

DEPLETED MORALITY: YUGOSLAVIA V. TEN NATO MEMBERS AND DEPLETED URANIUM

JEREMY T. BURTON

I. INTRODUCTION

In 1999, the Federal Republic of Yugoslavia (Yugoslavia) initiated proceedings against ten member nations of NATO before the International Court of Justice.¹ Included in its cause of action, Yugoslavia claimed that these nations violated international obligations designed to protect the environment, prohibit use of certain weapons, and protect against the physical destruction of a national group.² The international community focused primarily on the Yugoslavian claim that NATO bombing amounted to genocide. However, Yugoslavia's claims regarding use of prohibited weapons particularly implicated the United States for the use of depleted uranium munitions.

Depleted Uranium (DU) rounds are radioactive. However, the level of radioactivity and consequent danger which DU rounds pose to combatants and non-combatants alike is disputed by the scientific community. The U.S. acknowledged the use of DU rounds in the conflict with Yugoslavia, but the U.S. Department of Defense has maintained that the danger posed by DU radioactivity does not amount to an environmental or humanitarian crisis.³

Additionally, because DU is a recent development in the technology of warfare, it is unclear whether the use of DU is illegal under international law. Numerous 'catch-all' provisions of the Geneva Conventions and

¹ The ten cases brought before the International Court of Justice in 1999 were: *Yugoslavia v. Belgium*, 38 I.L.M. 950 (1999); *Yugoslavia v. Canada*, 38 I.L.M. 1037 (1999); *Yugoslavia v. France*, 38 I.L.M. 1059 (1999); *Yugoslavia v. Germany*, 38 I.L.M. 1075 (1999); *Yugoslavia v. Italy*, 38 I.L.M. 1088 (1999); *Yugoslavia v. Netherlands*, 38 I.L.M. 110 (1999); *Yugoslavia v. Portugal*, 38 I.L.M. 1126 (1999); *Yugoslavia v. Spain*, 38 I.L.M. 1149 (1999); *Yugoslavia v. United Kingdom*, 38 I.L.M. 1167 (1999); and *Yugoslavia v. United States*, 38 I.L.M. 1188 (1999). These cases were largely decided on similar grounds. Consequently, *Yugoslavia v. Belgium* became the lead case, which judges referred to in their declarations, separate opinions, and dissenting opinions in subsequent cases. For this reason, most of the initial cites will focus on *Yugoslavia v. Belgium*, and later cites will focus more closely on reasons for dismissing of *Yugoslavia v. United States*.

² Yugoslavia's claims specifically stated that the ten NATO nations "violated international obligations banning the use of force against another State, the obligation not to intervene in the internal affairs of another State, the obligation not to violate the sovereignty of another State, the obligation to protect the civilian population and civilian objects in wartime, *the obligation to protect the environment*, the obligation relating to free navigation on international rivers, the obligation regarding fundamental human rights and freedoms, *the obligation not to use prohibited weapons, the obligation not to deliberately inflict conditions of life calculated to cause the physical destruction of a national group.*" *Yugoslavia v. Belgium*, 38 I.L.M. 950, 950 (1999). (Emphasis added.)

³ Alex Kirby, *Pentagon Confirms Depleted Uranium Use*, (May 7, 1999), available at <http://www.bbc.com>. NATO spokesman Major Dan Baggio stated that "[t]he munitions contain no more radioactivity than is used in glow-in-the-dark watches." *Id.*

subsequent additional protocols suggest that the use of weapons of mass destruction or weapons which cause undue harm to civilian populations or the environment are illegal under international agreements.⁴ More recent agreements that specifically regulate the use of nuclear warfare may exclude DU from the class of illegal weapons.⁵ Furthermore, issues of ratification and exclusion of international agreements complicate U.S. responsibilities in connection with the use of otherwise illegal weaponry.

To determine the legal responsibilities of the U.S. in its use of DU, it is necessary to develop and examine the legal arguments advanced by Yugoslavia which would expose the U.S. to sanctions before the International Court of Justice (ICJ). To do so, it is first important to start with the complaint adjudicated before the Court. Second, analysis of the nature of DU is necessary to make an informed decision as to whether additional grounds exist for the international community to base a judgment against the U.S. Finally, in examining the legality of DU munitions use by the U.S., it is paramount to examine relevant international agreements.

II. "YUGOSLAVIA V. URANIUM"

Yugoslavia's complaint to the ICJ based jurisdiction on Article 36, paragraph 2 of the Statute of the Court and Article IX of the Convention on the Prevention and Punishment of the Crime of Genocide, adopted by the General Assembly of the United Nations on 9 December 1948.⁶ In their complaint, Yugoslavia asserted that use of depleted uranium had far-reaching health consequences for human life and consequences for the environment.⁷ Yugoslavia claimed that this was in direct violation of the Geneva

⁴ The catch-all provisions are contained in Geneva Convention Additional Protocol I: Part III: Section I. Method and Means of Warfare, available at <http://www.tamilnation.org>.

Art. 35. Basic Rules:

In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering. It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

Art. 36. New Weapons:

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.

⁵ 36 I.L.M. 1454 (1997). Diplomatic Conference to Adopt a Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage and to Adopt a Convention on Supplementary Funding. Annex, Article 1 Definitions (1)(c) this section does not include depleted uranium in the definition of nuclear material.

⁶ *Yugoslavia v. Belgium*, 38 I.L.M. 950, 951.

⁷ *Id.*

Convention of 1949 and the Additional Protocol No. 1 of 1977 which addressed the protection of civilians and civilian objects in time of war, and the obligation to protect the environment.⁸ More specifically the claims advanced by Yugoslavia stated:

By taking part in the use of weapons containing depleted uranium, the Kingdom of Belgium has acted against the Federal Republic of Yugoslavia in breach of its obligation not to use prohibited weapons and not to cause far-reaching health and environmental damage.

By taking part in activities listed above, and in particular by causing enormous environmental damage by using depleted uranium, the Kingdom of Belgium has acted against the Federal Republic of Yugoslavia in breach of its obligation not to deliberately inflict on a national group conditions of life calculated to bring about its physical destruction, in whole or in part.⁹

Yugoslavia's request for relief demanded that the NATO member nations "cease immediately use of force and refrain from any act or threat of use of force against the Federal Republic of Yugoslavia."¹⁰

The International Court agreed to a preliminary hearing on the matter.¹¹ During oral argument in two of the cases, Yugoslavia attempted to base jurisdiction on historical agreements signed between the Kingdom of Yugoslavia and the NATO member nations.¹² Focusing on jurisdictional questions, the court recognized a prudential issue in the claim advanced by Yugoslavia and stated that "the Court, under its Statute, does not automatically have jurisdiction over legal disputes between States."¹³ In explaining the problem it stated "the Court can therefore exercise jurisdiction

⁸ *Id.*

⁹ *Id.* at 952.

¹⁰ *Id.*

¹¹ *Id.* at 953. The ICJ granted the hearing pursuant to Article 74, paragraph 3, of the Rules of Court which states: 3. The Court, or the President if the Court is not sitting, shall fix a date for a hearing which will afford the parties an opportunity of being represented at it. The Court shall receive and take into account any observations that may be presented to it before the closure of the oral proceedings. *Id.*

¹² *Id.* at 954. Specifically Yugoslavia referred to agreements under a 1930 convention between Belgium/Yugoslavia, and a 1931 Treaty between the Netherlands and Yugoslavia. *Id.*

¹³ *Id.* at 956.

only between States parties to a dispute who not only have access to the Court but also have accepted the jurisdiction of the Court."¹⁴

The Court proceeded to examine the three avenues of jurisdiction proposed by Yugoslavia. First, it considered jurisdiction conferred by the parties to the International Court of Justice over disputes in general. The second consideration was jurisdiction under the Genocide Convention, which governed only jurisdiction concerning matters of genocide. Third, the ICJ discussed jurisdiction through treaties of the parties granting a third party the right to resolve disputes.

A. CONFERRED JURISDICTION

The first instrument the court examined to determine whether it had jurisdiction was Yugoslavia's declaration signed on April 25, 1999. This declaration gave the Court jurisdiction "in all disputes arising or which may arise after the signature of the present Declaration."¹⁵ Here, the Court decided to scrutinize the Declaration's time limitation closely. Yugoslavia argued that NATO's bombing attacks on 28 April, 1 May, 7 May and 8 May 1999, all "gave rise to a disagreement on a point of law or fact."¹⁶ The court therefore surmised that "it [was] sufficient to decide whether, in terms of the text of the declaration, the dispute brought before the Court 'arose' before or after 25 April 1999, the date on which the declaration was signed."¹⁷ Upon examination, the Court found that claims were directed generally against "the bombing of the territory of the Federal Republic of Yugoslavia," rather than any specific attack.¹⁸ It also found that the bombings began on March 24, 1999, and had been continuous beyond April 25, 1999. As a result, it acknowledged that the legal dispute arose before April 25, 1999.¹⁹ In making this determination, the Court reasoned that each individual air attack did not give rise to a subsequent cause of action, but instead constituted the continuation of a dispute arising before April 25, 1999.²⁰ The court then concluded that these attacks were not within the jurisdiction conferred by Yugoslavia in the Declaration.²¹

¹⁴ *Id.* Jurisdiction may be in general form or for the individual dispute concerned. The court went on to note that a request for provisional measures could be decided before the court had established jurisdiction on the merits of the case, but that, that it must appear, prima facie, that the court has jurisdiction. *Id.*

¹⁵ *Id.*

¹⁶ *Id.* at 957.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* at 958. The court noted, "[i]t is for each State, in formulating its declaration, to decide upon the

The Court additionally examined whether Yugoslavia was a party to the Statute allowing jurisdiction.²² Belgium argued that "the Federal Republic of Yugoslavia is not the continuator State of the former Socialist Federal Republic of Yugoslavia as regards membership of the United Nations."²³ Belgium also argued that "not having duly acceded to the Organization, it is in consequence not a party to the Statute of the Court and cannot appear before the latter."²⁴ However, because the court already ruled that the dispute arose before Yugoslavia conferred jurisdiction, it declined to address this argument.²⁵

B. GENOCIDE JURISDICTION

Yugoslavia also attempted to base jurisdiction on Article IX of the Genocide Convention. This granted the Court jurisdiction to hear cases between contracting parties.²⁶ Again, Yugoslavia maintained that "by causing enormous environmental damage and by using depleted uranium," NATO member nations breached their obligations under the Genocide Convention.²⁷ However, Belgium argued that pursuant to the Genocide Convention, the dispute in question did not come within the 'genocide jurisdiction' of the court.²⁸

The court recognized that both Yugoslavia and Belgium were parties to the Genocide Convention without reservation.²⁹ It further decided that jurisdictional rules required Yugoslavia's claims to fall within the definition of genocide recognized by the Convention. According to this definition:

Genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:

limits it places upon its acceptance of the jurisdiction of the Court; this jurisdiction only exists within the limits within which it has been accepted." *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.* at 958-59.

²⁸ *Id.* Belgium argued that it was impossible to find an intent to commit genocide or even the appearance of an intent to commit genocide. It argued that the NATO operation was directed against Yugoslavia's military machine and military-industrial complex. Belgium concluded "that since the claims of the Federal Republic of Yugoslavia manifestly fall totally outside the scope of the Convention, [the Court] has no prima facie jurisdiction to consider Yugoslavia's Application on the basis of said Convention." *Id.*

²⁹ *Id.*

- (a) Killing members of the group;
- (b) Causing serious bodily or mental harm to members of the group;
- (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
- (d) Imposing measures intended to prevent births within the group;
- (e) Forcibly transferring children of the group to another group.³⁰

Under this definition, the court found that the element of intent was not satisfied. It therefore concluded that "at this stage of the proceedings, that the acts imputed by Yugoslavia, cannot accordingly constitute a basis on which the jurisdiction of the Court could prima facie be founded in this case."³¹

C. JURISDICTION BY HISTORICAL AGREEMENT

During oral arguments, Yugoslavia raised an additional ground for jurisdiction in two cases. Its argument rested on historical agreements that the Kingdom of Yugoslavia signed with Belgium and the Netherlands. The court rejected the argument, stating that in the interest of fairness it could not allow this ground Yugoslavia raised so late in the proceedings.³²

The Court justified its refusal to hear Yugoslavia's case on jurisdictional arguments.³³ Nonetheless, the Court explicitly reserved judgment over the merits in all but two of the cases.³⁴ By a twelve to four vote in *Yugoslavia v. Belgium*, the Court decided not to accept the case.³⁵ The court reserved subsequent procedure for further decisions in a fifteen to one

³⁰ *Id.*

³¹ *Id.*

³² *Id.* at 960.

³³ *Id.* at 961.

³⁴ *Id.* "[T]here is a fundamental distinction between the question of the acceptance by a State of the Court's jurisdiction and the compatibility of particular acts with international law; the former requires consent; the latter question can only be reached when the Court deals with the merits after having established its jurisdiction and having heard full legal arguments by both parties." *Id.*

³⁵ *Id.* at 962.

vote in *Yugoslavia v. Belgium*.³⁶ It also admonished the parties "not to aggravate or extend the dispute."³⁷

Of all the judges, only the Yugoslavian ad hoc judge made mention of DU in a separate opinion.³⁸ In his dissenting opinion, Judge Kreca, the Yugoslavian judge noted:

The arsenal used in the attacks on Yugoslavia contains also weapons whose effects have no limitation either in space or in time. In the oral proceedings before the Court, the Agent of the United States explicitly stressed that depleted uranium is in standard use in the United States Army. The assessment of the effects of depleted uranium should be left to science. The report by Marvin Resnikoff of Radioactive Management Associates on NMI elaborated on these effects: "Once inhaled fine uranium particles can lodge in the lung alveolar and reside there for the remainder of one's life. The dose due to uranium inhalation is cumulative. A percentage of inhaled particulates may be coughed up, then swallowed and ingested. Smoking is an additional factor that needs to be taken into account. Since smoking destroys the cilia, particulates caught in a smoker's bronchial passages cannot be expelled. Gofman estimates that smoking increases the radiation risk by a factor of 10. Uranium emits an alpha particle similar to a helium nucleus, with two electrons removed. Though this type of radiation is not very penetrating, it causes tremendous tissue damage when internalized. When inhaled, uranium increases the probability

³⁶ *Id.* Judge Oda in a separate opinion argued that the matter should be permanently dismissed in all ten cases as it was in the cases of *Yugoslavia v. Spain* and *Yugoslavia v. United States*, reasoning that the Federal Republic of Yugoslavia was not a member of the United Nations and that the claim of genocide was unfounded.

³⁷ *Id.*

³⁸ 17 I.L.M. 1292 (1978). Article 31 of the Statute of the Court states: In every case submitted to the Court, the President shall ascertain the views of the parties with regard to questions of procedure. For this purpose he shall summon the agents of the parties to meet him as soon as possible after their appointment, and whenever necessary thereafter. International Court of Justice: Revised Rules of the Court.

Rule 35 provides: If a party proposes to exercise the power conferred by Article 31 of the Statute to choose a judge ad hoc in a case, it shall notify the Court of its intention as soon as possible. If the name and nationality of the judge selected are not indicated at the same time, the party shall, not later than two months before the time-limit fixed for the filing of the Counter-Memorial, inform the Court of the name and nationality of the person chosen and supply brief biographical details. The judge ad hoc may be of a nationality other than that of the party which chooses him. International Court of Justice: Revised Rules of the Court. *Id.*

of bone cancer, or, in the bone marrow, leukemia. Uranium also resides in soft tissue, including the gonads, increasing the probability of genetic health effects, including birth defects and spontaneous abortions. The relationship between uranium ingested and the resultant radiation doses to the bone marrow and specific organs...are listed in numerous references. The health effects are also age-specific. For the same dose, children have a greater likelihood than adults of developing cancer.³⁹

Judge Kreca argued on equitable grounds that this is precisely the nature of cases which the International Court of Justice was founded to hear.

In most of the cases before the International Court, the judges entered separate opinions clarifying their position on the prudential dismissal of the case. While many of the judges supported the ruling of the court as to time limitations imposed by Yugoslavia in the document which conferred jurisdiction, a number of judges focused on the logic of this decision. The dissenting judges advanced the argument that a continuous course of conduct in violation of international law is not dated by the time it began. Instead they noted that a violation of international law is a continuous and uninterrupted course of conduct until it ends.

Another prudential matter noted in the opinions was the importance of the International Court's mission of maintaining peace and security. This overriding purpose remained, whether military actions qualified as a 'legal dispute,' whether the court was powerless to enforce judgment, whether Article IX of Genocide Convention was an appropriate basis of jurisdiction, and whether Yugoslavia was a party to the statute.⁴⁰

³⁹ *Yugoslavia v. Belgium*, 38 I.L.M. at 991.

⁴⁰ Judge Oda specifically enumerated reasons why the Court did not have 'conferred jurisdiction' over the matter. (1) The Federal Republic of Yugoslavia was not the successor state to the Socialist Federal Republic of Yugoslavia and therefore not a member of the United Nations. Only member nations fall under the jurisdiction of the Court. *Id.* at 975-76. (2) The claims did not amount to a 'legal dispute' and therefore were not judicable under Article 36, paragraph 2 of the Statutes of the Court. *Id.* at 976-77. (3) Under Article 38, paragraph 5, which requires consent for jurisdiction, France, Germany, Italy, Spain and the United States never granted jurisdiction. (4) The jurisdiction given by Yugoslavia could only apply with prior reciprocated jurisdiction granted by Belgium, Canada, the Netherlands, Portugal, Spain and the United Kingdom. However, in the jurisdiction granted by Spain and the United Kingdom, certain clauses prohibited actions by nations granting jurisdiction within the last twelve months. As to the other four nations, Yugoslavia's grant of jurisdiction was arguably not in good faith. *Id.* at 977. (5) Based on the historical importance of sovereign immunity, the bottom line in each and every case is acceptance by both parties. *Id.* at 978-79. Judge Oda further noted that settlements between two parties not in agreement as to the Court's jurisdiction are unrealistic. *Id.*

As to 'genocide jurisdiction,' Judge Oda noted that (1) Spain and the United States made proper reservations to jurisdiction under this statute and that Portugal had not become a party to the

Another jurisdictional problem arose in *Yugoslavia v. United States*. The problem involved an U.S. reservation to Article IX of the Genocide Convention.⁴¹ On November 25, 1988 the U.S. declared, "[t]hat with reference to Article IX of the Convention, before any dispute to which the United States is a party may be submitted to the jurisdiction of the International Court of Justice under this Article, the specific consent of the United States is required in each case."⁴² In this case, the U.S. refused to give jurisdiction. Furthermore, the alternative ground for jurisdiction, Article 38, paragraph 5, of the Rules of Court, also required consent by party nations, which the U.S. likewise refused to grant.⁴³ The International Court voted twelve to three to reject the request submitted by Yugoslavia and by twelve to three to remove this case from its docket.⁴⁴

The difficulty arising with the court throughout the proceedings brought by Yugoslavia is fundamentally a problem of court power. The International Court of Justice is clearly a court with tenuous jurisdiction. Without the effective power to enforce its pronouncements, judges reasonably gravitate towards prudential doctrines. With a system of jurisdiction predicated in most instances on the consent of nations who face possible sanctions (however toothless those sanctions might be), the probability of refusing to confer jurisdiction on the court is high.

Because of these considerations and the troubling nature of a genocide charge, the court declined to decide that matter, reserving judgment in all cases except those against the U.S. and Spain. Venturing into the merits of the case on the issue of genocide is clearly a matter of futility. Many questions remain undecided regarding the nature of depleted uranium and the legality of its use in armed conflict. By refusing to decide this matter, the Court may have left open an avenue of attack on DU itself. However, that attack must overcome scientific as well as legal obstacles. The decisions of

convention until after the filing of Yugoslavia's complaint. And, (2) the claims did not amount to a 'legal dispute' relating to the Genocide Convention. *Id.* at 980-82.

Judges Jiuyong, Vereshchetin, and Vice-President Weeramantry advocated that the Court immediately issue an order asking for both parties to comply with their obligations under the United Nations Charter. These judges advocated the Court do so without undertaking a legal analysis of the case due to the level of human suffering in both Kosovo and Serbia. *Id.* at 1016. Judge Vereshchetin additionally argued that it was an "absurd conclusion that Yugoslavia intended by its declaration of acceptance of the Court's jurisdiction to exclude the jurisdiction of the Court over her Applications instituting proceedings against the Respondents." *Id.* at 1018.

⁴¹ In his dissenting opinion, Judge Kreca argued that the rule against genocide was such a fundamental rule that the reservation of the U.S. should be declared void. 38 I.L.M. 1188, 1200.

⁴² *Yugoslavia v. United States*, 38 I.L.M. at 1018.

⁴³ *Id.* at 1195.

⁴⁴ *Id.*

the International Court of Justice mention the effects of DU only briefly. However, they do examine the alleged harm that these weapons cause.

III. DEPLETED URANIUM

Uranium is an element more plentiful than mercury and silver, and resembles a heavy, silvery-white metal.⁴⁵ Each of the fourteen isotopes of Uranium is radioactive.⁴⁶ Uranium in its naturally occurring state contains approximately 99.2830% U²³⁸, 0.7110% U²³⁵, and .0054% U²³⁴.⁴⁷ Uranium, specifically U²³⁵, is useful as nuclear fuel.⁴⁸ U²³³ may also be used as nuclear fuel.⁴⁹ Depleted Uranium is a by-product of the uranium enrichment process. DU is Uranium with its percentage of U²³⁵ lowered to about 0.2%.⁵⁰ It is used in inertial guidance devices, gyro compasses, counterweights for aircraft control surfaces, as ballast for missile reentry vehicles, and as shielding material.⁵¹ As a consequence of its radioactivity, "Uranium and its compounds are highly toxic, both from a chemical and radiological standpoint."⁵²

In its "Environmental Exposure Report: Depleted Uranium in the Gulf," the United States Department of Defense (DoD) provides an overview of Depleted Uranium from the government's perspective. The DoD report is based on standard acquisition, test and evaluation processes for new weapons systems.⁵³ In describing the frequency of Uranium, the DoD states that the average concentration is three parts per million, "roughly a tablespoon in a truckload of dirt."⁵⁴

The report analyzes the effectiveness of DU in armor-piercing weapons, and possible deleterious effects. According to this analysis and other studies conducted on areas affected by DU weapons, the Department of Defense claims:

⁴⁵ CRC Handbook of Chemistry & Physics. B-40. (Robert C. Weast et al; eds. 1984-85).

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.* at B-41. "U²³⁵ can be concentrated by gaseous diffusion and other physical processes, if desired, and used directly as a nuclear fuel, instead of natural uranium, or used as an explosive. Natural uranium, slightly enriched with U²³⁵ by a small percentage, is used to fuel nuclear power reactors for the generation of electricity." *Id.*

⁴⁹ *Id.* "One pound of completely fissioned uranium has the fuel value of over 1500 tons of coal." *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ Environmental Exposure Report, Depleted Uranium - A Short Course at 1, available at <http://www.gulflink.osd.mil>.

⁵⁴ *Id.* "All of us take in uranium every day from the air, water, and foods. On average, each person takes in 1.9 micrograms of uranium a day and inhales 0.007 micrograms each day. *Id.*

DU's ability to self-sharpen as it penetrates armor is the primary reason why DU is a more potent weapon than alternate tungsten munitions, which tend to mushroom upon impact. Fragments and uranium oxides are generated when DU rounds strike an armored target. The size of particles varies greatly, larger fragments can be easily observed, while very fine particles are smaller than dust and can be inhaled and taken into the lungs. Whether large enough to see, or too small to be observed, DU particles and oxides contained in the body are all subject to various degrees of solubization – they dissolve in bodily fluids, which act as a solvent.⁵⁵

As the paper alludes, however, uranium deposited in bodily tissue is slow to dissolve or dissipate.⁵⁶ Some of the effects of DU listed in the report include cellular necrosis (death of cells) in the kidney and atrophy in the tubular walls of the kidney resulting in a decreased ability to filter impurities from the blood.⁵⁷

The DoD report divides its analysis of the potential dangers of DU into reports on the chemical effects and radiological effects of DU.

A. CHEMICAL EFFECTS

The DoD report states that the human body will excrete ninety percent of the Uranium present within twenty-four to forty-eight hours, and that the body will retain ten percent to be deposited in the bones, lungs, liver, kidney, fat and muscle.⁵⁸ The report notes that "insoluble Uranium oxides, if inhaled, can remain in the lungs for years, where they are slowly taken into the blood and then excreted in urine."⁵⁹ The government also notes that the kidney is highly susceptible to damage from Uranium.⁶⁰

Although the report acknowledges the effects of DU, it states few Gulf War veterans have been diagnosed with maladies consistent with DU radiation poisoning.⁶¹ The DoD therefore concluded that soldiers with high

⁵⁵ *Id.*

⁵⁶ The DoD states "over time, all uranium is soluble." Although it admits in certain uranium oxides, that process may take years. *Id.*

⁵⁷ *Id.* at 2.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

exposures to DU do not show a higher rate of kidney problems than the general U.S. population.⁶²

The DoD report then turns to the Occupational Safety and Health Administration (OSHA) and the American Conference of Governmental Industrial Hygienists (ACGIH) for Uranium exposure levels acceptable during a workweek.⁶³ The standards for Permissible Exposure Limits (PELs) are 0.05 mg/m³ for soluble compounds and 0.25 mg/m³ for insoluble compounds.⁶⁴

Finally, in its analysis of the chemical effects of DU, the government concludes that friendly fire victims are most likely to have had the highest exposure to DU.⁶⁵ The government acknowledges it was and is difficult to assess the damage relative to exposure in these soldiers, because (1) friendly fire victims often have more immediate traumatic injuries and (2) tests may be unable to detect early signs of DU poisoning.⁶⁶ In its most recent studies, however, the government insists that tests have not shown abnormalities related to DU exposure.⁶⁷

B. RADIOLOGICAL EFFECTS

The DoD report noted that Depleted Uranium has a lower content of U²³⁴ and U²³⁵ than natural uranium, due to removal of those isotopes during the enrichment process.⁶⁸ The DoD explains how an element becomes radioactive:

The number of heavy particles (protons and neutrons) in the nucleus of an atom determines the stability of the element. Unstable elements 'decay' through a nuclear transformation process into new elements...This process of decay - radioactivity - emits one or more forms of ionizing radiation (alpha particles, beta particles, neutrons, X-rays, or gamma rays) during each nuclear transformation. This decay process

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* "PELs are based on the principle that there is a threshold below which no adverse health effects occur. As the exposure increases above the threshold, the adverse health effect becomes more severe." *Id.* at 3.

⁶⁵ *Id.* Friendly fire is the battlefield euphemism for casualties sustained by soldiers who are accidentally fired upon by allies.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

continues until a stable (non-radioactive element is produced....U²³⁸ becomes lead.⁶⁹

The government report notes that rapid death may occur when high doses of radiation are received in short periods of time.⁷⁰ At lower doses, delayed effects may result.⁷¹ The government also states that while radiation clearly may cause cancer, studies of effects at low doses are inconclusive.⁷² During its decay, DU emits alpha, beta, and gamma radiation.⁷³ Therefore, the government argues that the proper way to analyze DU exposure is to measure radiation exposure.⁷⁴

Due to the difficulty of adopting a threshold standard, the DoD again turned to a governmental agency to set limits for safe exposure to radiation. The DoD adopted the current standard set by the National Council on Radiation Protection (NCRP).⁷⁵ The NCRP standard is as follows:

- Five rems in a year for workers (to protect against cancer).
- Fifty rems in a year for workers to any organ (to protect against threshold effects, such as radiation burns, etc.).
- Fifty rems in a year to the skin or to any extremity.
- Fifteen rems in a year to the lens of the eye (to protect against cataracts).
- 0.1 rem in a year (seventy-year lifetime) for members of the public.⁷⁶

⁶⁹ *Id.* at 4.

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.* "For low doses, there is no reliable data relating dose to health effects or showing a threshold, or minimum, level for cancer . . . reports from the Japanese atomic bomb survivor studies conclude that the location and reality of such a threshold, if one does exist, are difficult to assess." *Id.* at 4-5.

⁷³ *Id.*

⁷⁴ *Id.* Again, the DoD report points out that Americans receive a dose of 0.3 rem/year from natural sources of radiation. The DoD states that an American's lifetime exposure may be as high as twenty-one rems, and that in other countries individuals may have three times this lifetime exposure rate "with no unusual rates of cancer or other diseases linked to radiation." *Id.*

⁷⁵ *Id.* at 5.

⁷⁶ *Id.* at 6. "These limits are in addition to the radiation doses a person normally receives from natural background, medical testing and treatment, and other sources." *Id.*

The DoD adopted five rems/year as its limit for evaluating safe exposure.⁷⁷

The DoD concluded from its studies that a tank commander, gunner, and loader if they operate a tank continuously for a year would receive a dose less than 25% of the current, annual occupational limit of five rems.⁷⁸ Exposure on the exterior of the tank would result in exposure at one half the occupational limit.⁷⁹ Contact with the bare skin produces 0.2 rem/hour and would only exceed the occupational limit if DU was in direct contact with the skin for over 250 hours.⁸⁰

One clear problem with the government report is that it is intended to educate troops who might be briefly exposed to DU by friendly fire. The DoD does not analyze the effects of DU on targets. After all, DU munitions are designed to be lethal. Additionally, the DoD fails to address the after effects of DU on the civilian population, which include radioactive shrapnel embedded in individuals past the 250 hour mark, and children around tank hulks destroyed with DU and therefore contaminated with radiation.

As a result of potential humanitarian dangers associated with the use of DU, the United Nations Commission on Human Rights (UNCHR) received a report prepared by an NGO, titled "Human Rights and Toxics: Depleted Uranium and the Gulf War."⁸¹ In this report, the UN committee submitted information on the use of weapons containing Depleted Uranium by the United States. The statement also compiled information on weapons of destruction, as a subset of which it included weapons containing Depleted Uranium.⁸² The report found that the allied forces used 800 tons of DU munitions in the Gulf War.⁸³ Investigators also reported that shell casings were still present throughout the region in civilian locales.⁸⁴ The report further stated that "[t]housands of children in Iraq suffer from illness related to depleted uranium ... children and animals in the area are being born with serious congenital anomalies and disabilities associated with low grade radiation poisoning."⁸⁵

Since the report's submission, the UN created a task force to examine the environmental impact of DU weapons.⁸⁶ Upon formation of the

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.* The DoD reasoned that actual exposure based on realistic times spent in tanks would be closer to 0.1 rem in a year. *Id.*

⁸⁰ *Id.* at 7.

⁸¹ International Education Development/Humanitarian Law Project. *Human Rights and Toxics: Depleted Uranium and the Gulf War.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ Neil Buckley, *NATO 'Hindered' Kosovo Inquiry*, Financial Times (London), p. 10. October 15,

task force, NATO refused to cooperate with the investigation of DU.⁸⁷ NATO took the position that "no scientific study had ever proved depleted uranium shells could cause cancer in Iraq or Kosovo."⁸⁸ Further reports suggested that "in private, NATO officers have been telling humanitarian officials in Kosovo to stay away from any area where DU was used."⁸⁹ Other government documents suggest that DU weapons pose an element of risk to civilians. In a memo, Lt. Gregory K. Lyle stated, "alpha particles (uranium oxide dust) from expanded rounds is a health concern but, Beta particles from fragments and intact rounds is a serious health threat, with a possible exposure rate of 200 millirads per hour on contact."⁹⁰

There is some dispute over scientific evidence on the dangers of DU. Roger Coghill, a British Biologist, predicted the use of DU weapons would generate more than 100,000 fatal cancer cases.⁹¹ Dr. Coghill stated that scientists in Greece reported radiation levels at 25% above normal when the wind blew in from Kosovo.⁹² According to Dr. Coghill "no epidemiological study can ever prove causality – all it can do is show an association, for proof you need cellular studies."⁹³ Dr. Hari Sharma, of the University of Waterloo in Ontario, found DU in the urine of nearly 50% of the British veterans he tested.⁹⁴ However, his research was disputed and eventually dismissed.⁹⁵ Newer, more accurate research may corroborate Dr. Sharma's research.⁹⁶ Another researcher, Patricia Horan, discovered DU in the urine of a Gulf War vet eight years after the war.⁹⁷ However, these studies have not yet been peer-reviewed, and the Pentagon started to cite studies demonstrating that DU is not as dangerous as previously thought.⁹⁸ Major General Boris Alekseyev, the

1999. The article additionally states that NATO referred the task force to the U.S. because only U.S. aircraft fired DU weapons.

⁸⁷ Robert Fisk, *NATO Obstructs an Inquiry Into Depleted Uranium*, The Independent (London), p. 16. October 16, 1999.

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ Memo from Gregory K. Lyle, LTC. USA. "Item of Interest" The National Online.

⁹¹ Alex Kirby, *Depleted Uranium Threatens Balkan Cancer Epidemic*. (July 30, 1999), available at <http://www.bbc.com>.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ Alex Kirby. *Depleted Uranium Study 'Shows Clear Damage.'* (August 27, 1999), available at <http://www.bbc.com>.

⁹⁵ *Id.* Critics of Dr. Sharma argue his work lacked rigor and credibility. His supporters argue that he was punished for uncovering part the truth. *Id.*

⁹⁶ *Id.* Patricia Horan, a geochemist, repeated the analysis with a mass spectrometer, which is quoted at 50,000 to 500,000 times more accurate than Dr. Sharma's methods. *Id.*

⁹⁷ *Id.* Malcolm Hooper, emeritus professor of medicinal chemistry at the University of Sunderland, stated that the research provides "unequivocal evidence that will stand up to technical examination by anyone." *Id.*

⁹⁸ *Id.*

Russian army's environmental safety department chief criticized the U.S. for "using the shells with depleted uranium in operation Desert Storm in Iraq [and leaving] 20 to 25% of the American and British personnel involved with diseases and abnormalities at the genetic level."⁹⁹ In response to Russian claims, the Ministry of Defence in London reported that DU represents two hazards: a radiation risk and a chemical toxicity risk "similar to that posed by other heavy metals such as lead."¹⁰⁰ The DoD responded by publishing an Environmental Exposure Report and conducting numerous monitoring projects to offer evidence to the contrary.¹⁰¹ The DoD reported that even veterans who had DU shrapnel remaining in their bodies as a result of friendly fire incidents did not show above average levels of uranium in their urine.¹⁰² The DoD also frequently relied upon other scientific agency findings that indicated there were no harmful health effects from DU exposure.¹⁰³

While debates continue raging in England, there has been relatively little discussion of DU in the United States. In reports of debates by English newspapers, individuals have further claimed "the level of leukemia in the children who live [in Kosovo] is now, they say, equal to that of those of Hiroshima." According to these debates "the US and Britain are engaged in a form of nuclear warfare in the Balkans."¹⁰⁴ Other individuals drew attention to the UN human rights tribunal recognition of DU as weapon of mass destruction in 1996.¹⁰⁵ However, some articles note that substantive proof of DU damage is lacking.¹⁰⁶ While it is clear that DU is potentially lethal to combatants and non-combatants alike, it is less clear that the use of DU

⁹⁹ *NATO Strikes Send Dioxins and Uranium Spreading Over Europe* (May 27, 1999), available at <http://www.drudgereport.com>.

¹⁰⁰ Alex Kirby, *A-10 Airplane: Can Fire Depleted Uranium Shells* (date not provided), available at <http://www.waragainstyugoslavia.com>.

¹⁰¹ *DOD Releases Depleted Uranium Environmental Exposure Report* (April 4, 1998), available at <http://www.defenselink.mil>.

¹⁰² *Id.* The DoD also found normal kidney function and no birth defects among their group of veterans exposed to DU friendly fire. Nevertheless, they proceeded with extensive physical examinations to determine if there were long-term effects. *Id.*

¹⁰³ *RAND Review Indicates no Evidence of Harmful Health Effects from Depleted Uranium* (April 15, 1999), available at <http://www.defenselink.mil>.

¹⁰⁴ Duncan Campbell, *Radiation Sickness*, *The Guardian* (London), July 30, 1999 at 18.

¹⁰⁵ *Id.* This appears to be inaccurate. However there is a movement to have depleted uranium placed on the list of banned weapons of mass destruction. *Id.*

¹⁰⁶ *Id.* Other responses have been more flippant. Piers Wood a senior fellow at the Center for Defense Information, and a retired Army lieutenant colonel stated, "[a]sk me whether I'd like to have an A-10 overhead with depleted uranium when tanks are going to kill me, or if I'd rather preserve the environment and have that pilot carry heavy explosives, and I'd say: I want them carrying depleted uranium.... I wouldn't say no, use the heavy explosives, because I'm worried about dying of cancer 30 years from now. I would risk the consequences of inhaling depleted uranium dust before I would consider facing tanks. Depleted uranium is wonderful stuff. It turns tanks into Swiss cheese." Kathleen Sullivan, *Uranium Bullets on tap for Balkans*, *San Francisco Examiner* (April 1, 1999), available at <http://www.seac-announce@earthsystems.org>.

amounts to genocide. DU was used against Yugoslavia, in the limited context of an anti-tank weapon. Thus, the remains of DU rounds, including shrapnel and dust may pose a serious danger. While scientific evidence of the danger of DU has been contested, little or no scientific evidence has been presented on the after effects of a DU strike. Assuming that spent DU rounds may pose a threat to civilians and the environment, the next step in ascertaining the international legality of DU munitions is to examine grounds not advanced by Yugoslavia.

IV. INTERNATIONAL RESPONSIBILITIES

As the decision of the International Court suggests, the United States and Yugoslavia are both parties to the Genocide convention.¹⁰⁷ However, in ratifying the convention the United States made a reservation, "[t]hat with reference to Article IX of the Convention, before any dispute to which the United States is a party may be submitted to the jurisdiction of the International Court of Justice under this Article, the specific consent of the United States is required in each case."¹⁰⁸ As a result the court decided that it could not establish *prima facie* jurisdiction over the United States. Therefore the case was dismissed.¹⁰⁹ While the court has dispatched the question of genocide, questions of the legality of the use of Depleted Uranium munitions have arisen.

There is some question as to whether the UN has already classified DU as a weapon of mass destruction.¹¹⁰ Such a classification is within the power of the UN. The Geneva Convention Additional Protocol I spells out numerous rules of war relating to the use of weapons, stating:

¹⁰⁷ *Yugoslavia v. United States*, 38 I.L.M. 1188, 1194 (1999).

¹⁰⁸ *Id.* The defendant before the International Court stated that "the United States has not given the specific consent [that reservation] requires [and] . . . will not do so." One reason provided by the U.S. is that Yugoslavia failed to demonstrate the intent required by the Genocide statute to "destroy, in whole or in part, a national, ethnical, racial or religious group, as such." *Id.* at 1193-1194.

¹⁰⁹ *Id.* at 1194. However, in dismissing the case for lack of jurisdiction, the International Court fired a warning shot: "[w]hereas there is a fundamental distinction between the question of the acceptance by a State of the Court's jurisdiction and the compatibility of particular acts with international law, the former requires consent; the latter question can only be reached when the Court deals with the merits . . . Whereas, whether or not States accept the jurisdiction of the Court, they remain in any event responsible for acts attributable to them that violate international law, including humanitarian law . . ." *Id.* at 1195.

¹¹⁰ Campbell, *supra* note 105, at 18. The article noted that a sub-commission sent a report to the UN commission of human rights, which included DU weapons in the category of weapons of mass destruction or with indiscriminate effect. The article argues that the judgment was reached without the aid of evidence, that no scientific studies were received and that the only mention of DU was made by a New-York lobby group the International Educational Development Inc.

In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.¹¹¹ It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.¹¹² It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and sever damage to the natural environment.¹¹³ In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.¹¹⁴

The Geneva Convention sets limitations on the types of weapons that are acceptable in armed conflict. DU munitions are troubling to categorize because they have a radioactive and chemical component which may be delivered though gas or solid material. Therefore DU munitions can either be considered a poison gas, or a tactical nuclear weapon.

The first potential problem with using DU in armed conflict is that it may qualify as a prohibited weapon against combatants. The international community has a long history of oversight in the lawful means of killing and wounding combatants. The general common law rules held that combatants are not unlimited in their selection of weapons.¹¹⁵ Weapons may be prohibited explicitly by international agreement or by custom.¹¹⁶ Apart from those agreements or customs, weapons are presumed to be lawful, except those that "needlessly aggravate the sufferings of wounded combatants."¹¹⁷

It is difficult to classify DU weapons' potential for danger. As described above, DU munitions may have both chemical and radiological effects. Upon striking its intended target the DU weapon detonates, releasing

¹¹¹ Geneva Conventions Additional Protocol I, (1983), pt. III, sec. I, art. 35(1), available at <http://www.tamilnation.org/humanrights/genevaconventions/gprotocol1c.htm>.

¹¹² Geneva Conventions Additional Protocol I, (1983), pt. III, sec. I, art. 35(2), available at <http://www.tamilnation.org/humanrights/genevaconventions/gprotocol1c.htm>.

¹¹³ Geneva Conventions Additional Protocol I, (1983), pt. III, sec. I, art. 35(3), available at <http://www.tamilnation.org/humanrights/genevaconventions/gprotocol1c.htm>.

¹¹⁴ Geneva Conventions Additional Protocol I, (1983), pt. III, sec. I, art. 36, available at <http://www.tamilnation.org/humanrights/genevaconventions/gprotocol1c.htm>.

¹¹⁵ L. Oppenheim's, INTERNATIONAL LAW VOLUME II DISPUTES, WAR AND NEUTRALITY 7th ED. 340 (1952).

¹¹⁶ *Id.*

¹¹⁷ *Id.*

both shrapnel and gasses. Even the DoD admits that the shrapnel and gasses released are radioactive.¹¹⁸ Therefore, the danger posed to combatants by DU weapons is a compound danger.

In the past, the international community has exposed new weapons to scrutiny. One of the earliest weapons found to aggravate the sufferings of wounded combatants was poison gas. At the First Hague Conference, in July 29, 1899, sixteen nations agreed to prohibit the use of weapons which spread these gasses.¹¹⁹

After the use of the first atomic weapons, the international community again was forced to evaluate new technology of warfare. Three standards were used in evaluating the danger: first, existing international agreements; second, the problem of indiscriminate harm to non-combatants; and third, the potential for crimes against humanity.¹²⁰

First, even prior to fully grasping the danger of nuclear war, the international community was aware of the consequences of atomic warfare and biological warfare. There was also a recognition of the overlap between atomic warfare and biological warfare, which had long since been outlawed.¹²¹

Second, the problem with nuclear warfare was that harm could not be relegated specifically to combatants. In the context of the Second World War, the problem was magnified as nations began to target entire cities; a practice contrary to international law before the war.¹²² This shift from 'counterforce' to 'countervalue' tactics complicated legal analysis.¹²³ However, the modern Geneva Convention remains clear on the issue. Article 51(4) states:

¹¹⁸ Environmental Exposure Report, available at <http://www.gulflink.asd.mil.html>.

¹¹⁹ L. Oppenheim's, INTERNATIONAL LAW VOLUME II DISPUTES, WAR AND NEUTRALITY 7th ED. 342 (1952).

¹²⁰ *Id.* at 348.

¹²¹ *Id.* at 349. As to not recognizing the danger of nuclear war, the distinction was recognized even while the author noted that "the permanency of the contamination caused by the atomic bomb within a definite area is controversial," footnoting that, "It has been asserted by high scientific authority . . . that permanent contamination is produced only when the bomb is exploded under water.

¹²² *Id.* at 349.

¹²³ Counterforce bombing is as the name suggests bombing of military targets (e.g., military units and bases). Countervalue bombing is the bombing of cities. Countervalue bombing is generally considered less expensive and more effective in deterring and/or resolving conflict. "A counter value strategy requires the United States to be able to inflict 'unacceptable costs' to deter . . . attacks." Kruzell, American Defense Annual, 8th Edition. P 69. An offensive countervalue strategy in Yugoslavia may be evident from the words of NATO commanders. "We're going to systematically and progressively attack, disrupt, degrade, devastate, and ultimately, unless President Milosevic complies with the demands of the international community, we're going to completely destroy his forces and their facilities and support." 38 I.L.M. 950, 991 (quoting Commander-in-Chief, General Wesley Clark, www.news.bbc.co.uk/english/static.NATO_gallery/air_default.stm/14May1999). General Short said that he "hopes the distress of the public will, must undermine support for the authorities in Belgrade." *Id.* (citing, Michael Gordon "Belgrade People Must Suffer" International Herald Tribune. p. 6. May 16, 1999.)

Indiscriminate attacks are prohibited. Indiscriminate attacks are:

- (a) those which are not directed at a specific military objective;
- (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or
- (c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol; and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.¹²⁴

If one of the fundamental aims of the rules of war is to distinguish between combatants and non-combatants, problems of nuclear weaponry may be unsolvable.¹²⁵ In Article 48 the Geneva Convention states:

In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.¹²⁶

Finally, the use of nuclear weapons may constitute a crime against humanity. The Geneva Convention of 1949 stated that nuclear weapons may be outside "principles of the law of nations, as they result from the usages established among civilised peoples, from the laws of humanity and the dictates of public conscience."¹²⁷

¹²⁴ Article 51(5) continues to state: Among others, the following types of attacks are to be considered as indiscriminate: an attack by bombardment by any methods or means which treats as a single military objective a number of clearly separated and distinct military objectives located in a city, town, village or other area containing a similar concentration of civilians or civilian objects; and an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.

¹²⁵ L. Oppenheim's, *INTERNATIONAL LAW VOLUME II DISPUTES, WAR AND NEUTRALITY* 7th ED. 350 (1952).

¹²⁶ Geneva Conventions Additional Protocol I, *supra* note 125, art. 48.

¹²⁷ *Id.* (citing Geneva Convention of 1949, Article 36).

The threats posed by DU weapons parallel the larger threats of gas and nuclear weapons. Without a clear mandate from the UN on these issues however, it is unlikely that the proliferation of DU weapons will be curtailed.

Another problem the Geneva Convention addressed was residual dangers to the environment and non-combatants which DU weapons pose. The Geneva Convention is broad in its protection for civilians both during and after the resolution of conflict.¹²⁸ Article 55(1) specifically details Convention rules regarding to long term environmental damage:

Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.¹²⁹

When questioned as to the use and danger of DU munitions in Yugoslavia, NATO has practiced politics of obfuscation. On March 31, 1999, Pentagon spokesman Kenneth Bacon declined to comment on the use of DU, suggesting security concerns for operation details.¹³⁰ On April 26, 1999, one source reported that NATO spokesman Konrad Freytag admitted that NATO had used DU rounds in Yugoslavia.¹³¹ As of May 1999, the BBC reported that Pentagon spokesman, Major-General Chuck Wald confirmed that DU munitions were being used.¹³² By October 15, 1999, London newspapers were reporting that NATO had admitted only to using small amounts of DU, and refused to cooperate in an environmental impact study undertaken by a U.N. task force.¹³³

¹²⁸ Articles of the Convention protecting civilians are too numerous to mention. In the Additional Protocol I there is a notable inclusion of protection of objects indispensable to the survival of the civilian population. Art. 54(2) "It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as food-stuffs, agricultural areas for the production of food-stuffs, crops, livestock, drinking water installations and supplies and irrigation works" *Id.*

¹²⁹ Geneva Conventions Additional Protocol I, *supra* note 125, art. 48.

¹³⁰ Sullivan, *supra* note 107.

¹³¹ "NATO admits to using ammunition with depleted uranium" (Apr. 27, 1999), available at <http://www.serbia-info.com/news>. Freytag further stated that the "mini-nuclear" was "not radioactive." *Id.*

¹³² *Pentagon confirms depleted uranium use* (May 7, 1999), available at <http://www.bbc.com>. *Id.*

¹³³ "NATO hindered Kosovo inquiry." October 15, 1999. Financial Times (London). Another report stated that "In private, NATO officers have been telling humanitarian officials in Kosovo to stay away from any area where DU was used - while still refusing to state where they are." NATO obstructs U.N. inquiry into Depleted Uranium. October 16, 1999. The Independent (London).

As to the danger of DU in Desert Storm, one U.S. Armed forces memorandum reported:

There are procedures for clearing destroyed/damaged vehicles and aircraft that have DU rounds inside.... DU munitions must be collected using protective measures and specifically packaged for shipment to Army Depots or National Radiological Waste Burial Sites. Since some of these facilities are licensed only for intact rounds, DU debris has been processed thru special weapons units as contaminated material ... ground combat units, and the civil populations ... come increasingly into contact with DU ordinance, we must prepare to deal with the potential problems.... Alpha particles (uranium oxide dust) from expanded rounds is a health concern but, Beta particles from fragments and intact rounds is a serious health threat, with a possible exposure rate of 200 millirads per hour on contact.... Specific DoD guidance concerning the disposition of DU material in the post combat period restoration phase is currently lacking.¹³⁴

There are numerous routes for attacking the legality of using DU weapons. They may be unacceptable for use against combatants.¹³⁵ They may constitute an indiscriminate attack.¹³⁶ They have immediate and long-term effects on civilian populations.¹³⁷ And, they destroy the natural environment.¹³⁸ However, if member nations of the U.N. refuse to confer jurisdiction on the Court to hear these matters, international responsibilities will continue to erode.

V. CONCLUSION

It is unlikely that the issue of DU and genocide will ever be decided on its merits in any court of law. However, the continued use of DU weapons

¹³⁴ Memo on Depleted Uranium Ammunition. The National Online.

¹³⁵ Geneva Convention Additional Protocol I. Part III: Method and Means of Warfare Combatant and Prisoner-of-War Status. Section I: Methods and Means of Warfare. Article 36 New Weapons.

¹³⁶ Geneva Convention Additional Protocol I. Part IV: Civilian Population. Section I: General Protection Against Effects of Hostilities. Article 51: Protection of the Civilian Population.

¹³⁷ Geneva Convention Additional Protocol I. Part IV: Civilian Population. Section I: General Protection Against Effects of Hostilities. Article 52: General Protection of Civilian Objects.

¹³⁸ Geneva Convention Additional Protocol I. Part IV: Civilian Population. Section I: General Protection Against Effects of Hostilities. Article 55: Protection of the Natural Environment.

may eventually necessitate an examination of whether they are banned under the Geneva Convention as weapons of mass destruction. To ban DU weapons, there must first be a conclusive study of the effects that the weapons have on combatants and non-combatants alike. To date, the scientific evidence is disputed.

There is a three-step process to understanding the claims brought to the International Court of Justice on DU. The first step is to understand Yugoslavia's claims against the US for use of DU weapons. One problem with the complaint was that it tied the use of DU munitions to claims of genocide. Perhaps, the claim of genocide aroused hostility from the Court. The International Court of Justice hinted that it was reluctant to equate a standard military operation with the commission of genocide. It then declined to pursue the matter because it failed to find jurisdiction over the parties.

In particular, the Court had no basis for jurisdiction in *Yugoslavia v. United States* since the U.S. made a proper reservation to the Genocide Convention. While the dismissal of the U.S. case was supported by a legal foundation, implications of the U.S. reservation to the Genocide Convention are troubling. In principle, no nation should be allowed to opt-out of the Genocide Convention. Yet, without a system of reservations, questions of Court power and state sovereignty arise. These are questions that the international community is not prepared to decide in favor of a 'World Court.'

The second issue is the scientific issue of DU itself. In order to ban the use of DU weapons or to compel the member nations of NATO to cease using DU, more definitive scientific study is necessary. It is unfortunate that current studies came at the expense of U.S. service members, and people of Iraq and Serbia. By definition, DU is a radioactive and chemically toxic weapon, even though the extent of its toxicity is disputed. While both advocates and opponents of DU technology cite scientific reports in their favor, initial studies of the armed forces dealt specifically with the effects of DU on their own personnel rather than its effects on targets. The legal issues raised by the use of DU are moral issues as well. A determination that DU weapons are illegal would limit the arsenals which may be used against hostile parties. However, these limitations are not unprecedented.

The third issue deals with the Rules of War. Both the Genocide Convention and the Geneva Convention attempt to address the limitations on 'just warfare.' Through limitations on indiscriminate weapons, damage to non-combatants, and destruction of the natural environment, these Conventions create causes of action that are less politically charged and more palatable than claims of genocide. However, it is unlikely that alternative causes of action will be more successful than those advanced by Yugoslavia. This is because any cause of action faces the hurdle of jurisdiction. Until

scientific issues of DU are resolved, and the legality or illegality of DU weapons is defined, legal challenges to DU will continue to fail. The conflict between international and state sovereignty will remain a barrier to an international prohibition on DU until the international community has a scientifically and morally valid reason to prohibit its use.