



**NORTH ATLANTIC COUNCIL**  
**CONSEIL DE L'ATLANTIQUE NORD**

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23 May 2001

**DOCUMENT**  
**C-M(2001)43**

**AD HOC COMMITTEE ON DEPLETED URANIUM (AHCDU)**

**CHAIRMAN'S SUMMARY ON THE AD HOC COMMITTEE ON DEPLETED URANIUM**

1. Please find attached the Chairman's Summary on the Ad Hoc Committee on Depleted Uranium for notation.

(signed) George ROBERTSON

2 Annexes

Original: English

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**NATO UNCLASSIFIED**ANNEX 1  
C-M(2001)43**CHAIRMAN'S SUMMARY  
ON THE AD HOC COMMITTEE ON DEPLETED URANIUM**

1. The North Atlantic Council on January 10<sup>th</sup> agreed to a robust plan for sharing information on possible effects of depleted uranium (DU) on the health of peacekeepers involved in NATO-led operations, as well as that of the civilian populations. One element of that plan was to establish the Ad Hoc Committee on Depleted Uranium (AHC) under the aegis of the Political Committee and the Chairmanship of the Deputy ASG for Political Affairs. The mandate of the AHC is to serve as a forum for the exchange of information on the possible health risks associated with the use of DU and act as a clearing-house on this issue. This initiative demonstrates NATO's commitment to openness and transparency and to understanding as fully as possible the implications of DU. While the AHC has already exchanged a considerable amount of information, this is an open-ended process and new information that may be produced will continue to be shared. The AHC will meet as necessary to review results.

2. Participants of the AHC are Allies, all past and present non-NATO SFOR and KFOR contributing countries, states of the region and concerned international organisations. Thus 49 countries, including Bosnia and Herzegovina, Croatia and the Federal Republic of Yugoslavia take part in the AHC. Representatives of the European Union (EU), the Organisation for Security and Cooperation in Europe (OSCE), Office of the High Representative in Bosnia and Herzegovina (OHR), the United Nations Mission in Kosovo (UNMIK), the World Health Organisation (WHO), the United Nations Environment Programme (UNEP) and the International Committee of the Red Cross (ICRC) have participated in the AHC as well.

3. Nations have shared copious amounts of information in the AHC, based on their examinations and studies – over 20 nations have been testing their personnel serving or having served in the Balkans and half a dozen nations have been conducting environmental tests. Many Nations provided summary information on their studies and findings in the tables circulated by the International Secretariat (see attached).

4. To facilitate the research, NATO has provided the AHC with maps and co-ordinates, when available, of the locations of the use of DU munitions. This information has been updated as new data became available. Members of the AHC have received a briefing from the NATO Chair of the Committee of Chiefs of Military Medical Services (COMEDS) on their initial findings, and have been subsequently kept informed of further work undertaken by the COMEDS. The AHC has also received several briefings from SHAPE and the International Military Staff, including on SFOR and KFOR policies on handling, recovery, storage and disposal of spent DU munitions. Furthermore, guidelines for civilians who may come into contact with DU, which have been issued to the civilian

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authorities of the concerned countries, have been shared with the AHC.<sup>1</sup> In addition, the acting NATO Spokesman briefed the AHC on public information aspects of the matter, the issue of information handling and the NATO website. The AHC's creation in itself performed a valuable public information role. It was the most visible practical example of NATO's genuine openness, effectively demonstrating its determination to seek out and then circulate as much information as possible. It was also a source of much of the information that went on NATO's website, adding to its growing reputation as an authoritative source for the media.

5. International Organisations provided valuable contributions to the AHC's work. The Representative of the EU Presidency kept the AHC informed of the activities in the EU. The Representative of the European Commission regularly briefed the AHC on the work of the Group of Experts in Radiation Protection and Public Health. The Co-Director of Kosovo's Department of Health and Social Welfare briefed the AHC on his department's examination of hospital records in Kosovo over the past four years. A WHO expert team had visited several sites and hospitals in Kosovo as well. The ICRC reported that it conducted voluntary testing of its personnel in Kosovo. The AHC was also briefed by Mr. Haavisto, Chairman of the UNEP's DU Assessment Team, on the post-conflict environmental assessment carried out in Kosovo on 5-19 November 2000.

6. Based on all this information shared:

- To date no nation has reported finding evidence of an increase in incidence of illness among peacekeepers in the Balkans compared with the incidence of illness among armed forces not serving in the Balkans;
- Thus far none of the nations reported finding a link between health complaints of personnel employed in the Balkans and DU;
- The discussion and information shared by nations and international organisations so far reinforced the preliminary report of the NATO Chiefs of Military Medical Services that at present, based on peer-reviewed medical scientific data, no link has been established between DU and reported cancers;
- To date none of the nations or international organisations has reported finding any indication that would suggest a current threat to human health caused by radioactivity at any of the sites tested.

7. In view of the sizeable amount of information shared in the AHC, all of which points to the conclusion that at present there is no scientific link established between DU and health complaints, the Chairman of the AHC will convene the Committee as

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<sup>1</sup> These guidelines are based on the simple principle of "do not touch", as in the case of any ammunition or mines.

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necessary. Several studies are being conducted by nations and further reports will become available in due course. Given the Allies' commitment to ensure a full exchange of views and information sharing on possible health effects associated with DU, the Chairman of the AHC remains ready to convene further meetings of the Committee as appropriate.

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# **TABLE 1 - EXPERTS TEAMS**

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>BULGARIA</b> MOD	Kosovo, Suva Reka 5-6.01.2001 8 people	Survey showed no risk on health of the personnel in the area of the base camp and at the construction sites

**TABLE 1 - EXPERTS TEAMS**

<b>COUNTRY/ ORGANISATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>DENMARK</b>	An ad hoc expert team consisting of representatives from the Danish Cancer Register, Hematologic Department – Rigshospital Copenhagen, Department of Occupational Health – Bispebjerg University Hospital and The Danish Armed Forces Health Services met 8 JAN 2001.	No scientific evidence for a relation between the exposition of DU and leukemia cases. If a health exam had to be planned it was recommended to take place at the General Practitioners.

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>FRANCE</b> Ministry of Defence	9-14 December 1999 3 experts Likovac region (south of the BMN.N zone) Study of a T55 tank at co-ordinates DN8115.2310	1) No risk in entering the tank due to the very low dose rates.  2) Study of a uranium shell-carrying sabot The depleted uranium detected in the sabot was partly soluble.  3) Six months after the attacks, it was no longer possible to detect depleted uranium in the water and soil samples taken.  4) No health risk to military personnel or the population was identified.

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TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Principal findings
<b>GERMANY</b> Ministry of Defence Office of the surgeon general	1) In Jan 2001 West of Prizren  2) In the area of the village Zur, close to the Albanian border.	No elevated radiation could be detected. No DU-ammunition was found.  Two penetrators and several sabots were found. Elevated radiation could be detected in an area of 30 x 30 cm at the points where DU ammunition was found. In the other areas no elevated radiation could be detected.
	KFOR	
Bundeswehr Research Institute for Materials, Explosives and Petroleum, Oils and Lubricants (BRIMEPOL) team	12.-14.03.2000  2 members  Prizren Camp, Kosovo	All the noted alpha activities of the samples of dusty air collected at Prizren Camp matched the activity of air caused by ubiquitous natural uranium. (Comparable with the city centre of Munich)
Environment and Health Research Centre (Forschungszentrum für Umwelt and Gesundheit – GSF)	19.01.01  Dr. Roth, GSF  34TDM743720	<u>No radiation detectable</u>

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<i>Forschungszentrum für Umwelt and Gesundheit</i>	20.01.01 Dr. Roth, GSF 34TDM67256935	Detection of parts and one complete sabot. No increased radiation.
NBC Recce Team EOD Team	27.01.01 4 members 34TDM910965 34TDN774044 34TDM911984	No evidence of nuclear radiation.
<i>Forschungszentrum für Umwelt and Gesundheit</i>	03.02.01 <i>GSF-Forschungszentrum</i>	Examination of DU projectiles for plutonium. Any health hazard from plutonium can be ruled out completely.
	SFOR	
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	15.-16.01.01 4 members Hadzici Factory Remontnoi Sawod	Examination of DU ammunition found (box). Slight increased radiation levels in immediate vicinity of ammunition (<0.5m). No measurable contamination outside box.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	17.01.01 4 members Hadzici Tank Factory 34TBP7402456359 34TBP7401056399	Radiation exposure well below permissible measurements. No hazard from contamination.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	19.01.01 4 members Bob track near Sarajevo BP950573	No increased radiation, no measurable contamination.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	24.01.01 4 members Filipovici Camp Drina Bridge near Foca CP205204 and CP198196 Bridge near Brod CP174179	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	25.01.01 4 members Ustikolina prison CP201196 and CP204278 Mount Kmur CP149161 and CP152160	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	26.01.01 4 members Lukavica 34TBP8847856087	Radiological hazard can be ruled out.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	27.01.01 4 members Hadzici BP754563	No contamination detectable.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	27.01.01 4 members Hadzici Zunovica 34TBP7527355121 Ammo depot 24TBP7645553898 And 34TBP7640353808 and 34TBP7633753865 Binzejevo 34TBP7602157196	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	29.01.01 4 members Trnovo Bridge 34TBP940400 Nursery 34TBP9438 Hospital 34TBP9438 School 34TBP9438 Town 34TBP9438	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	29.01.01 4 members Sarajevo Scrap yard BP871556 (measured outside site)	Allegedly radioactive material in aircraft wreck parts (Gamma dose rate greater by factor 3 than customary background). There is no radiological hazard in the vicinity of the road. See also 06.02.01.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	31.01.01 4 members Kalinovik Town 34TBP9319 Water Reservoir 34TBP9319 Unofficial refuse dump 34TBP9218 Bde 718 site 34TBP9419	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	02.02.01 4 members Sarajevo, German embassy	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	05.02.01 4 members Pale – Koran Barracks 34TCP0562552540	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	06.02.01 4 members Sarajevo Scrap yard BP871557	Discovery of an artificial source of radiation (EU 152). Area sealed off and marked. Owner informed.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	09.02.01 4 members Rajlovac BP838615 Hadzici BP742563 Malo Polje BP786497 Hrasnica BP840525 Famos BP853522 Bosna springs BP805553 Ilidza BP828568	Radiological hazard can be ruled out.
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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>GREECE HAGS</b>	Jul. 1999 2 persons Urosevoc/Kosovo	Negative for pollution Need for more specific devices
<b>GREECE HAGS</b>	Mar 2000 3 persons Kosovo	Negative for pollution
<b>GREECE HAGS - HCNP</b>	Jan. 2001 6 persons / Kosovo 5 persons / Visoco / B – H	Negative for pollution

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>GREECE</b> Greek Atomic Energy Commission	- 9-12 January 2001 - Three (3) - Kosovo → (Greek Army's area of jurisdiction)	On site inspections have not indicated any above background dose-rates, or any hot spots
	- 25-26 January 2001 - Three (3) - Bosnia-Visoko (Greek Army's area of jurisdiction)	Same as above

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TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Preliminary conclusions
<b>HUNGARY</b> Ad Hoc Committee on examination of possible DU exposure	See Table 3 10-20 January	<ol style="list-style-type: none"> <li>1) Based on the results of preliminary examinations, it may be excluded with high certainty, that the personnel, that have been participating in Peacekeeping Missions on the Balkan theatre could have been exposed to radioactivity, capable of causing health concerns.</li> <li>2) According to the available information no causal connection may be established between DU and cancer cases reported at the Hungarian Defence Forces.</li> <li>3) During site inspections (see Table 3) the committee found no evidence of use of DU-covered shells.</li> <li>4) Precautionary measures used in preparation and execution of Peacekeeping missions on the Balkan theatre are appropriate, their continuous observance ensures health preservation of the personnel.</li> </ol>

TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Preliminary conclusions
<b>IRELAND</b> Permanent Defence Forces	Sept 2000 – Ordnance Corps study of radiation levels in Kosovo where Irish Transport company is stationed	Radiation levels similar to those in Ireland and gave no cause for any alarm or anxiety
Permanent Defence Forces	January 2001 - Defence Forces carried out a number of tests in Irish Troop locations in the Balkans to assess environmental hazards, if any.	No unusual or dangerous levels of radiation were found. Risk or radiological contamination from DU munition to our troops considered negligible

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TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Preliminary conclusions
<b>ITALY</b> Centro Interforze Studi e Applicazioni Militari (CISAM)	1) From 30 October to 4 November 1999 the following sites in Kosovo were investigated: Dakovica, Don, Pec, Klina, Glodine, Istok, Vlasor, Planik and Kraljane; 2) From 11 April to 18 April 2000 the following sites in Kosovo were investigated: Pec, Klina, Istok, Don, Dakovica lake area, Morinas and Kuciste; 3) On 16 April 2000, in Pec, Centauro Brigade medical personnel and equipment were inspected; 4) From 3 August to 10 August 2000 the following sites in Kosovo were investigated: Pec, Klina, Kon, Planik Dakovica VJ Barraks, Dakovica lake area, Grebnik and Koshare; 5) Investigation took place from 21 to 24 November 2000 in Pec, Dakovica VJ barracks and Lake area; 6) Investigation took place on 21 December 2000 in Sarajevo, Vagosca, Railovac, Zetra and Butmir.	1) With the exclusion of the area immediately adjacent to destroyed tanks or other targets radioactivity was found not distinguishable from the natural background. In the area interested by DU bullets some DU penetrators have been found. They have interacted with soil causing small areas of higher DU concentrations. 2) As above  3) Negative  4) As point 1  5) As point 1  6) In the areas investigated the radioactivity was found not distinguishable from the natural background.

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>GRAND-DUCHY OF LUXEMBOURG</b>	As for the moment no expert teams dealing with "DU" have been established for Luxembourg.	

**TABLE 1 - EXPERTS TEAMS**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>THE NETHERLANDS</b>	No expert teams sent	

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>POLAND</b>	When: 5-9 January 2001 How many: 1 team consisting of 6 specialists from military Institute of Chemistry & Radiometry and Military Institute of Hygiene & Epidemiology was in the region. Where: 7 locations: Djeneral, Jancovic, Polish Post at Road no. 1, Kacanik, Prizren, Mitrovica, Petrovec (near Skopje)	No environmental hazards for life and health of soldiers.

**TABLE 1 - EXPERTS TEAMS**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>When, how many, where</b>	<b>Preliminary conclusions</b>
<b>PORTUGAL</b> Nuclear and Technological Institute – Dep. Radiological Protection ITN – DPRSN	<b>KOSOVO</b> One team with three experts 5-10 Jan. 2001	Radioactive contamination in very localised spots No widespread radioactive contamination of the environment Other contaminants present.
<b>ITN – DPRSN</b>	<b>BOSNIA</b> One team with three experts 10-19 Jan. 2001	Radioactive contamination in very localised spots No widespread radioactive contamination of the environment Other contaminants present.

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TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Preliminary conclusions
<b>UK</b> Royal Society – conducting an independent study into DU	Terms of reference: <ul style="list-style-type: none"> <li>- To assess exposure to DU and its oxidation products that military personnel are likely to be exposed to by various routes (for example, ingested, inhaled or embedded DU)</li> <li>- To relate these exposures to the known chemical and radioactive toxicities of DU, or its oxidation products.</li> <li>- To estimate the exposure, doses and possible health effects, for the general population during and shortly after the use of DU munitions.</li> <li>- To estimate the longer-term consequences for health of environmental contamination with DU and its oxidation products.</li> <li>- To identify areas where research is required to address the consequences for health and environment of the use of DU munitions in warfare.</li> </ul>	No results yet, but Royal Society due to report Spring/Summer 2001.
Defence Evaluation and Research Agency (DERA)	Large team of around 10-15 staff advising on weapon effectiveness and operational mechanisms at detailed physics level.	Too early for detail. Significant results in about six months to one year.

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UK Defence Radiological Protection Service (DRPS)	One to two staff on a wide range of health effects.	UK MOD is operating as required within safety standards.
Experts Advisory Group (EAG)	Ad hoc group of specialists looking at screening based at Institute of Naval Medicine.	Consultation document which is based on EAG initial report issued next week, 13 February 2001.
National Screening Departments	Standing Committee of UK Health Departments	Have agreed to consider UK MOD proposals on screening.

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TABLE 1 - EXPERTS TEAMS

COUNTRY/ ORGANIZATION NAME	When, how many, where	Preliminary conclusions
<b>USA</b> US Army Center for Health Promotion and Preventive Medicine	March 2000 Project Silver Falcon (Team of 4) American Sector of Kosovo	Visit to seven sites in Kosovo; no contamination was measured and random samples were collected (see Table 3)
US Department of Defence	January 2001 Two experts briefed the North Atlantic Council, NATO Defense Planning Committee, European Commission Environmental Directorate, NATO COMEDS, Italian Parliamentary Commission for Defense, Belgian Ministry Defense, and German Bundestag representatives. Similar information was given to representatives of the Spanish, Portuguese, and Norwegian embassies in the United States.	Briefings reviewed US health and environmental studies pertaining to uranium and depleted uranium before and after the Gulf War, highlighting the fact that none of those friendly fire victims with the highest Gulf War depleted uranium exposures have been diagnosed with leukemia or any other illness resulting from the toxicological or radiological properties of depleted uranium.
Armed Forces Radiobiology Research Institute	January 2001 Expert provided the NATO TG006 Panel, Radiation Injury and Medical Countermeasures a copy of a January 19, 2000 US Army letter with subject: "Analysis of Transuranics and Other Contaminants in Depleted Uranium Armor."	Letter is available on the internet. It is hypertext linked to endnote #51 in the Depleted Uranium Environmental Exposure Report at <a href="http://www.gulflink.osd.mil/du_ii/">http://www.gulflink.osd.mil/du_ii/</a> .  Specific URL for the letter is: <a href="http://www.gulflink.osd.mil/du_ii/du_ii_refs/n52en051/0046_004_0000004.htm">http://www.gulflink.osd.mil/du_ii/du_ii_refs/n52en051/0046_004_0000004.htm</a> .

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# **TABLE 2 – PERSONNEL TESTING**

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**NATO UNCLASSIFIED****ANNEX 2 to  
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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soldiers – civilians (urine –blood) When, how many, where</b>	<b>Preliminary conclusions</b>
<b>BULGARIA MOD</b>	39 soldiers Kosovo, Suva Reka 5-6.01.2001	No data of health problems.

**TABLE 2 – PERSONNEL TESTING**

<b>COUNTRY/ ORGANISATION NAME</b>	<b>Soldiers - civilians When, how many, where</b>	<b>Preliminary conclusions</b>
	All Danish soldiers (about 18.000) and civilians having been deployed to the Balkans and to the Gulf were freely offered a health exam and a blood testing (erythrocytes, leukocytes and thrombocytes) at their General Practitioner. The General Practitioners report to the Danish Armed Forces Health Services concerning the result of the health exam.	At 7 MAY 2001, 3900 (3450 soldiers and 450 civilians) have used the offer. No cases of leukemia have been found during these exams. All together. The Danish Armed Forces Health Services has the knowledge of 3 cases of leukemia among soldiers having been deployed.

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TABLE 2 – PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – civilians (urine-blood) When, how many, where	Preliminary conclusions
<b>FRANCE</b> Ministry of Defence	<p><b>Personnel in question:</b></p> <ul style="list-style-type: none"> <li>- current or former soldiers who had been deployed in the Gulf or the Balkans;</li> <li>- civilians who might have stayed in the Balkans from 1992 to 2000.</li> </ul> <p><b>Collection of data on past trends and of prospective data:</b></p> <ul style="list-style-type: none"> <li>- collection of information on the pathologies presented by military consultants or former soldiers (cancers, infectious diseases, kidney, pulmonary and neurological diseases, post-traumatic disorders);</li> <li>- identification of place and length of stay.</li> </ul> <p><b>Additional medical clinical study and, if necessary, additional biological studies,</b> Including screening for depleted uranium in 24-hour urine samples and, in some cases, in stool samples.</p> <ul style="list-style-type: none"> <li>- Approximately fifty screenings for depleted uranium were carried out: <ul style="list-style-type: none"> <li>• 8 were on current or former soldiers likely to have had exposure in the Gulf;</li> <li>• roughly 20 were on current or former soldiers who had had exposure, or who were likely to have had exposure, in the Balkans;</li> <li>• 6 were on soldiers who had been in the Balkans and had a blood disease.</li> </ul> </li> </ul>	<p>At this time, no appraisal, not even a preliminary one, can be made with respect to these activities.</p> <p>It is necessary to wait until useable information from these studies becomes available: at least 2 to 3 months for the studies on past trends and at least one year for the prospective studies.</p>

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – civilians (urine-blood) When, how many, where	Preliminary conclusions
<b>GERMANY</b> Ministry of Defence Office of the surgeon general Tasked the GSF (Society for radiation research) to perform a study on DU in German military personnel	Military personnel  24h urine samples with ICP-MS on uranium from 1999 to 2001  about 120 forces members	The final report of this investigation is attached. No elevated uranium levels have been found in German military personnel. The protective measures taken by the German forces are effective.
Ministry of defence Office of the surgeon general	All German military personnel is checked on the health condition prior to deployment. After deployment all military personnel is questioned about adverse health effects related to the deployment. Additional clinical and laboratory examinations are made as appropriate.	No adverse health effects could be found, which were related to depleted uranium.

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – civilians (urine-blood) When, how many, where	Preliminary conclusions
GREECE / HAGS	1800 soldiers (from B – H & Kosovo) Jan 2001 Hellenic Military Hospitals	Normal findings.

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – BLOOD	Preliminary conclusions
HUNGARY IFOR	In 1996 / 462 soldiers / Ocucani <b>Investigated 11 samples until 31.01.2001</b>	No pathological values were found
IFOR	Between 1997-1999 / 2082 soldiers / Ocucani <b>Investigated 154 samples until 31.01.2001</b>	No pathological values were found
IFOR	Between 1999-2000 / 550 soldiers / Pristina <b>Investigated 169 samples until 31.01.2001</b>	No pathological values were found
IFOR	In 1999 / 35 soldiers / Durres <b>Investigated 1 sample until 31.01.2001</b>	No pathological values were found
	<b>Soldiers – URINE</b>	<b>Preliminary conclusion</b>
SFOR	Between 1997-1999 / 2082 soldiers / Ocucani <b>81 urine samples were investigated for <i>beta-2-microglobulin</i> until 31.01.2001</b>	No pathological values were found
	Determination of "U" from urine samples is planned, but until now it was not fulfilled.	

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – civilians (urine-blood) When, how many, where	Preliminary conclusions
<b>IRELAND</b> Permanent Defence Forces	Screening Programme put in place largely for the purpose of reassurance to troops involved. Programme consists of the following:  a, Health and Exposure Questionnaire  b, Full physical examination  c, Full blood count including differential white cell count  d, blood area and electrolytes and serum creatinine  e, test for urinary protein	All serving and retired personnel who previously served in Bosnia, Kosovo or Kuwait are being tested. 233 have been completed with 467 to be done. All results within normal ranges minor abnormalities are being further investigated but none give a cause for concern  Questionnaire is being designed and coordinated with the Chief Medical Officer, Garda Siochana (police service) and the department of public health in University College, Dublin

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
ITALY MOD	<p>Soldiers and civilians who have been/will be deployed in Balkan Area, before and immediately after serving and, later, every year (for 5 years) will undergo the following tests:</p> <ul style="list-style-type: none"> <li>• Azotemia</li> <li>• Bilirubinemia (tot, fract.)</li> <li>• Creatininemia</li> <li>• Cell count (RBC, WBC, PLT)*</li> <li>• Urine assay</li> <li>• Gamme-GT</li> <li>• Glycemia</li> <li>• LDH*</li> <li>• ESR*</li> <li>• Transaminase</li> <li>• Total protein ELF*</li> <li>• Thyroid hormones (FT3, FT4, TSH)</li> </ul> <p>(*) to be repeated every 4 months for 3 years.</p>	Results are not available yet.

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
ITALY Centro Interforze Studi e Applicazioni Militari (CISAM)  MOD	1) 40 soldiers and civilians who served in Balkan area have been tested by RTX and WBC analysis  2) Soldiers and civilians who have been/will be .....	1) No contamination found.  2) Results are not available yet.

TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
GRAND-DUCHY OF LUXEMBOURG	Blood testing before and after deployment (starting in the year 2000 around 100 members of personnel have been tested so far, some of our soldiers having been deployed several times at different intervals).	No abnormalities have been detected so far.

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**NATO UNCLASSIFIED****ANNEX 2 to  
C-M(2001)43****TABLE 2 - PERSONNEL TESTING**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soldiers – civilians (urine-blood) When, how many, where</b>	<b>Preliminary conclusions</b>
<b>THE NETHERLANDS</b>	Six servicemen came in contact with a DU-containing round (Aug. 1999) Urine samples and calculation of external dose	No signs of internal contamination. No significant external radiation dose.

**TABLE 2 - PERSONNEL TESTING**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soldiers – civilians (urine-blood) When, how many, where</b>	<b>Preliminary conclusions</b>
<b>POLAND</b>	Urine and blood tests performed in veterans until December 2000	Negative

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**NATO UNCLASSIFIED****ANNEX 2 to  
C-M(2001)43****TABLE 2 - PERSONNEL TESTING**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soldiers – civilians (urine-blood) When, how many, where</b>	<b>Preliminary conclusions</b>
<b>PORTUGAL</b> Nuclear and Technological Institute – Dept. Radiological Protection ITN – DPRSN	KOSOVO Monitoring of external radiation Individual dosimetry (TLD) (34) Soldiers – urine (Uranium) (28) Civilians – urine (Uranium) (15)	No evidence of external radiation contamination No radiation dose above natural background Urine bioassay – no abnormally high values (so far)
ITN – DPRSN	BOSNIA Monitoring of external radiation Individual dosimetry (ILD) (36) Soldiers – urine (Uranium) (39)	No evidence of external radiation contamination No radiation dose above natural background Urine bioassay – no abnormally high values (so far)
ITN – DPRSN	PORTUGUESE MILITARY STAFF WHO SERVED IN THE BALKANS Soldiers – blood (Chromossomic aberrations) (15)	Chromosomic aberrations negative

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
SLOVAKIA MOD	<ul style="list-style-type: none"> <li>- 70 persons out of 127 who have served in the Balkans (the rest will be examined after the arrival from their missions abroad)</li> <li>- examined from January-February 2001 in Central Military Hospital for: <ul style="list-style-type: none"> <li>• physical examination</li> <li>• laboratory tests</li> <li>• blood count</li> <li>• heavy metal (Cd, Pb)</li> <li>• tumors</li> </ul> </li> </ul>	No pathology in connection to DU found.

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
SPAIN MOD	<ul style="list-style-type: none"> <li>• Soldiers and civilians who have been deployed in Balkans Area are under a voluntary epidemiological study.</li> <li>• Blood and urine tests: Heavy metals: Pb and Cd Uranium</li> <li>- More than 11,500 people have been examined</li> <li>- Over 6,000 heavy metal blood tests</li> <li>- 1,000 urine tests (U, Pb, Cd)</li> <li>- 7 biological dosimetries completed</li> </ul>	Not detected any malignancy

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers – civilians (urine-blood) When, how many, where	Preliminary conclusions
<b>SWEDEN</b> KS 01  KS 03  KW 01	Soldiers blood tests for lead and Kadmium Spring 2000, 2/platoon 100 soldiers + 10 civ. Policemen blood tests for lead and kadmium 39 Soldiers exposed to DU 11 July 1991. Health check-up	Normal    Normal

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
UK	If clinically indicated, Gulf Veterans were tested for DU.	2 tested, negative.
	Balkans veterans, Gulf veterans including civilians.	MOD considering proposals for screening – consultation document issued 13 February 2001.
	Routine procedures for personnel working on UK ranges.	No problems in nearly 20 years of testing and monitoring. 1999 exposure for workers were between 0.3 and 0.65 millisieverts (statutory limit is 20 millisieverts for workers, 1 m/s for members of the public).

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TABLE 2 - PERSONNEL TESTING

COUNTRY/ ORGANIZATION NAME	Soldiers - civilians (urine-blood) When, how many, where	Preliminary conclusions
None*		

\* The US Government has not tested its Balkans Veterans for DU, however, it has tested over 300 Gulf War veterans and only those with embedded DU fragments resulting from friendly fire incidents have elevated urine uranium. All veterans who have been tested, including those with embedded fragments, have not shown any adverse health effects attributable to their exposure to depleted uranium.

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# **TABLE 3 - ENVIRONMENT TESTING**

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## NATO UNCLASSIFIED

ANNEX 2 to  
C-M(2001)43

TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>BULGARIA</b> The Executive Agency of the Environment within the Ministry of the Environment, the Central Laboratory of NBC and Ecology and Military Medical Institute	The level of $\gamma$ and $\beta$ contamination as well as existence of toxic agents are checked by samples of the air, water and soil.	The results of measurement did not indicate deviation of the admissible limits.

TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANISATION NAME	Soil – water – air When, how many, where	Preliminary conclusions
<b>DENMARK</b>	8 JAN 2001 measurements on 6 and 5 locations in the two danish camps in Kosovo.	In all locations normal level of alfa activity was found.

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
FRANCE MOD	9-14 December 1999 3 experts Likovac region Study of a T55 tank at co-ordinates DN8115.2310	<ul style="list-style-type: none"><li>• Six months after the attacks, it was no longer possible to detect depleted uranium in the water and soil samples taken.</li><li>• No health risk to military personnel or the population was identified.</li></ul>

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>GERMANY</b> Ministry of Defence Office of the surgeon general tasked the GSF (Society for radiation research) to perform a study on DU in German military personnel	During the investigation of military personnel, samples of soil and water were taken and analysed with ICP-MS on uranium from 1999- 2001	The final report of this investigation is attached. No elevated uranium levels have been found in the samples. Additional samples were taken during the mission in January 2001. These results are not yet available.
Germany and KFOR Multinational Brigade South (MNB S)	As a precautionary measure KFOR-Mnb s checked 15 potential contaminated areas and wrecks in October 1999 and March 2001.	In five cases, there was a slightly increased radioactivity in October 1999, the reexamination of these sites in March 2000 showed no elevated radioactivity.  There was no danger from radiation for German forces at any time.
Radiation and hazardous substance testing team from NBC Defence and Self- Protection School, Sonthofen	18.01.01 Maj Rambousky Qualified physicist Rajlovac camp	Examination of DU cores for plutonium – no evidence of plutonium.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	18-18.20.01.01 Maj Rambousky Qualified physicist Rajlovac camp Air and earth samples	Radiological risk in camp can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	19.01.01 Maj Rambousky Qualified physicist Sarajevo bob track BP950573 Sample of soil in depot area Sample of water from washroom Sample of meltwater	No radiological risk
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	25.01.01 Sergeant Major Bauer Rajlovac Camp Air sample	Low concentration of fuel. Relatively high concentration of benzene and nitrogen dioxide (produced in combustion process).
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	29.01.01 Maj Rambousky Qualified physicist Water samples (tap water in nursery, hospital and Trnovo school) 2 samples of each (Trnovo school)	Radiological hazard can be ruled out. No contamination detectable.

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Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	31.01.01 Capt Kitto Qualified chemist Sample of water from Kalinovik water reservoir	Radiological hazard can be ruled out.
Radiation and hazardous substance testing team from NBC Defence and Self-Protection School, Sonthofen	02.02.01 Maj Rambousky Qualified physicist Sarajevo – German Embassy Collection of air samples	Radiological hazard can be ruled out. Hazardous substance measurements well below legal limits.

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
GREECE HAGS	Soil (samples 9), water – air (for $\gamma$ -radiation) Jul. 1999 Kosovo (Ucosevac)	Negative
Greece HAGS	Soil – water – air: (for $\alpha$ -radiation) Mar. 2000 Kosovo	Negative
Greece HAGS – HCNP	Soil (70 samples) Air filtering control Kosovo Jan. 2001	Negative
Greece HAGS – HCNP	Soil (10 samples) – Air filtering control B – H Jan 2001	Negative

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
GREECE Greek Atomic Energy Commission	<ul style="list-style-type: none"> <li>- 9-12 January 2001</li> <li>- Seventy (70): soil</li> <li>- six (6): water</li> <li>- ten (10): air</li> <li>- Kosovo</li> </ul>	<p>Soil: No DU has been detected. Natural Uranium: the background levels for the areas</p> <p>Water: No DU has been detected. Natural Uranium concentrations are 10 times lower than that of the limit for potable water in Canada.</p> <p>Air: Total uranium is in the order of 1 ng/m<sup>3</sup>. Activation analysis techniques and alpha spectrometry techniques were utilised.</p>
	<ul style="list-style-type: none"> <li>- 25-26 January 2001</li> <li>- Ten (10) : soil</li> <li>- one (1) : water</li> <li>- two (2) : air</li> <li>- Bosnia (Visoko)</li> </ul>	Analysis under way.

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>HUNGARY</b> Havaria Laboratory of the HDF	Sarajevo/Butmir Bosnia-Herzegovina 14 January 2001 Soil - 200 grams Water - 2000 ml	Gamma background activity: 50-60 nSv/h
Havaria Laboratory of the HDF	Sarajevo/Donji-Kotoraci Bridge Bosnia-Herzegovina 14 January 2001 Soil - 200 grams Water - 1000 ml	Gamma background activity: 50 nSv/h
Havaria Laboratory of the HDF	Sarajevo/SFOR Camp Bosnia-Herzegovina 14 January 2001 Soil - 200 grams	Gamma background activity: 70-80 nSv/h
Havaria Laboratory of the HDF	Dobo Bosnia-Herzegovina 14 January 2001 Soil - 2 x 200 grams	Gamma background activity: 50 nSv/h

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Havaria Laboratory of the HDF	Okucani/Hungarian SFOR Camp Croatia 13-14 January 2001 Aerosol/Air - 6.4 m <sup>3</sup>	Gamma background activity: 80 nSv/h Artificial alpha activity conc. (PU-239); 0.07 Bq/m <sup>3</sup> Artificial beta activity conc. (SR-90); 0.34 Bq/m <sup>3</sup> Artificial gamma activity conc. (CS-137); 0.78 Bq/m <sup>3</sup>
Havaria Laboratory of the HDF	Pristina, Kosovo Soil - 5 x 200 grams	Gamma background activity: 90 nSv/h

TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
IRELAND Permanent Defence Forces	Sept 2000 and January 2001: Environmental radiation at Camp Clarke, Kosovo Radiation and chemical analysis of tap water, bread and potatoes	No Uranium isotopes detected.

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>ITALY</b> Centro Interforze Studi e Applicazioni Militari (CISAM)	1) During investigations in Kosovo and Bosnia, CISAM carried out tests, sampling soils around destroyed targets, air suspended particles and biological indicators of radioactivity	1) The radioactivity in the samples was found not distinguishable from the natural background with the exclusion of many samples of the soil collected in the area immediately adjacent to destroyed targets and especially in the area surrounding the DU penetrators.

TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>GRAND-DUCHY OF LUXEMBOURG</b>	As BELGIUM (as the personnel of the Grand-Duchy has been deployed together with the Belgians)	There has been an environment testing done by the Belgian military authorities. All those testing resulted with no abnormalities detected.

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**NATO UNCLASSIFIED****ANNEX 2 to  
C-M(2001)43****TABLE 3 - ENVIRONMENT TESTING**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soil, water, air When, how many, where</b>	<b>Preliminary conclusions</b>
<b>THE NETHERLANDS</b>	Not performed	---

**TABLE 3 - ENVIRONMENT TESTING**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>Soil, water, air When, how many, where</b>	<b>Preliminary conclusions</b>
<b>POLAND</b>	Soil, water and air samples taken at the locations mentioned in Table 1	Negative

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>PORTUGAL</b> Nuclear and Technological Institute – Dep. Radiological Protection ITN-DPRSN	KOSOVO Soil (46) Water (8) Aerosol (3) Food (21)	With the exception of 2 sites, background and values Normal concentrations Normal concentrations Normal concentrations
ITN-DPRSN	BOSNIA Soil (33) Water (8) Aerosol (6) Food (42)	With the exception of 2 sites, background values Normal concentrations Normal concentrations Normal concentrations

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
SPAIN MOD  Military Veterinary Center and NBC personnel	<ul style="list-style-type: none"> <li>• Food control:</li> <li>- General: In situ microbiological and quality tests.</li> <li>- Radiation control: Food Inspection Equipment deployed</li> <li>- Samples sent to Military Veterinary Center</li> <li>• Water control:</li> <li>- Continuous monitoring</li> </ul>	<p>Some food rejected, not up to operational standards.</p> <p>Normal radiation levels</p>

TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
SWEDEN UNEP*  KS 01	<p>Soil, water and vegetation November 2000 11 sites in Kosovo</p> <p>Soil tests for metals close to Swedish camps November 1999</p>	<p>Normal</p> <p>Increased levels of heavy and other metals</p>

\* Sweden participate with an expert to UNEP

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>UK</b> Enhanced Environmental Monitoring Programme	Visit to MNB(C) – 19-23 Jan. 3 members of the team. Locations of visit – 34T DN 834190 34T DN 886168 34T EM 019990 34T EN 148478 34T EN 178432 34T EN 187470 Samples collected – 3 DU penetrators and 60kg of soil.  Only one site had evidence of DU	Visit report already provided to Ad Hoc Committee – more detailed one to follow once soil sample analysis completed.  Preliminary conclusions – see initial report passed to ad hoc committee on 30 January.  Site at which penetrators found – 3 complete penetrators recovered. Radiation measurements were taken where a penetrator was found lodged in a wall of a damaged building. The measured dose (gamma) was 0.002mSv/h.  Initial examination of the recovered DU penetrators suggests that there is no large scale generation of DU dust when penetrators strike non-armour targets. This suggests that the potential risk due to the inhalation of DU dust is less significant than some think. However, confirmation of this risk is dependent on the outcome of the analysis of the penetrators and soil samples and a more detailed examination of the site.  The site where the DU penetrators were found is extensively contaminated with asbestos which is a potent carcinogen and poses a significant risk to health. This may well complicate any future intrusive investigations of DU contamination.

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TABLE 3 - ENVIRONMENT TESTING

COUNTRY/ ORGANIZATION NAME	Soil, water, air When, how many, where	Preliminary conclusions
<b>USA</b> US Army Center for Health Promotion and Preventive Medicine	Project Silver Falcon March 2000 Nine targets from the NATO target list provided to the UNEP were visited in the MNB-E. Target numbers pertain to listing at: <a href="http://www.nato.int/du/docu/d010124a.htm">http://www.nato.int/du/docu/d010124a.htm</a> .  2 target sites were within identified minefields and not surveyed. (Tgt. No. 8 and 49)  2 target sites showed no evidence of enemy occupation or battle damage and thus were not surveyed. (Tgt. No. 12 and 107.)  2 target sites showed evidence of enemy occupation but no battle damage. Sites were monitored using Field Instruments for the Detection of Low Energy Radiation (FIDLERs). (Tgt. No. 45 and 111.)  3 target sites showed evidence of enemy occupation and battle damage. FIDLERs were used at the sites and 5 soil samples were collected. (Tgt. No. 27 and two target sites at Tgt No. 52)	No FIDLER readings were recorded more than 50% above background radiation.  Soil samples indicated no measurable levels of depleted uranium.

\* The US Department of Defense conducted several environmental sampling efforts to assess depleted uranium contamination in the Persian Gulf region since the Gulf War. While this sampling does not directly apply to the Balkans, it sheds some light on the environmental presence of depleted uranium in target areas. No sampling, to date, has identified levels of DU that would require action under US Environmental Protection Agency guidelines. A complete discussion of US depleted uranium environmental sampling efforts in the Gulf Region since the Gulf War can be found in Section V.A. of our "Environmental Exposure Report, Depleted Uranium in the Gulf (II)" at [http://www.gulflink.osd.mil/du\\_ii/](http://www.gulflink.osd.mil/du_ii/).

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# TABLE 4 - STUDIES

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**NATO UNCLASSIFIED****ANNEX 2 to  
C-M(2001)43****TABLE 4 - STUDIES**

COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>BULGARIA MOD</b>	Long-term Program for Medical Check and Examination of the servicemen who participated in SFOR/KFOR	The data is to be disseminated upon completion of each consequent stage of the examination.

**TABLE 4 – STUDIES**

COUNTRY/ ORGANISATION NAME	STUDIES	Preliminary conclusions
<b>DENMARK</b>	The Danish Armed Forces Health Services has had the official approval for the implementation of a register investigation comparing the Danish Cancer Register with the Register of the Danish soldiers having been deployed to the Balkans.	No results yet.

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TABLE 4 - STUDIES

COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>GERMANY</b> Ministry of Defence Office of the surgeon general tasked the GSF (Society for radiation research) to perform a study on DU in German military personnel.	Military personnel 24h urine samples with ICP-MS on uranium from 1999-2001 about 120 forces members	The final report of this investigation is attached. No elevated uranium levels have been found in the German military personnel. The protective measures taken by the German forces are effective.
Army Support Command Div III 2 (1) Biomonitoring study group	20.03.00 Biomonitoring study	Assessment of risk to German soldiers from possible exposure to depleted uranium (DU).

TABLE 4 - STUDIES

COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>GREECE</b> Greek Atomic Energy Commission	Further analysis of the samples is carried out. Evaluation of the results and relevant studies are under way.	No definite conclusions are available at present.
HNDGS	Statistic analysis of malignant diseases in Armed Forces 1990- 2000	No significant differences in annual rates.

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**NATO UNCLASSIFIED****ANNEX 2 to  
C-M(2001)43****TABLE 4 - STUDIES**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>STUDIES</b>	<b>Conclusions</b>
<b>ITALY MOD</b>	In December 2000, a Commission of experts was appointed by the Italian MOD to evaluate the medical and scientific aspects of emerging cases (attached A) of lymphoproliferative disorders and other neoplastic diseases among military personnel, with particular attention to those deployed in the Balkans. The Commission is composed by the Italian SG and 6 civilian experts chaired by a University Professor in Haematology.	Results are not available yet.

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**Neoplastic diseases in Italian military personnel deployed in the Balkans**  
**(updated on 31.1.2001) Annex A to Table 4**

cod.	age	Armed Force	Year of diagnosis	Disease	Service	Diagnosis confirmed	Year of death
1	26	EI	1999	NHL	BOSNIA	YES	2000
2	32	EI	1996	NHL	BOSNIA	YES	1998
3	33	AM	2000	TU (thyroid)	ALBANIA-KOSOVO		
4	24	EI	1999	ALL	BOSNIA	YES	2001
5	41	CC	2000	TU (colon sigmoid)	BOSNIA	YES	2000
6	31	CC	1998	TU (skin)	BOSNIA-ALBANIA	YES	2000
7	31	CRI	1999	AML	ALBANIA-BOSNIA-CROAZIA	YES	2000
8	37	EI	1999 *	TU (larynx)	BOSNIA-KOSOVO		
9	24	EI	1998	TU (thyroid)	BOSNIA		
10	25	EI	1999	HL	BOSNIA	YES	
11	27	EI	2000	TU (thyroid)	BOSNIA-ALBANIA	YES	
12	38	CRI	2000	NHL	BOSNIA-ALBANIA-CROAZIA-SERBIA	YES	
13	23	EI	2000	HL	MACEDONIA-KOSOVO	YES	
14	24	EI	1999	HL	ALBANIA-MACEDONIA	YES	
15	40	EI	1999	TU (bone)	KOSOVO*-ALBANIA	YES	
16	33	EI	2000	HL	ALBANIA-BOSNIA	YES	
17	27	EI	2000	NHL	BOSNIA-ALBANIA-KOSOVO	YES	
18	31	EI	1998	HL	BOSNIA	YES	
19	27	EI	2000	HL	BOSNIA-KOSOVO	YES	
20	28	EI	1999	TU (testicular)	SOMALIA-BOSNIA	YES	2000
21	23	EI	2000	HL	BOSNIA	YES	
22	30	EI	2000	TU (rectum)	BOSNIA	YES	
23	27	EI	2000	TU (brain)	BOSNIA	YES	
24	45	EI	2000	TU (brain)	BOSNIA-SOMALIA-KOSOVO-ALBANIA-TURCHIA		
25	40	EI	2000	TU (rhinopharynx)	BOSNIA-ALBANIA-MACED.	YES	
26	23	EI	1999	ALL	BOSNIA-ALBANIA	YES	1999

Legend:

NHL Non-HODGKIN lymphoma  
 HL HODGKIN lymphoma  
 ALL Acute Lymphoid Leukemia

CC Carabinieri Corp  
 CRI Italian Red Cross  
 EI Army

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**NATO UNCLASSIFIED**ANNEX 2  
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COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>GRAND-DUCHY OF LUXEMBOURG</b>	As for the moment, no studies in relation with "DU" have been realised by the Grand-Duchy of Luxembourg.	

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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>STUDIES</b>	<b>Conclusions</b>
<b>THE NETHERLANDS</b>	Preliminary "quick scan" on incidence of leukemia.	No indication of higher incidence of leukemia.
	Planned: Literature survey on health risks of (depleted) uranium.  Epidemiological studies, comparison between Balkan deployed personnel and non-deployed with NL population (mortality and cancer).	
	Risk assessment based on NATO data of used DU containing rounds (number and locations in Kosovo).	Health risks are negligible.

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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>STUDIES</b>	<b>Conclusions</b>
<b>POLAND</b>	In course of elaboration	TBD

**TABLE 4 - STUDIES**

<b>COUNTRY/ ORGANIZATION NAME</b>	<b>STUDIES</b>	<b>Conclusions</b>
<b>PORTUGAL</b> Nuclear and Technological Institute – Dep. Radiological Protection ITN – DPRSN	Urine bioassay for uranium in all military staff who served in the Balkans	Ongoing (foreseen a total of 4000)

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COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>SPAIN</b> MOD	<p>A Scientific Committee was appointed by the Spanish MOD on 19 January. It is integrated by independent civilian (4) and military (3) experts.</p> <p>The aims are the following:</p> <ul style="list-style-type: none"> <li>- Develop an epidemiological study</li> <li>- Preliminary epidemiological study</li> <li>- Follow medium and long-term study</li> <li>- Revising clinical records</li> <li>- Study of possible local risks.</li> </ul>	<p>Provisional estimations:</p> <ul style="list-style-type: none"> <li>- No scientific evidence of a relationship between DU and the pathology registered.</li> <li>- Latency period longer than timeframe between deployment and diagnosis.</li> <li>- A case-by-case clinical records study is going on.</li> <li>- Starting with a medium a long-term statistical cohorts study.</li> </ul> <p><i>The DU etiology is practically discarded.</i></p>

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**NATO UNCLASSIFIED**ANNEX 2  
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COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
<b>SWEDEN</b> UNEP/UNCHS*	The potential effects on human health and the environmentalising from possible use of depleted uranium during the 1999 Kosovo conflict	
Defence Research Establishment – Division of NBC Defence	Planned studies Uranium/urine KS 03 Uranium in Swedish soliders exposed to fire in Camp Doha, July 1991	
National Board of Health and Welfare	Matching veterans with the cancer and disease register	

\* Sweden participates with an expert to UNEP

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<b>COUNTRY/ ORGANIZATION NAME</b>	<b>STUDIES</b>	<b>Conclusions</b>
<b>UK</b> The Lancet	"Bridging the gulf in war syndromes" Vol 353, 16 January 1999	Article passed to Ad Hoc committee.
British Medical Journal	"Depleted Uranium and Public Health" Volume 322, 20 January 2001	Article passed to Ad Hoc committee. "Fifty years of study of occupational exposure provides little evidence of cancer".
Manchester University (and follow up by MOD)	Mobidity and Mortality for Gulf Veterans Lancet, Vol 336, 1 July 2000.	Details passed to Ad Hoc committee. Mortality rates amongst Gulf Veterans similar to those of a comparable group who did not deploy to Gulf.
Lancet articles	Lancet Pp244-246, 27 January 2001.	Copies passed to Ad Hoc committee.

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COUNTRY/ ORGANIZATION NAME	STUDIES	Conclusions
US *None		

\* Although no studies have been conducted specifically involving the Balkans, the US Department of Defense has been studying the health and environmental impacts of depleted uranium since the 1970's. A review of these studies can be found in Tab L of our "Environmental Exposure Report, Depleted Uranium in the Gulf (II)" at [http://www.gulflink.osd.mil/du\\_ii/](http://www.gulflink.osd.mil/du_ii/).

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