

Depleted Legitimacy: The U.S. Study of Gulf War Veterans Exposed to Depleted Uranium

Dan Fahey*

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The U.S. Department of Defense (DoD) has admitted that “thousands” of Gulf War veterans may have been exposed to depleted uranium (DU) on the battlefield, but the DU Program run by the Department of Veterans Affairs (VA) has examined only 60 veterans in nearly a decade. The small study size limits the significance of its findings, and inhibits assessments of possible links between DU exposure and veterans’ health. Although VA’s reasons for maintaining an ineffective study remain unclear, political and economic considerations appear to be placed ahead of concern for veterans’ health. There is a clear need for a new DU study, under new leadership, to investigate the incidence of cancers and other health problems in the thousands of veterans who may have encountered contaminated equipment during and after the war.

THE U.S. DU PROGRAM

In 1993, the Departments of Defense and Veterans Affairs established the Depleted Uranium Follow-Up Program [DU Program] to study the health of Gulf War veterans exposed to depleted uranium. From the start, however, the DU Program was beset by difficulties and limitations, which have only become more apparent with the passage of time. Among these limitations are the small size of the study group, the release of false information about the health of veterans in the DU Program, and the exclusion of DU-exposed veterans who have reported health problems including birth defects. These shortcomings have added significance because findings from the DU Program have had a strong influence upon U.S. and international policy debates about the use of DU munitions.

Perhaps the most significant shortcoming of the U.S. study is its small size, which limits the significance and applicability of its findings. The U.S. Department of Defense conservatively estimates that approximately 866 to 932 soldiers had moderate to heavy DU exposures (above regulatory limits) during and after the Gulf War, including 104 soldiers who were inside vehicles at the time they were struck by DU penetrators.¹ In addition, DoD estimates “thousands” of other veterans may have inhaled or ingested DU

* Dan Fahey will graduate in May 2002 with a master’s degree in law and diplomacy from the Fletcher School of Law and Diplomacy at Tufts University. He served on the Board of Directors of the National Gulf War Resource Center (1996-98). Among his reports on depleted uranium is “Don’t Look, Don’t Find: Gulf War Veterans, the U.S. Government, and Depleted Uranium, 1990-2000.”

¹ Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Depleted Uranium in the Gulf (II) (Washington, DC, 2000) 7.

during entry of contaminated vehicles.² Although large numbers of troops were potentially exposed to DU, since 1993 the U.S. study of exposed veterans has assessed the health status of fewer than 60 veterans.³

The context of the DU issue in the early 1990s helps explain why enrollment in the DU study was limited to only a few dozen of the thousands of exposed veterans. As soon as the Gulf War ended in March 1991, there were concerns within the Department of Defense that public concern about the health and environmental effects of DU ammunition might make their use in future conflicts “politically unacceptable.”⁴ In the months following the war, several press reports brought public and political attention to the use of DU during the war and its potential effects on soldiers and civilians.⁵ One year after the war, Congressman Ron Wyden initiated an investigation of U.S. vehicles hit by DU munitions during the Gulf War.⁶ This Congressional investigation spurred a previously indifferent Army Surgeon General’s Office to investigate the possible effects of imbedded DU fragments on the health of U.S. soldiers.⁷

By late 1992, external interest in the use of DU ammunition and other Gulf War toxic exposures was growing beyond DoD’s ability to control it. Gulf War veterans were publicly reporting a variety of health problems,⁸ and DU was suspected as a causative agent.⁹ Community groups in the United States simultaneously called attention to DU

² Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Annual Report, November 1996 – November 1997 (Washington, DC: January 1998) 30.

³ F. Hooper, et al, “Elevated Urine Uranium Excretion by Soldiers with Retained Uranium Shrapnel,” Health Physics, Vol. 77, No. 5 (November 1999) 513. In 1997, the DU Program examined 29 of the original 33 participants at the Baltimore VAMC. Melissa McDiarmid, et al, “Health Effects of Depleted Uranium on Exposed Gulf War Veterans,” Environmental Research (2000) 82(2): 168-180; Melissa McDiarmid, et al, “Urinary Uranium Concentrations in an Enlarged Gulf War Veteran Cohort,” Health Physics 2001, 80(3): 270-3. The DU Program also tested the urine of 169 veterans in 1999, but did not assess their health status (see <http://www.va.gov/gulfwar/docs/RiskFactor2.doc>).

⁴ See e.g., LTC M.V. Ziehm, memo to Studies and Analysis Branch, Los Alamos National Laboratory, Subject: “The Effectiveness of Depleted Uranium Penetrators,” March 1, 1991; LTC Gregory K. Lyle, US Army, memorandum to Director, U.S. Defense Nuclear Agency, “Item of Interest: Depleted Uranium (DU) Ammunition,” March 1991.

⁵ See “A Hidden Danger in the Shells?” Time Magazine (18 March 1991); Nick Cohen, “Radioactive waste left in Gulf by allies,” The Independent (U.K.) (10 November 1991) 1; Nick Cohen and Tom Wilkie, “Gulf teams not told of risk from uranium,” The Independent (U.K.) (10 November 1991).

⁶ U.S. General Accounting Office, Army Not Adequately Prepared to Deal with Depleted Uranium Contamination, GAO/NSIAD-93-90 (Washington, DC: January 1993) 1.

⁷ Lt. Col. Eric Daxon and Cpt. Jeffrey Musk, Assessment of the Risks from Imbedded Depleted Uranium Fragments, AFRRRI Technical Report 93-1 (25 March 1992) 7.

⁸ See U.S. Senate, Committee on Banking, Housing and Urban Affairs, U.S. Chemical and Biological Warfare-Related Dual Use Exports to Iraq and Their Possible Impact on the Health Consequences of the Persian Gulf War (25 May 1994).

⁹ Soraya S. Nelson, “Radiation, Storm illness link alleged,” The Army Times (12 October 1992).

contamination at manufacturing, testing and training sites, as well as on the battlefields of the Gulf War.¹⁰

On January 9, 1993, the U.S. Army Environmental Policy Institute convened a private meeting to “examine the extent of the problem related to the Army’s use of depleted uranium.”¹¹ Just three weeks later, Congressional investigators revealed the problem, though they failed to note its extent. The Congressional report bluntly criticized the Army for neglecting to inform Gulf War soldiers about the battlefield hazards of DU, and failing to monitor the health of veterans wounded by or otherwise exposed to DU on the battlefield.¹² The Congressional report recommended “the testing of all crew members inside vehicles penetrated by DU munitions,” and the Army agreed to begin testing “all crew members” in July 1993.¹³

For reasons that have never been explained, someone within the Army Surgeon General’s Office decided that not “all” surviving crewmembers would in fact be tested. Although a review of records developed in the weeks and months after the war makes clear that at least 100 soldiers were inside American vehicles hit by DU rounds in so-called “friendly fire” incidents,¹⁴ the Surgeon General’s Office told Congressional investigators there were only 35 such veterans, 22 of whom may have been wounded by DU fragments.¹⁵ These 35 veterans were enrolled in the study that became the DU Program.¹⁶

Why was the study size limited? Why did the Army Surgeon General’s Office tell Congressional investigators there were only 35 veterans requiring evaluation? The Army and the DU Program are predictably reluctant to answer these questions. Based on the available evidence, it appears that military concerns about heightened public and political

¹⁰ See Grace Bukowski, et al, Uranium Battlefields Home & Abroad: Depleted Uranium Use by the U.S. Department of Defense, Rural Alliance for Military Accountability, Citizen Alert, Progressive Alliance for Community Empowerment (March 1993).

¹¹ U.S. Army Environmental Policy Institute, “AEPI Depleted Uranium Meeting, Alexandria, VA,” 9 January 1993. One participant of this meeting volunteered to “find out what the ‘itch is that needs to be scratched’ with Congress.” Another participant recommended assessing “[h]ealth effects only for indigenous population affected by contamination. NOT effects on soldiers.”

¹² U.S. General Accounting Office, supra note 6; see also Col. Robert G. Claypool, U.S. Army Medical Corps, letter to Headquarters, U.S. Army Chemical School, “Subject: Depleted Uranium (DU) Safety Training,” 16 August 1993.

¹³ U.S. General Accounting Office, supra note 6, 7, 37.

¹⁴ U.S. Army Armament, Munitions and Chemical Command, memo from Depleted Uranium Recovery Team to Senior Command Representative AMCCOM-SWA, “Vehicle Assessment Report, Depleted Uranium Contamination” (14 May 1991).

¹⁵ U.S. General Accounting Office, supra note 6, 5.

¹⁶ F. Hooper, et al, “Elevated Urine Uranium Excretion by Soldiers with Retained Uranium Shrapnel,” Health Physics, Vol. 77, No. 5 (November 1999) 513. Of note, between 1993 and 1998, the Department of Defense told five consecutive U.S. federal investigations of Gulf War veterans’ illnesses that only 35-36 veterans were exposed to DU in friendly fire incidents; in 1998 pressure from Swords to Plowshares Veterans Rights Organization, the Military Toxics Project, and the National Gulf War Resource Center forced the Pentagon to admit that approximately 104 veterans were exposed to DU in friendly fire incidents. See Dan Fahey, Don’t Look, Don’t Find: Gulf War Veterans, the U.S. Government, and Depleted Uranium, 1990-2000 (Lewiston, ME: The Military Toxics Project, March 30, 2000) 4-6.

interest in DU munitions may have contributed to the decision to limit enrollment in the DU Program, thereby creating the impression that the number of exposed veterans were few in number. A second reason may have been to limit the applicability of the DU Program's findings to the larger Gulf War veteran community. A 1993 preview of the DU Program significantly noted: "The small size of the [enrolled] population...[makes it] highly unlikely that definitive conclusions concerning cancer induction will be obtained from the study."¹⁷

In April 1994, at about the same time the DU Program was examining its first veterans, the Army commissioned an "assessment of external interest" within U.S. environmental and veterans groups in the use of DU munitions by the U.S. military.¹⁸ The Army's concern about external interest was apparently driven by financial as well as political considerations. A June 1995 report from the Army Environmental Policy Institute to Congress presciently warned: "When DU is indicted as a causative agent for Desert Storm illness, the Army must have sufficient data to separate fiction from reality. Without forethought and data, the financial implications of long-term disability payments and health-care costs would be excessive."¹⁹ The report concluded that future studies on DU should "have the potential to mitigate the real costs of remediation and health management."²⁰

As evidence emerged during the 1990s that thousands of Gulf War veterans were potentially exposed to DU,²¹ the DU Program added fewer than 30 veterans to its study. Even after a Pentagon spokesman admitted in 1998 that "thousands" of veterans might have been exposed, the DU Program examined only 50 veterans in 1999; 21 had been examined previously and 29 were newly identified.²² In 2001, while European governments assessed the health of tens of thousands of their soldiers who served in the Balkans,²³ the DU Program assessed the health of just 39 U.S. Gulf War veterans.²⁴

¹⁷ U.S. Department of Veterans Affairs, Baltimore VAMC, Department of Veterans Affairs Program for the Follow-up and Monitoring of Gulf War Veterans with Imbedded Fragments of Depleted Uranium, Draft, (23 September 1993) 11.
http://www.gwu.edu/~nsarchiv/radiation/dir/mstreet/commeet/meet3/brief3.grf/tab_h/br3h1a.txt.

¹⁸ U.S. Army Environmental Policy Institute, Public Interest Groups and Depleted Uranium, Draft Report (26 May 1994); U.S. Army Environmental Policy Institute, An Assessment of External Interest in Depleted Uranium Use by the U.S. Military, AEPI-PPR-1494 (September 1994).

¹⁹ US Army Environmental Policy Institute, Health and Environmental Consequences of Depleted Uranium Use by the U.S. Army, Technical Report (Atlanta: AEPI, 1995) 4.

²⁰ Id. 193.

²¹ See e.g., Dan Fahey, Case Narrative: Depleted Uranium (DU) Exposures, Swords to Plowshares, National Gulf War Resource Center, Military Toxics Project (20 September 1998) 274-275.

²² Melissa McDiarmid, et al, "Surveillance of Depleted Uranium Exposed Gulf War Veterans: Health Effects Observed in an Enlarged 'Friendly Fire' Cohort," J Occup Environ Med (2001) 43: 992.

²³ See Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Medical Readiness, and Military Deployments, Information Paper: Depleted Uranium Environmental and Health Surveillance in the Balkans (Washington, DC: U.S. Department of Defense, 25 October 2001) 10-13.

²⁴ Jane Stolte, Depleted Uranium Program, Email to Dan Fahey, 17 August 2001.

As long as the DU Program surveys the health of only a few dozen veterans, the presence or absence of DU-induced health problems among the hundreds or thousands of veterans with moderate to heavy exposures remains unknown. Despite the limited size of the study, several health problems possibly related to DU have been identified, including cancer, a bone tumor, neurocognitive effects and genetic mutations.²⁵ The failure of the DU Program to accurately and fully disclose these ailments, however, represents another major shortcoming of the DU Program.

“We have seen no cancers”

In January 2001, when European concerns about DU released in the Balkans hit a fevered pitch, Pentagon spokesman Dr. Michael Kilpatrick told the ambassadors of the North Atlantic Council and the NATO press corps: “We have seen no cancers or leukemia in this group [participants in the DU Program], which has been followed since 1993.”²⁶ In June 2001 at a DU conference in Germany, U.S. Army Colonel Francis O’Donnell echoed Dr. Kilpatrick’s statement, telling scientists from a dozen European governments that there have been no cancers among the 60 veterans examined by the DU Program.²⁷

Despite these explicit and public denials, at least one of the fifty veterans examined by the DU Program in 1999 had a lymphatic cancer: Hodgkin’s disease.²⁸ The existence of this cancer was discussed privately during an October 1999 meeting between DoD and VA officials. Among the meeting participants were Dr. Kilpatrick and Col. O’Donnell, the very men who, fifteen and twenty months later, respectively, told public audiences at the height of the European DU controversy that no cancers had been found. The public denials about the existence of cancer among the few veterans in the U.S. study raises the possibility that other cancers or health effects have been observed, but not publicly reported.

²⁵ Melissa McDiarmid, et al, “Health Effects of Depleted Uranium on Exposed Gulf War Veterans,” Environmental Research (2000) 82(2): 168-180.

²⁶ M. Kilpatrick, Dr., statement at NATO press briefing, Brussels, 10 January 2001, <http://www.nato.int/docu/speech/2001/s010110b.htm>. Dr. Kilpatrick is Director of the Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Medical Readiness, and Military Deployments.

²⁷ Dan Fahey, “Meeting Notes for Expert Meeting on ‘Depleted Uranium in Kosovo: Radiation Protection, Public Health and Environmental Aspects,” Bad Honnef, Germany, 19-22 June 2001. Colonel Francis O’Donnell is Director of Medical Readiness for the Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Medical Readiness, and Military Deployments.

²⁸ The Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, “Meeting with Dr. Melissa McDiarmid and her staff on October 15, 1999 to discuss the Baltimore DU Follow-Up Program and the Extended Follow-Up Program,” undated. http://www.gulflink.osd.mil/du_ii/du_ii_refs/n52en651/0089_005_0000001.htm. This document confirms that one veteran had lymphoma, but Dr. McDiarmid stated it was a Hodgkin’s Lymphoma during a phone conversation with the author on February 12, 2001. Another document on the Pentagon’s Gulf War website (GulfLink) notes that the loader of a tank penetrated by a DU round later developed cancer. It is not clear if this veteran is the same veteran later examined by Dr. McDiarmid in Baltimore. See “Interview of loader for A-14,” Lead Sheet #18932, 4 November 1998, in Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, supra note 1, http://www.gulflink.osd.mil/du_ii/du_ii_refs/n52en376/8244_006_0000002.htm.

According to the U.S. Institute of Medicine report on depleted uranium,

The lymphatic system is an important potential target for uranium radiation because inhaled insoluble uranium oxides can remain up to several years in the hilar lymph nodes of the lung. Studying the effect of uranium exposure on lymphatic cancer is more difficult than studying lung cancer because lymphatic cancer is much less common.²⁹

The occurrence of an uncommon lymphatic cancer among 50 DU-exposed veterans may be a cause for concern, but so too is the Pentagon's denial of its existence and the DU Program's unexplained public silence on the matter until long after the DU controversy had died down in Europe.³⁰ In an extensive and detailed December 2001 journal article by the DU Program administrators reporting on the 1999 testing of the 50 veterans, the cancer finding is announced – and its significance dismissed – in a mere three sentences.³¹

A second veteran examined by the DU Program in 1999 had a bone tumor in his arm,³² yet this finding was not only omitted from the 2001 public statements of Dr. Kilpatrick and Col. O'Donnell, but also noticeably missing from the published findings of the 1999 examinations.³³ According to the U.S. Institute of Medicine: "Like the lymphatic system, bone is an important potential target for the effects of uranium because uranium is distributed to the bone, replaces calcium in bone matrix, and may remain in bone for several years."³⁴ The withholding of information about the existence of cancer and a bone tumor among the few veterans in the U.S. study raises the possibility that other cancers or health effects have been observed, but not publicly reported.

In the context of the controversial nature of DU munitions, the dishonesty of Pentagon spokesmen and the silence of officials in charge of the DU Program may be seen as attempts to downplay public concerns about the health and environmental effects of DU ammunition. Their acts may also have other purposes, and effects. Decision-making about expanding the size of the study group, or funding new DU cancer research, may be based on flawed risk assessments. Similarly, assessments of the hazards of DU on battlefields, testing ranges, and manufacturing sites may be based on inaccurate information about the health of soldiers who experienced high exposures to DU. Moreover, U.S. veterans may be denied health care and disability benefits based on

²⁹ U.S. Institute of Medicine, Gulf War and Health, "Volume 1, Depleted Uranium, Pyridostigmine Bromide, Sarin, Vaccines," (Washington, DC: National Academy Press, 2000) 142.

³⁰ See Dan Fahey, "Proposal to Enhance and Expand the Depleted Uranium Follow-Up Program," (19 April 2001).

³¹ Melissa McDiarmid, et al, "Surveillance of Depleted Uranium Exposed Gulf War Veterans: Health Effects Observed in an Enlarged 'Friendly Fire' Cohort," J Occup Environ Med (2001) 43: 998

³² The VA's DU Program told the veteran the tumor was benign, but the tumor is not formally documented in a publicly released document. The veteran discussed his bone tumor in an interview with Akira Toshiro from the Hiroshima, Japan newspaper Chugoku Shimbun (4 April 2000): http://www.chugoku-np.co.jp/abom/uran/us_e/000404.html.

³³ See Melissa McDiarmid, supra note 22, 991-1000.

³⁴ U.S. Institute of Medicine, supra note 29, 143.

flawed government decision-making about the relationship between DU and cancer and other illnesses.

A third shortcoming of the DU Program, linked to the small study size, is its exclusion of DU-exposed veterans who have reported health problems, including kidney problems and birth defects.³⁵ One excluded veteran, who was in a vehicle penetrated by a DU round, told Pentagon investigators he had fathered two children since the war who have serious medical problems.³⁶ Another excluded veteran, who in July 1991 cleaned up the DU-contaminated compound at Doha, Kuwait, fathered a son after the war with a limb reduction defect.³⁷ A Marine who fought in Kuwait developed serious kidney problems after the war, as did a soldier who worked inside 27 U.S. vehicles contaminated by DU without any respiratory or other protection,³⁸ but the DU Program has excluded these veterans, too. Since the DU Program has not assessed the health of these veterans, the possible relationship between the veterans' DU exposure and the reported health effects has not been assessed.

TIME FOR A NEW DU STUDY

The DU Program does not serve the interests of Gulf War veterans. Gulf War veterans deserve a new study to determine whether the hundreds or thousands of veterans who encountered or entered equipment impacted by DU munitions have developed health problems related to their exposure. A new DU study could include:

- Focused monitoring of all friendly fire veterans.
- Health questionnaires sent to veterans who served in units known to have worked in or on contaminated equipment, or had occupational specialties that may have brought them in contact with contaminated equipment or DU debris.
- Improved coordination of research on veterans and rats.
- Clear, honest, and timely communication of study findings with veterans and Congressional policymakers.

New leadership is also needed to design and implement the study. Certainly those who have facilitated and made false statements about the health of veterans should be replaced (e.g. Dr. Kilpatrick, Col. O'Donnell), but so too should VA staff who remained silent in the face of such lies (e.g. Dr. McDiarmid). The uncertainties surrounding DU and veterans' health can only be solved through an expanded study under reliable leadership.

³⁵ See Dan Fahey, supra note 21, 97-163.

³⁶ "Interview of dismount squad leader of C-22," Lead Sheet #19455, October 15, 1998, in The Office of the Special Assistant to the Deputy Secretary of Defense for Gulf War Illnesses, Depleted Uranium in the Gulf (II) (Washington, DC, 2000), http://www.gulflink.osd.mil/du_ii/du_ii_refs/n52en656/8288_010_0000003.htm. "One born in 92 or 93 has unexplained nosebleeds for which doctors can offer no explanation, and the other, born in 1996, was born legally blind and also has an unexplained rash that won't go away (neither condition has been diagnosed by doctors)." The DU Program reports "the 50 Gulf War veterans [examined in 1999] fathered 35 children since returning from the Gulf War, all without birth defects," but the significance of this finding is diminished by the exclusion from the study of hundreds of other veterans with moderate to heavy DU exposures. See Melissa McDiarmid, supra note 22, 999.

³⁷ Dan Fahey, supra note 21, 140.

³⁸ Dan Fahey, supra note 21, 103, 126, 131.