book, the findings have now been published in a peer reviewed US medical science journal, the August 2002 issue of Military Medicine. Dr Assaf Durakovic the principle author, is himself a Gulf Veteran and was formerly a Colonel in the US Army Medical Corp. He was professor of nuclear medicine at George Town University School of Medicine and was part of the United Nations quick response to nuclear incidents.

As you can plainly see, the credentials of those learned scientists and physicians currently issuing grave warnings regarding the future use of Depleted Uranium, are impeccable. The fact that Professors Rokke and Durakovic committed what is best described as professional suicide when they decided to speak out on these issues only adds to the growing honour and international standing of these fine gentlemen. Few other scientists have lived up to the words of Robert Oppenheimer, the man initially responsible for the abuse of nuclear material in warfare. He wrote:

"There must be no barriers to freedom of inquiry. There is no place for dogma in science. The scientist is free, and must be free to ask any question, to doubt any assertion, to seek for any evidence, to correct any errors."-J. Robert Oppenheimer, Life, 10 October 1949

As veterans and human beings we owe Doug Rokke, Assaf Durakovic and others a great debt, considerably more than we owe to J. R. Oppenheimer. Even though as you can see above, he begged others to undo his injustice.

With all sincerity I can say that witnessing the pain and suffering of ill Gulf Veterans and their families, has had a dramatic effect on the way I view future military deployments by the US and UK. Things witnessed and endured have opened my eyes to the realities of the relationship between my country's government (together with the civil service) and members of the armed forces. Rather than valued members of society owed a debt of honour for defending the state, I am now aware that armed forces personnel are considered as disposable items. Something to be used abused and then discarded when broken. Further more, when made ill by the use of politically sensitive weapons such as DU they are an expensive embarrassment to be silenced when voicing concerns.

It is my sincere and heart felt belief that until such time as the UK and US governments can properly care for ill and dying veterans of war, they should refrain from deploying members of the armed forces over seas.

As for the contention should we invade Iraq again, this time to overthrow the government of that country? I contest the rational, competency and therefor the relevance of the question. My reasons are clearly explained above.

George Angus Parker

Formerly Sgt with the 1st Field Laboratory Unit, Biological-warfare Detection Unit.
Porton Down.

(Foot note: On reflection, perhaps there are good reasons to revisit the battlefields of Kuwait and Iraq. To scrape our nuclear waste from their soil and beg forgiveness from the Gods of the common people.)