

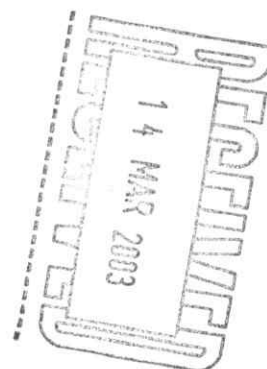
No 3 December 2002

Disarmament, not Defence!

**Nuclear Weapons, Missile Defense, and
Arms in Space - An Unholy Trinity**

by Regina Hagen and Juergen Scheffran

The third of a series of occasional papers on
defence and disarmament issues in memory of
Frank Blackaby



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To achieve for the new century a global treaty to eliminate nuclear weapons

January 2003

Dear Friends

Blackaby Paper 3: "Disarmament, not Defence!"

I am pleased to enclose a copy of the third Blackaby Paper, entitled "Disarmament, not Defence, Nuclear Weapons, Missile Defence and Arms in Space – an Unholy Trinity" by Regina Hagen and Juergern Scheffren.

This is the third in the series of occasional papers published by Abolition 2000 UK in memory of the late Frank Blackaby.

This is a complimentary copy – although donations towards the cost of producing it are very welcome! If you would like further copies they are available from the above address at £2.50 each. For bulk orders contact me for a quote.

I hope that you find the publication interesting and informative. If you have any queries please get in touch with me at the above address.

Yours in peace



Claire Poyner
Co-ordinator
Abolition 2000 UK

Disarmament, not Defence!

Nuclear Weapons, Missile Defence, and Arms in Space - An Unholy Trinity

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Edited by Peter Nicholls and Claire Poyner.

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A note about spelling

The editors pondered long about the spelling of defence - missile defence being an American system maybe we should use the American spelling. In the end, we decided the best thing to do was to use the English spelling except in instances of a direct quote, or within a job or department title such as "The US Department of Defense". We have tried to be consistent. If a "defense" has slipped through erroneously we hope it will be forgiven!

Introduction

In January 2002, the US Department of Defense completed a Nuclear Posture Review (NPR) "to lay out the direction of the American nuclear forces over the next years". The NPR establishes a "New Triad", consisting of nuclear and non-nuclear offensive strike systems, active and passive defences, and a revitalised defence structure. In line with many other decisions the US has decided to rely not only on conventional weaponry and advanced technology, but upon improved nuclear arsenals, missile defences, and weapons in space.

The implementation of this policy would weaken efforts to prevent future arms races and threaten the multiple governmental and non-governmental initiatives under way for international control of missile and missile defence technologies, preventing the weaponisation of space, and promoting effective nuclear disarmament.

The US Government has made it clear¹ that world politics are to be US-determined and international security governed by US military and security interests.² This has become even more obvious since the terror attacks on the New York World Trade Centre and the Pentagon in September 2001.³

Actions have included:

- US withdrawal from the US-Russian Anti-Ballistic Missile (ABM) Treaty which releases

the US from almost all limitations on building missile defences or deploying space weapons;

- US refusal to sign the Comprehensive Test Ban Treaty that prohibits any nuclear test explosions;
- the boycott of the Verification Protocol to the Biological and Toxin Weapons Convention which had already been modified during negotiations to make it acceptable to the US;
- the boycott of the Kyoto Protocol to the United Nations Framework Convention on Climate Change;
- unilateral initiation of the war against Afghanistan and the preparations for further wars;
- the Nuclear Posture Review of 2002 which contradicts obligations under the nuclear Non-Proliferation Treaty.

The US administration is also pursuing many weapons programmes allegedly required for the war against terrorism including bunker-busting conventional and nuclear weapons, missile defences and space weapons, cyber and information warfare technologies, and high-precision "fire and forget" systems. None of these could have prevented previous or future terrorist attacks. Such a military policy may thus not increase US or world security but instead provoke a new arms race.

Military Spending

One indicator of the security priority given to unilateral military capabilities is the US defence budget. In 1999, the Centre for Defence Information stated: "No other country is in the same league as the United States in military spending. At \$289 billion, the US military budget is ... five times larger than that of Russia, the second largest spender, ... more than 19 times as large as the combined spending of the seven countries identified by the Pentagon as ... most likely adversaries (Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria). The seven

potential enemies, plus Russia and China, spend \$106 billion, just over a third (37%) of the U.S. military budget."⁴

Global military spending declined from \$1.2 trillion in 1985 to \$785 billion in 1998. The US share of global military spending rose from 30% to 36% in 1999. Since then, US military spending has been steadily increasing: to \$310 billion in 2001, \$344 billion in 2002, and a requested \$396 billion for 2003.⁵ A US DoD forecast projects a budget rise to \$470 billion in FY2007.⁶

The consequent return to deficit spending is already being felt by the US population.

Table 1 - Comparative Military Spending Fiscal Year 2000 and 2003 (Billion US\$)

Military Spending in 2000				Military Spending in 2003			
United States	288.8	Turkey	8.9	United States	396.1	Israel	9.0
Russia	55.0	Australia	7.2	Russia	60.0	Taiwan	8.2
Japan	41.1	Netherlands	7.0	China	42.0	Canada	7.7
China	37.5	Israel	6.7	Japan	40.4	Spain	6.9
United Kingdom	34.6	Canada	6.7	United Kingdom	34.0	Australia	6.6
France	29.5	Spain	6.0	Saudi Arabia	27.2	Netherlands	5.6
Germany	24.7	Iran	5.7	France	25.3	Turkey	5.1
Saudi Arabia	18.4	Greece	3.8	Germany	21.0	Singapore	4.3
Italy	16.2	Poland	3.2	Brazil*	17.9	Sweden	4.2
South Korea	11.6	Norway	3.2	India	15.6	Arab Emirates	3.9
Taiwan	10.9	Kuwait	3.0	Italy	15.5	Poland	3.7
India	10.7	Syria	2.9	South Korea	11.8	Greece	3.3
Brazil	10.3	Pakistan	2.7	Iran	9.1	Argentina*	3.1

US and Russian Nuclear Weapons and The New Triad - Offence, Defence and the Rest

In the Bush-Putin agreement of May 2002 (SORT) the US and Russia promised to reduce the number of strategic nuclear weapons to 1,700-2,200 on both sides by 2012. For a number of years, US military experts have pointed out that its nuclear arsenal is too large, contains too many self-detering high-yield weapons, and requires modernization.

In addition to the Stockpile Stewardship and Management program, set up to ensure operability of the nuclear arsenal, some said that an option for nuclear tests should be kept open. The US has observed the moratorium on nuclear testing but has not ratified the Comprehensive Test Ban Treaty (CTBT).

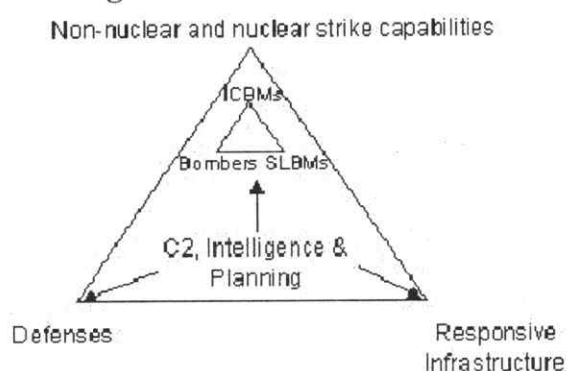
The comprehensive Nuclear Posture Review (NPR) in 2001 laid out the direction for American nuclear forces over the next 5-10 years.⁷ The classified report was submitted to Congress;⁸ the unclassified brief showed that the intention is not to disarm⁹ but to complement the nuclear arsenal and make it more usable. It establishes a "New Triad" composed of:

- offensive strike systems (both nuclear and non-nuclear);
- defences (both active and passive); and
- a revitalised defence infrastructure that will provide new capabilities in a timely fashion to meet emerging threats.¹⁰

Nobel Peace laureate Joseph Rotblat interprets the NPR as follows: "The current Nuclear Posture Review ... makes nuclear weapons the tool with which to keep peace in the world."¹¹ Some of the main NPR points are:

- The number of "operationally deployed strategic nuclear warheads", currently at about 6,000, should be reduced to 1,700-2,200 over the next decade.
- The surplus warheads will be downloaded from operationally deployed Intercontinental Ballistic Missiles (ICBMs) and Sea-Launched Ballistic Missiles (SLBMs).
- The force structure and downloaded warheads will be preserved for the responsive force, i.e. neither warheads nor missiles will be dismantled.
- "Unexpected contingencies", e.g. "the emergence of a new, hostile military coalition

Figure 1 - The New US Triad



against the United States” should be considered.

- The infrastructure is to be modernised.
- An advanced concepts initiative is to provide “several nuclear weapon options” for the future, among them the “bunker busters” and warheads that reduce collateral damage.
- The planning is projected into the far future. Even “a new bomber will need to be operational by 2040”. If the operational lifetime of bombers is 40 years, this implies planning a nuclear arsenal for the next 80 years.
- Offensive capabilities are to be complemented by defences, in particular by ballistic missile defence systems.
- The NPR does not propose to implement

the reductions in the framework of disarmament treaties but rather “in the form of ... political commitments.”¹²

In May 2002, the US nevertheless yielded to Russian pressure for a formal disarmament agreement. But the Strategic Offensive Reductions Treaty¹³ signed in Moscow on 24 May 2002 permits development of new kinds of nuclear weapons and missile defence.

And it does not take into account the militarization of space, which some see as guaranteeing US military superiority for the foreseeable future. In any case either side can withdraw from the agreement with 90 days notice. No wonder one US official described it as “our kind of agreement.”¹⁴

Table 2 - Faking Nuclear Restraint - US Nuclear Weapons Planning 2001 onwards

Over the next 10 years, the United States is to retain a total stockpile of intact nuclear weapons and weapon components that may be seven to nine times larger than the official goal of 1,700 to 2,200 “operationally deployed weapons.” The operationally deployed weapons are only the visible portion of a hidden arsenal.

To the accountable tally of 2,200 the following must be added:

	c 240 warheads on 2 Trident submarines undergoing overhaul at any one time;
+	c 1,350 strategic missile and bomber warheads in the “responsive force”;
+	c 800 “nonstrategic” bombs assigned to US/NATO “dual-capable” aircraft;
+	c 320 “nonstrategic” sea-launched cruise missile warheads in the “responsive force;”
+	c 160 “spare” strategic and nonstrategic warheads;
+	c 4,900 intact warheads in the “inactive reserve” stockpile;
=	c 7,800 intact warheads;
+	c 5,000 stored plutonium “primary” and HEU “secondary” components that could be reassembled into weapons
=	~ 12,800 extra weapons or potential weapons.

Missile Defence - Destabilising and Paving the Way for Space Weaponisation

Missile proliferation is not new. Ballistic missiles were first used in WWII to bring terror to London, Liège, and Antwerp. Wernher von Braun, the developer of the V2, and some of his engineers were transferred to the United States after the war and other colleagues of his were brought to the Soviet Union. From Germany, the US, and Russia, missile technology spread over the world - to France and Britain, to Israel and Iran, to China and India, to South Africa and to Brazil.

Currently, in addition to the five official nuclear weapons states (US, Russia, China, France, and Britain), 29 countries have ballistic

missiles. However, the threat caused by ballistic missiles is generally regional: only the missiles of the official nuclear weapons states have ranges to threaten each other as well as the whole world. There are no indications that this situation will change in the foreseeable future.

In parallel with missile development has come deployment of missile defence systems including defences against nuclear missiles of another super-power, protection against an inadvertent launch or missile-based attacks with weapons of mass destruction by a ‘rogue’ state, deflection or destruction of a comet aimed at planet Earth¹⁵ and the promise to “render nuclear weapons impotent and obsolete”.¹⁶

The US missile defence program is technologically the most advanced, and such defence plays a major role in overall US military strategy. By rendering nuclear weapons [of other nations] impotent and at the same time maintaining an overwhelming conventional and nuclear arsenal, the US ensures "full spectrum dominance".

But with the Anti-Ballistic Missile Treaty no longer in place, other countries will be provoked

to increase their nuclear arsenals. China has up to 20 long-range nuclear missiles. It is likely to increase this number to ensure a capability to overcome a US missile defence shield. It is then to be expected that India and Pakistan will also build up their own arsenals. Up to the year 2000, the US spent over \$120 billion on missile defence but has not yet been able to develop a reliable system.¹⁷

Table 3 - Missile Defence Systems At A Glance

PAC-2 Patriot Advanced Capability 2; upgraded version of the Patriot system used during the 1991 Gulf War; mobile theatre defence system against short-range missiles (less than 600 km).

PAC-3 As PAC-2, but also against mid-range missiles (less than 1,500 km) in their terminal stage. After a series of successful tests, the final testing went awry. In several cases, interceptors failed to fire out of launchers. When they did, they missed nearly as often as they hit. Unable to certify that the PAC-3 interceptor was ready for stepped-up production, Pentagon officials have put off the decision for at least a year and plan instead on further testing once fixes are in place.

Medium-Range Extended Air Defence System (MEADS) Mobile theatre defence system for mid-range missiles (less than 1,500 km). Interceptor missile will be PAC-3. Joint project by Germany, Italy, and the US.

Theatre High-Altitude Area Defence (THAAD) Designed to intercept short- and medium-range ballistic missiles (less than 3,500 km range) in the upper atmosphere (beyond 40 km) during their terminal stage. Two of eight intercept tests successful until 1999. THAAD missile is currently being redesigned; flight tests are scheduled to resume in 2004.

Sea-Based Midcourse Defence Labelled "Navy Theatre Wide" under the Clinton administration. Geared toward defending against short-, medium-, and intermediate-range ballistic missiles (less than 5,500 km range) during their midcourse stage (i.e. above the atmosphere in space) with an emphasis on the ascent phase. Eventually, the Pentagon wants the defence to be capable of countering strategic ballistic missiles, possibly in the boost phase. Two plotted intercept tests so far.

Ground-Based Midcourse Defence Labelled "National Missile Defence" by the Clinton administration; projected to intercept strategic ballistic missiles in their midcourse stage (i.e. above the atmosphere in space). Four of six plotted intercept tests successful so far. Development is far behind schedule; most components used in the tests are still surrogate systems.

Airborne Laser (ABL) Originally aimed against theatre ballistic missiles. The Pentagon now contends the ABL may have an inherent capability against strategic ballistic missiles as well. The expanded ABL objective is to shoot down all ranges of ballistic missiles in their boost phase. First intercept test in air scheduled for 2004. The aim is to have 2-3 ABL operative by 2006-2008.

Space-Based Laser (SBL) Being developed to counter all ranges of ballistic missiles in their boost phase. Pentagon plans during the Clinton administration called for a first space test in 2012, but funding cuts have pushed back the initial test date indefinitely, although recent reports suggest the Pentagon is exploring ways to accelerate the programme.

Navy Area Theatre Ballistic Missile Defence - cancelled Labelled "Navy Area Wide" under the Clinton Administration. Sea-based theatre defence system for a maximum range of 1,000 km. The programme was cancelled in December 2001 due to a 60% cost overrun.

Space-Based Infrared System-Low (SBIRS-Low) The approximately 30 SBIRS-Low satellites in low Earth orbit will replace the existing DSP systems and are expected to support US missile defence by providing tracking and discrimination data on warheads and decoys during their midcourse stage. The first launch of an SBIRS-Low satellite was to take place in fiscal year 2006, but the programme is currently being restructured because of high costs and schedule delays. An initial launch of an SBIRS-Low payload could occur in 2006 or 2007.

Space-Based Infrared System-High (SBIRS-High) 4 SBIRS-High satellites in geosynchronous orbit and sensors on two host satellites in a highly elliptical orbit are to provide early warning of global ballistic missile launches. The first launch of a geosynchronous satellite was scheduled to occur in fiscal year 2005, but it is now scheduled for 2007.

Table 4 - Key Military Documents on Space Warfare

- 1955 General Thomas D. White, at that time Air Force Chief of Staff, states that "The United States must win and maintain the capability to control space in order to assure the progress and pre-eminence of the free nations. If liberty and freedom are to remain in the world, the United States and its allies must be in position to control space."
- 1989 Commissioned by the US Congress, John M. Collins, senior specialist in national defence at the Library of Congress, writes *Military Space Forces. The Next 50 Years*. He dedicates the volume "To America's Military Space Forces, whose purpose is to protect this country's interests against aggression from or in space." Among others, the book details options and requirements to wage war in and from space, including the Moon. The book examines effects, disadvantages, and usability of various space weapon systems - e.g. missiles, space mines, laser and particle beam weapons.
- 1995 The US Air Force publishes the 15 volume *New World Vistas - Air and Space Power for the 21st Century*. The authoring USAF Scientific Advisory Board, supported by dozens of experts from military, academia, and commercial enterprises, is convinced that "the domain of conflict is moving from earth into space and even into cyberspace."
- 1997 The US Space Command's Vision for 2020 postulates "US Space Command - dominating the space dimension of military operations to protect US interests and investment. Integrating Space Forces into warfighting capabilities across the full spectrum of conflict." The document states that "The medium of space is the fourth medium of warfare - along with land, sea, and air. ... Space Forces will emerge to protect military and commercial national interests and investment in the space medium due to their increasing importance. ... There will be a critical need to control the space medium to ensure US dominance on future battlefields. Robust capabilities to ensure space superiority must be developed."
- 1998 In its Long Range Plan. Implementing USSPACECOM Vision for 2020, the US Space Command "captures in one place a comprehensive roadmap for achieving our visions for 2020." Supported by many US organisations and research laboratories as well as four dozen military and space corporations, the plan lists the relevant strategies, technologies and weapon systems, timelines, and (legal) problems. This document in particular leaves no doubt that the systems requested for missile defense are the same that would enable space warfare.
- 1999 US Secretary of Defense Bill Cohen releases a memorandum on Department of Defense Space Policy with Department of Defense Directive Number 3100.10, Space Policy attached. The directive defines the "DoD policy that: 1. Space is a medium like the land, sea, and air within which military activities shall be conducted to achieve US national security objectives. The ability to access and utilize space is a vital national interest because many of the activities conducted in the medium are critical to US national security and economic well-being. ... Space shall be considered as a medium for conducting any operation where mission success and effectiveness would be enhanced relative to other media." Falling short of explicitly calling for development of space weapons, the directive points out that "space and space-related activities shall comply with applicable presidential policies as well as applicable domestic and international law."
- 1999 Jim Oberg's Space Power Theory, originally planned to be published by the US Space Command, is finally published online without official support (although retired Commander-in-Chief of US Air Force, General Howell Estes III, co-authored the introduction). "It is almost certain that sometime early in the 21st Century, the fielding of space-based weapons will occur under the auspices of defense. ... [The world will] see the initial weaponization of space be followed by increasingly sophisticated armaments as proliferation occurs there as well. ... The means by which the placement of space-based weapons will likely occur is under a second US space policy directive - that of ballistic missile defense. ... Once in place, the use of space-based weapons, unlike nuclear weapons, will likely be unreserved, at least in their initial incarnation."
- 2000 The US Air Force Space Command's Strategic Master Plan for Fiscal Year 2002 and Beyond "documents a 25-year path to the future for our command. It starts by describing a Vision of the possibilities; "A globally integrated aerospace force providing continuous deterrence and prompt engagement for America and its allies ... through control and exploitation of space and information. This is a Vision that leads to an Aerospace Force able to change the course of events in hours, minutes and even seconds. ... Our plan emphasizes four areas in the near-term: (1) improving battlespace situational awareness for our theater CINCs (Commander(s)-in-Chief), (2) integrating air and space forces into an Aerospace Force, (3) evolving space superiority and (4) evolving information superiority. ... To maintain space superiority, we must have the ability to control the 'high ground' of space. To do so, we must be able to operate freely in space, deny the use of space to our adversaries, protect ourselves from attack in and through space and develop and deploy a NMD. capability."
- 2001 A few days before George W. Bush is sworn in as President, the Report of the Commission to Assess United States National Security Space Management and Organization is published. Headed by now-Secretary of Defense, Donald Rumsfeld, the commission found that "The relative dependence of the US on space makes its space systems potentially attractive targets. ... The US is an attractive candidate for a "Space Pearl Harbor." ... The US will require development of new military capabilities for operation to, from, in and through space in support of its national interests both on the earth and in space." The commission believes that "the US Government should ... ensure that the President will have the option to deploy weapons in space."

“Full Spectrum Dominance” and Control of Space

Although US President Clinton was reluctant to promote missile defence and unenthusiastic about space weaponisation, during his presidency the US Space Command started to develop its claim for space dominance and control. This resulted in the Space-Based Laser project, developed under the guise of missile defence, but better suited as an anti-satellite weapon. Later, Joint Vision 2020¹⁸ confirmed the notion of Full Spectrum Dominance and expanded it from earth, sea, and air into space. In January 2001, the Schriever Air Force Base Space Warfare centre conducted the first large-

scale space-based war game - a conflict in 2017 between almost equal adversaries. The adversary's characteristics were those of China. Systems under research or development would already allow the US to wage war in space.¹⁹

Space is currently heavily used for military purposes (weather forecasting, communication, navigation, reconnaissance, guidance of precision munitions, etc.) and the civil-military dual-use capability of space technology increases.²⁰ Using weapons from, in and through space, would provoke a new arms race - both here on Earth and far away.

Western Europe - A Need to Close the Technological Gap?

Although the US is the major player in all three fields - nuclear weapons, missile defences, and space militarisation - Western European countries also have stakes.

- European forces currently depend heavily on US technology and systems (exemplified in the Gulf War of 1991, the Yugoslavia War in 1998, and the Afghanistan War in 2001/02 when most action depended upon US satellite reconnaissance data).
- European governments believe that they must prevent a further widening of the technological gap between themselves and the US.
- European governments do not want to allow the evolution of zones of different security that would result from missile defence for US territory but not for the European continent.

Nuclear Weapons

Of the five official and three unofficial (India, Israel, Pakistan) nuclear weapons states, two are in Western Europe.²¹

- Britain retains 58 Trident D-5 long-range ballistic missiles, 48 of which can be carried

by a Vanguard class submarine.²² A maximum of 200 nuclear warheads are kept in the stockpile. These numbers are the result of considerable nuclear reductions since 1990. All tactical, maritime, and air-launched nuclear weapons were given up since the 1998 Strategic Defence Review. Three submarines are kept in reserve and one on active patrol. The missiles have several days 'notice to fire'.

The UK Government rejects not only further disarmament but even participation in nuclear disarmament negotiations. "To help make the world a safer place the Government is pressing for multilateral negotiations... but of course we are not there yet. When we are satisfied with progress towards ... global elimination of nuclear weapons, ... British nuclear weapons [will be] included in negotiations."²³ While the government talks about a nuclear weapons free world, the UK defence industry foresees new roles for nuclear armament. Nuclear weapons production, maintenance and development at the Aldermaston site is currently undergoing major refurbishment and re-equipment.²⁴

- France has up to 350 nuclear warheads that can be delivered from aircraft or submarines.

It has recently been modernising its arsenal, drawing on the results of the 1995 nuclear tests in which the French military tried out a new warhead and tested the safety, security and effectiveness of the detonators.²⁵ The modernisation is part of the 1996 reform of the French nuclear forces. Since then, French intermediate-range missiles were deactivated, test facilities in the South Pacific dismantled, and production of plutonium and highly enriched uranium has ceased. The Force de Frappe (Strike Force) has been renamed Force de Dissuasion (Deterrence Force).²⁶ However, the country keeps Mirage, Rafale, and Super Etendard airplanes, aircraft carriers, nuclear-powered submarines and a range of nuclear-capable including cruise missiles. Both air- and the sea-based nuclear forces are being modernised. Like Britain, France insists on the need for nuclear deterrence and refuses participation in disarmament talks.

The British and French nuclear capabilities are complemented by “nuclear sharing” within NATO. The US currently stores up to 108 B61-11 bombs in six European countries, Belgium, Germany, Greece, Italy, the Netherlands, and Turkey.²⁷ NATO confirmed the role of nuclear weapons in Article 42 of its 1999 Strategic Concept.²⁸ The only attempt to challenge NATO’s declared first strike policy was made in December 1998 by the then newly elected German Foreign Minister Joschka Fischer who suggested a step back from this doctrine in view of the end of the Cold War. The United States, Britain, and France were angered by Fischer’s move. The US refused all related discussion.²⁹

Missile Defences

During the 1990s, National Missile Defence (NMD) was considered destabilising by many European governments. Pointing at a domino effect with China, India, and Pakistan increasing their nuclear arsenals and fearing an erosion of the international arms control regime, German Foreign Minister Fischer was quite outspoken in his opposition and Chancellor Schröder warned of the evolution of zones of different security

within NATO if the US could only protect themselves. French President Jacques Chirac reminded us of the history of defence: ever since the invention of shields, new swords had been created to render them impotent.

But since 2000 missile defence has had a high priority for the US government. Consultations with US allies were undertaken to convince them of the need for such defence. This effort bore some fruit with Spain, Italy, and Poland promising full support. Germany expressed hope that its industry could share in the economic and technological benefits if the program could not be cancelled. France stopped harsh critique of the project and agreed to further discussions. The United Kingdom was willing to host a key radar component. Denmark, with Greenland a possible NMD radar site, agreed to US plans as long as they had no offensive purpose. EU spokesperson Javier Solana affirmed the US right to self defence. Opposition became so toned down that the former US ambassador at the United Nations, Richard Holbrooke, encouraged Europeans to bring their arguments against missile defence forward before it became too late. In the meantime, the US government announced withdrawal from the Anti-Ballistic Missile Treaty. The lack of reactions from China to this move and Moscow’s proposals to build a joint European/Russian missile shield quieted down the last counter voices in European capitals.

There had been a double standard all along. European opposition was limited to National Missile Defence. Theatre Missile Defence systems (TMD), directed at ballistic missiles with a range below 3,500 km, can protect complete countries or regions in Europe, can be used against longer range missiles during the boost phase, and can protect European and NATO forces during intervention campaigns elsewhere.³⁰ Several TMD projects are under way.³¹

- Germany and the Netherlands decided to buy PAC-3 (Patriot Advanced Capability 3) systems from the US for extended air defence.
- Germany, in cooperation with Italy and the United States, are working on MEADS, the Medium Extended Air Defence System, also based on PAC-3 components, and run by the

new industrial consortium EADS (European Aeronautic Defence and Space Company).

- France, Italy, and the United Kingdom are working on PAAMs (Principal Anti-Air Missile System), a sea-based system that could be enhanced for TMD capabilities.
- European NATO members are involved in NATO studies on low and high altitude TMD systems. US companies Lockheed Martin and Boeing are contracted to two competing feasibility studies; EADS is member of both teams. A NATO decision is due in 2004.

In an attempt to counter future dominance of US NMD and European TMD, Russian President Vladimir Putin suggested a joint mobile European missile defence system to focus on the boost phase and the deployment of Russian S-300 missiles close to the assumed threatening launch facilities in a crisis. In their joint declaration when signing SORT, Presidents Bush and Putin agreed to study areas of and potential joint programs for practical missile defence cooperation in Europe under the NATO-Russia Council.

Space Militarisation

The technological gap between the US and Europe is greatest in space systems. The US maintains many military and dual-use satellites, while European countries struggle to update minimum military space capabilities. Military satellites for reconnaissance, communication, navigation, information, and weather forecasting, are increasingly used in war-fighting. Except for Helios, European military satellites are national, with only a few bi- and multinational projects planned.

- Helios 1 is a military observation satellite program developed by France and supported by Italy and Spain. Helios 2, scheduled for 2004, will offer better resolution, faster data access, and night observation. Spain and Belgium are interested in contributing.
- Skynet provides military satellite communication for Britain. Three Skynet 4 satellites were launched in 1988 and 1990 and have since been updated.

- Sicral, launched in 2001, is Italy's first military satellite.
- Spain's Hisposat system is a dual-use communication satellite for civil, military and government communication.
- A series of new European systems are under development. Syracuse III, a dedicated military communication satellite for the French; SpainSat, a similar system for the Spanish; and BIMILSATCOM, a joint project of France and Germany, to provide military satellite communication from 2005. According to current plans, European reconnaissance capabilities will also be enhanced by four German SAR-Lupe radar satellites, four Italian Cosmo/Skymed radar satellites, and two French Pléiades optical systems before 2008.³²

In 1999, the EC decided to establish a European military capacity to undertake the full range of so-called Petersburg Tasks under the European Security and Defence Policy (ESDP). These Petersburg Tasks define the employment of European military units for humanitarian and rescue tasks, peace-keeping tasks and tasks of combat forces in crisis management, including peacemaking.³³ In September 2000, the EC stated that space presents a security dimension thus far dealt with only in the context of the WEU.³⁴ A few weeks later, on the initiative of the European Space Agency (ESA), a team of advisors - "three wise men" - issued their report.³⁵ They concluded that the space infrastructure for commercial and other public sector applications must move together with different security needs. The authors saw no problem with the ESA Convention that limits cooperation of member states for exclusively peaceful purposes. High on the agenda are the GMES program (Global Monitoring for Environment and Security) and the Galileo system. The initially strictly civilian project GMES is being converted to civil-military dual use. The military relevance of Galileo has also been clearly stated. Galileo will underpin the common European defence policy that member states have decided to establish. Although primarily for civilian applications, Galileo will give the EU a military capability.³⁶

Non-Proliferation and Arms Control - A Viable Alternative?

“Non-proliferation and disarmament can be pursued only jointly, not at each other’s expense.” - Jayantha Dhanapala, Under-Secretary-General for Disarmament Affairs of the UN (closing statement to the 1995 NPT Review and Extension Conference).

If the full arsenal of strategic weapons on earth and in space were ever realised, the situation would become extremely complex. Reconnaissance, communication, and navigation satellites are the backbone of the major military powers’ warfare capabilities. Anti-satellite (ASAT) systems could make the difference between victory or defeat within minutes. Conversely, missile defence weapons can be used not only to destroy ballistic missiles but also an adversary’s ASAT weapons. Space launchers could bring weapons into space, and launchers targeted by missile defences. Space weapons can attack ground targets, including missile launch facilities and radar systems. Conversely, ballistic missiles cannot only attack ground targets but also space objects. And a variety of new weapons technologies could be used, including microsattellites, space mines and direct energy weapons. Once the Pandora’s box of missile defence technologies and space weapons is opened, it creates considerable risks for the complex web of mutual vulnerabilities and threats. Security is rendered unpredictable, even for the US. Within the Pentagon doubts have been voiced as to whether this is wise.³⁷

Many experts believe that nonproliferation and arms control are better alternatives. Many areas of arms control are directly linked to the missile defence debate: control and disarmament of nuclear weapons, ballistic missiles, missile defences and military space systems. Below, some options are outlined out for each of these.

Nuclear Disarmament

Since WW II, control of nuclear weapons has played an important international role, even though substantial progress still has a long way to go (cf. the Non-Proliferation Treaty, SALT, INF, START, and the Comprehensive Test Ban

Treaty). During the cold war decades there were several attempts to minimise the dangers of the arms race and possible nuclear war; but only after 1990 did nuclear abolition rise higher on the international agenda (cf. the NPT Review conferences, the Canberra Commission, the Advisory Opinion of the International Court of Justice, the New Agenda Coalition, and numerous UN resolutions). The 1990’s also saw increased activity by non-governmental organisations (cf. Abolition 2000, Studies on a Nuclear Weapon Free World, the Model Nuclear Weapons Convention).

The tension has been between short term feasible steps and the long-term concept of a nuclear weapons free world. The Model Nuclear Weapons Convention tried to link the final goal of the nuclear weapon free world with concrete disarmament and confidence-building steps.³⁸ But for various reasons including nuclear testing in South Asia and the reluctance of the US Congress, the disarmament process remained deadlocked.

Some paper successes were achieved. In November 2000 a large majority of the UN General Assembly agreed on the New Agenda Coalition resolution for a nuclear weapons free world which for the first time was supported by all NATO States, including the USA, with abstentions only by France and Russia. The conditions for nuclear disarmament improved temporarily with Russian ratification of START II and the partial conclusion of a Comprehensive Test Ban Treaty. Both milestones, however, were closely linked to preservation of the ABM Treaty. The US-Russian Strategic Offensive Reduction Treaty, although an apparent breakthrough, did little more than cement what both sides would have done anyway.

One important next step is the cut-off treaty for nuclear weapons materials (FMCT or ‘fiss-ban’), to be negotiated at the Geneva Conference on Disarmament. But implementation of the 13 Steps agreed at the Non-Proliferation Treaty Review Conference of 2000 will take much longer. A start to negotiations on elimination of all nuclear weapons is essential. If

missile defences are deployed, this goal will be harder to achieve because nuclear weapon states will be reluctant to reduce their nuclear arsenals below a threshold determined by the defence capabilities of their competitors. Even without defensive systems, stability at low warhead levels is a problem with a few hidden nuclear weapons making a difference in perceived threats. Nevertheless, without such defences it will be easier to deal with confidence and stability problems.

International Control of Ballistic Missiles

Intercontinental-range Ballistic Missiles (ICBMs) are available only to the five nuclear weapon states while other states possess only short- and intermediate-range ballistic missiles. Previous threat perceptions of US secret services, on which the concept of National as well as Tactical Missile Defence was based, have not materialised. Diplomatic initiatives as in the case of North Korea represent an example of ways in which supposedly irrational states can be prevented from becoming major missile powers.

No multilateral agreement exists for limitation and disarmament of ballistic missiles. For missiles of medium and longer range, several treaties have been signed between the United States and the Soviet Union (INF and START). The Missile Technology Control Regime (MTCR) reduced the rate of missile proliferation by export control of the supplier countries, but did not prevent all missile development. As long as there is no international ballistic missile norm, no state can forbid missile development by any other state.³⁹

In 1992 the Federation of American Scientists (FAS) produced the Zero Ballistic Missile (ZBM) proposal, a complete Draft Treaty for the step-by-step Elimination of Ballistic Missiles.⁴⁰ The ZBM concept recommends creation of missile-free zones and limitations or even a ban on ballistic missile flight testing.⁴¹ It also freezes ballistic missile development at its current level; no further missiles are to be deployed.

A missile test moratorium would be verifiable since a launch can be easily detected. To

verify comprehensive missile disarmament it would be necessary to design an international monitoring system with satellite-based surveillance, and radars and other ground sensors directed into space.⁴² On-site inspections and non-destructive measurement devices at space-launch facilities would be needed to prevent use of space launchers for ballistic weapons. Exchange of information on launches and launch facilities would promote mutual trust. Proposals along these lines have been suggested by the Russian government in the context of a Global Control System (GCS) on Non-Proliferation of missiles and missile technology.⁴³

A UN General Assembly resolution introduced by Iran emphasises the need for a comprehensive approach towards missiles as a contribution to international peace and security. It requests that the Secretary-General prepare a report on missiles. An expert panel has now been set up and a report sent to the UN General Secretary in August 2002.⁴⁴

Limiting Missile Defence

The ABM Treaty was abandoned after a double pressure. On the one hand, successive US administrations tried repeatedly to withdraw from the narrower interpretations of its obligations. On the other, military-technological developments undermined its efficiency, in particular mobile and phased-array radars, Theatre Missile Defence (TMD) systems, anti-satellite weapons (ASAT), and exotic technologies such as laser weapons. US treaty withdrawal became effective in June 2002. It is now therefore difficult to conceive of ways to prevent the development, deployment, and proliferation of missile defences. Apart from the US, several other countries are working on missile defences: Israel has deployed the Arrow system, Germany and Italy work on MEADS, and Japan will cooperate with the US.

But even if missile defences cannot be completely prevented, there are measures to reduce their destabilising effects. John Pike (of FAS) had already in 1986 made specific proposals for quantitative and verifiable limits for various ABM components concerning the altitude,

relative distance, and velocity in interceptor tests; limits on laser brightness or the aperture of sensors and mirrors.⁴⁵ Physical analysis of potential limitations for laser weapons and TMD systems is collected in two studies by Jürgen Altmann.⁴⁶ With the 1997 Demarcation Agreement, Russia partly accepted the US request for legitimising its TMD program, by agreeing to velocity limits for the interceptor and its target.⁴⁷

Arms Control in Outer Space

A weapons ban is essential to prevent a space arms race. Long-range ballistic missiles fly through space, and to attack them defence systems have to use space. Space-based missile defences could become targets of anti-satellite weapons. In later phases, orbiting weapons are no longer precluded. This is particularly relevant in the context of US Space Command's plan to extend the dominance concept into space as well as with the proposals outlined in the Rumsfeld Commission Report of 2001 to defend the US against a "Pearl Harbor in Space".

These plans are not in the interests of the international community. A cornerstone of international space law is the Outer Space Treaty (OST) of 1967, together with its other linked space agreements. The OST Parties agreed to keep space for peaceful purposes, in the interests of all mankind. Military facilities on planets are prohibited as well as weapons of mass destruction in earth orbit, but not the presence of all weapons in space. The UN General Assembly has adopted resolutions annually on "Prevention of an Arms Race in Space" (PAROS) with overwhelming majorities, the US abstaining. But the UN Conference on Disarmament is stalled over both the fissile materials cut-off and PAROS, while US missile defence and space weapons technology continue. The US maintains that PAROS is not an issue, as space weapons have not yet been deployed.

Several other proposals against space weaponisation have been brought forward. The Union of Concerned Scientists' 1983 draft

ASAT ban treaty was extended in the German scientists' proposed Treaty on Limitation of Military Use of Space, presented in July 1984.⁴⁸ The latter treaty was debated in autumn 1984 in the German Parliament and supported by the Social-Democrats and the Green Party.

The Göttingen Draft Treaty would ban weapons directed against space objects (ASAT) and space-based weapons directed against any targets. It also contained bans on the use of space systems for guidance of nuclear weapons and deployment of manned military space centres. Even though the Göttingen Treaty was a product of its time, its motivation remains relevant to the present.⁴⁹

PAROS and a space weapons ban remain on the table. A variety of initiatives have been launched.⁵⁰

- In June 2002 China and Russia introduced a Joint Working Paper at the UN Conference on Disarmament on Elements of a Space Weapons Treaty, following up an earlier paper.
- US Congressman Dennis Kucinich introduced into the US Congress in January 2002 a Space Preservation Act, aiming at a space weapons ban for the US, accompanied by the text of a Space Preservation Treaty as an example for international legislation.
- Rebecca Johnson (Acronym) has suggested a repeat of the Ottawa process in which determined governments and non-governmental organisations joined efforts to get the landmines protocol signed.⁵¹
- Clay Moltz (Monterey Institute), to prevent an arms race in space, has suggested a mixed regime of weaponisation control and reassurance measures.⁵²

Disarmament - Not Defence!

“Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has.” - Margaret Mead.

Traditionally, diplomacy plays a much larger international role for Europeans than for North Americans. Talks, negotiations, confidence building, economic incentives, and cooperation are standard in European policy. Civil society has often profoundly influenced government decisions. Former Soviet President Mikhail Gorbachev has publicly confirmed that INF negotiations with Ronald Reagan moved much more smoothly under the pressure of huge demonstrations against Pershing-2, Cruise Missile, and SS-20 deployment.

Although the outlook for arms control and disarmament in the fields of nuclear weapons, missiles and missile defences, and arms in space is rather bleak at the moment, it is of utmost importance that civil society make itself heard.

This is why a host of individuals, loosely connected groups, and NGOs have taken up the challenge. Coalitions like Abolition 2000 - A Global Network to Eliminate Nuclear Weapons (www.abolition2000.org), the Global Network Against Weapons and Nuclear Power in Space (www.space4peace.org), the International Network of Engineers and Scientists Against Proliferation with its project “Moving Beyond Missile Defence” (www.inesap.org, www.mbmd.org), the Campaign for Nuclear Disarmament (www.cnduk.org), and many others, represent hundreds of groups and millions of individuals. Projects like the Women’s International League for Peace and Freedom (WILPF) “Reaching Critical Will” (www.reachingcriticalwill.org) provide the necessary information.

It is up to you who read this to help all of us change the world!

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