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## SIPRI Yearbook 2002

### Armaments, Disarmament and International Security

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'The 11 September terrorist attacks on the United States marked a watershed in the international security process. . . . The qualitatively novel phenomena and changes in the world call for a new, unconventional approach. Since the risks are global, the responses should be global as well. This, in turn, requires a system that fosters and generates cooperation rather than rivalry among powers and other actors. The world is interdependent. Positive and negative processes and phenomena are of a global character. The greatest challenge of the contemporary world is not so much the rivalry over power or territorial expansion—motives that dominated in the colonial era—as it is dealing with the new threats of global terrorism, proliferation of weapons of mass destruction and organized crime, on the one hand, and local and regional conflicts on the other. . . .

The adaptation of the cooperative security system to new tasks calls for the elaboration of new principles and norms adequate to the requirements of the contemporary world. International structures, institutions and organizations are also being reassessed, since they have so far not been able to address effectively the needs and challenges of global processes and the accelerated modernization in the world today.'

***From the Introduction***

*SIPRI Yearbook 2002* may be obtained from July 2002  
through all main bookshops  
or from Oxford University Press.

Orders may also be placed through SIPRI on the Internet at  
<http://www.sipri.org/pubs/bookorder.html>.

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See Internet URL: <http://www.sipri.org> for more background material.

## **HIGHLIGHTS from the SIPRI YEARBOOK 2002**

### **Security and conflicts**

- The 15 most deadly conflicts in 2001—those that killed over 100 people—were all intra-state conflicts, but all of them were directly affected by external actors and 11 of them spilled over international borders. 11 of the conflicts have lasted for eight or more years.
- 51 multilateral peace operations were operational during 2001. There were no new UN peace missions in 2001 for the first time since 1996.
- The International Security Assistance Force operation in Afghanistan was launched on a British initiative on the basis of a UN mandate. Some 4700 military personnel from 18 countries are taking part. More than 30 states have made military contributions.
- The 11 September attacks brought home to the EU the reality of its role in the transatlantic relationship. This will influence the division of labour and complementarity between Europe and the USA and will increase pressure on Europe to improve its military capabilities in both the EU and NATO.
- Increased importance is being attached to developing cooperation with the armed forces, intelligence services and law-enforcement services of states to identify groups and individuals engaged in terrorist acts. There is a risk that security sector reform will become subordinate to anti-terrorism activities in countries where the development of this cooperation is seen as particularly important.
- During 2001 sanctions continued to play an important role in efforts to manage a range of security problems. Both the United Nations and the European Union have been working to improve the effectiveness of sanctions as an instrument for managing international security problems.

### **Military spending and armaments**

- World military expenditure in 2001 is estimated at \$839 billion (in current dollars), accounting for 2.6 % of world gross domestic product and a world average of \$137 per capita. Five countries account for over half and the 15 major spenders account for more than three-quarters of total world military expenditure.
- The high-income countries—the industrialized countries and those in the Middle East—have the highest per capita military spending. The developing countries—particularly the low and middle income countries in Africa and the Middle East—have the heaviest economic burden in terms of GDP share.
- The process of concentration in the arms industry has produced several extraordinarily large companies, each producing military goods and services with an annual value of \$5–\$19 billion. Concentration has moved from the national to the international level. Internationalization in Europe is seen as a prerequisite for Europe to become competitive with the USA and for establishing military industrial partnerships with US companies.
- A 24% increase in arms transfers made Russia the largest arms supplier in 2001. China was by far the largest arms recipient in 2001 after an increase of 44% from 2000. Imports by India increased by 50%, making it the third largest recipient in 2001.

## Non-proliferation, arms control and disarmament

- US President George W. Bush's announcement that the USA would withdraw from the ABM Treaty was greeted with a restrained reaction from Russia, China and US allies. The decision cleared the way for the USA to develop a ballistic missile defence system larger in scale and scope than the limited system envisaged by the Clinton Administration.
- Against the background of improved political relations, Russia and the USA agreed in November to negotiate a new arms reduction deal which would reduce by the year 2012 the strategic offensive nuclear forces of each country to 1700–2200 operationally deployed nuclear warheads, but not require the elimination of warheads removed from service, raising concern over reduced confidence and greater unpredictability in nuclear force postures.
- Two questions are at the root of US concerns about the role of arms control. The first is how to respond when parties violate an agreement to which they are a party. The second is whether arms control processes and agreements can modify the behaviour of key states.
- The total world nuclear stockpile consists of over 36 800 warheads. In addition to deployed nuclear warheads, thousands more are held in reserve and are not counted in official declarations. The proportion of 'unaccountable warheads', including spares, those in active and inactive storage and 'pits' (plutonium cores), has increased in recent years.
- There is concern that increased reliance on, and new missions for, tactical nuclear weapons can be expected. Concerns are exacerbated by the continued lack of transparency surrounding their numbers and operational status.
- The magnitude of the changes that are needed to protect nuclear material against terrorist attacks has not been widely appreciated. There is evidence that terrorists and thieves have already threatened or attacked nuclear facilities and tried to purchase or steal nuclear and other radioactive material.
- At the end of 2001, the USA had nearly 110 operational military-related satellites, accounting for well over two-thirds of all military satellites orbiting the earth; Russia had about 40 and the rest of the world about 20. The issue of the 'weaponization' of outer space has reappeared on the arms control agenda.
- In 2001 the USA rejected a draft protocol to strengthen the 1972 Biological and Toxin Weapons Convention and proposed that the negotiating mandate of the ad hoc group which had drafted the protocol be terminated.
- Without US participation, the effectiveness and viability of arms control and disarmament regimes would be significantly reduced. Specific US concerns regarding each agreement should be addressed through the use of technical and semi-technical analyses with which the political leadership of other countries can engage US political leadership.
- Although the European model of conventional arms control measures is seen as a positive example, conventional arms control remains a low security priority elsewhere in the world.
- There are now 41 states that participate in one or more of the 5 multilateral weapon and technology export regimes and 27 states participate in all of them.

# **SIPRI Yearbook 2002**

## **Armaments, Disarmament and International Security**

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## SUMMARIES from the SIPRI YEARBOOK 2002

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The 33rd edition of the SIPRI Yearbook contains the results of SIPRI's traditional research as well as new studies, reflecting the dramatic changes in the world security environment over the past 12 months. SIPRI's research is organized around three main areas: security and conflicts, military spending and armaments, and non-proliferation, arms control and disarmament. The volume presents comprehensive data sets and analyses, based on open sources, which illuminate the new—or newly prominent—risks and threats to international security. Several studies have been written for SIPRI by external experts. All of the chapters and appendices provide sober, well documented assessments of world security affairs. It is this research tradition that has built up SIPRI's high reputation over the past 37 years and offers an important contribution to openness, transparency and democratic control over the military and security sector.

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### Introduction

**Adam Daniel Rotfeld**

The 11 September 2001 terrorist attacks on the USA marked a watershed in the international security process. The policies and mutual relations of the USA, Russia and many other states have changed. Combating terrorism has become a matter of the highest priority. However, the transatlantic community is confronted with a disagreement over the main aim: whether to focus on disrupting and defeating the al-Qaeda network or eliminating the roots of terrorism with a broader range of policies.

The International Security Assistance Force Operation was launched on a British initiative on the basis of a UN mandate. The operation was envisaged to last 6 months. Some 4700 military personnel from 17 European countries and New Zealand are taking part. The operation is under the command of the UK, which is to hand it over to Turkey in June 2002. At various stages of the operation, more than 30 states have made military contributions.

In spite of the many declarations and UN Security Council resolutions, expectations of a global response on the prevention of terrorism fell flat—both globally, in the United Nations, and regionally, in NATO. Although the issue concerns domestic and external security, the need for common responses in the security field has not been

accepted globally. The interventions in Kosovo and Afghanistan reflect the new aspiration to establish international rules for protecting and defending respect for the basic principles and norms of international order. However, there is a lack of internationally recognized legal instruments to effectively tackle situations in which states have traditionally exercised their discretionary power and/or justified their actions as self-defence.

Four premises are of key importance in shaping a new global security system. The first is that the development and spread of the technologies of 'the network age', particularly information technology, are a part of the process of globalization. The second is that a growing number of states are too weak to control developments on their territory; consequently, they have become a base and an asylum for international crime and terrorist networks. The third is the blurring of the distinction between domestic and external security. The fourth is the growing importance of non-military aspects of state security.

The phenomenon of failed states has various causal factors: the emergence of new states after the collapse of multinational federations; the exposure of poor states to globalization and modernization processes; and higher standards of governance called for by the international community. The stability and efficacy of the state and respect for the norms and rules of law are more important to the maintenance of international order than a state's military potential.

The internal transformation and enlargement of NATO and the EU have accelerated. The states of Central Asia have gained in significance. The policies of Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan are now more salient than those of many European states. The adaptation of the cooperative security system to new tasks calls for the elaboration of new principles and norms adequate to the requirements of the contemporary world. The USA can play a decisive role. It has a position unprecedented in history in terms of military, economic and technological capabilities. In the economic sphere, US national product accounts for 31 per cent of world production. This preponderance both tempts and permits the USA to act unilaterally. However, security is based on interdependence rather than independence or preponderance. While this understanding is reflected in official US statements, in practice the US tendency towards unilateralism in decision making prevails. The world needs the USA as never before, but the USA needs the rest of the world, too. Neither domination and hegemony nor neo-isolationism offer an adequate response to the new challenges.

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## 1. Major armed conflicts

### Taylor B. Seybolt

All of the 15 most deadly conflicts in 2001—those that caused 100 or more deaths—were intra-state conflicts. The central point of contention in all of the conflicts was control over either government or territory. However, the diversity of state and non-state actors reveals multiple and overlapping objectives related to political power, economic gain and ideological belief.

Despite their intra-state nature, none of the conflicts existed in isolation. All of them were directly influenced by external actors. In most cases, the supply of military *matériel* by state and sub-state actors and overt military intervention by states served to prolong and intensify the conflicts. Just as commonly, other states and intergovernmental organizations attempted to counteract this type of external influence through mediation and the promotion of peaceful settlement of disputes.

The intra-state conflicts were not only influenced by external actors but also influenced their external environments. Of the 15 conflicts, 11 spilled over international borders in 2001. Most commonly, they threatened to destabilize neighbouring states through the burden of refugees, cross-border movement of rebels (and occasionally national military forces), and the undermining of legitimate economic and political structures by the illicit trade in resources and arms. However, the regional impact of conflict spillover varied. In some cases, the cross-border movement of rebels and arms caused conflicts in neighbouring states to intensify. In other cases, neighbouring states were not significantly affected by conflict spillover.

Eleven of the 15 conflicts have lasted for 8 or more years. One of the reasons for their endurance is the inability of either side to prevail by force. In the vast majority of these conflicts, rebels used a guerrilla military strategy. They supported their military effort through the sale of minerals, timber and narcotics and through remittances from supporters abroad. However, very few groups tried to win the loyalty of the population through political, economic or social programmes. Historically, such programmes have been important elements of successful insurgencies. From the perspective of the government, it is very difficult to win a guerrilla war militarily. It is difficult to use the military's full strength against small and mobile opponents, and even a military victory does not solve the problem that led to the insurgency. Long conflicts, where weak antagonists often attack even weaker targets, cause a large number of civilian casualties and destroy economic and social infrastructure.

Although the general pattern of conflict worldwide in 2001 was consistent with previous years, the pri-

orities and perceptions of many states changed as a result of the terrorist attacks in the USA on 11 September. The campaign against terrorism by the USA and its allies in the latter part of the year directly influenced a small number of conflicts and had a much wider indirect impact, the full effects of which remain to be seen.

- *Appendix 1A, by Mikael Eriksson, Margareta Sollenberg and Peter Wallensteen, presents data on the patterns of major armed conflicts in the period 1990–2001.* In 2001, there were 24 major armed conflicts in 22 locations. Both the number of major armed conflicts and the number of conflict locations in 2001 were slightly lower than in 2000, when there were 25 major armed conflicts in 23 locations. Africa continued to be the region with the greatest number of conflicts. Worldwide, there were approximately equal numbers of contests for control of government and for territory.

In the 12-year post-cold war period 1990–2001 there were 57 different major armed conflicts in 45 different locations. The number of conflicts in 2001 was below the average of around 27 per year since the end of the cold war. The highest number of conflicts for the period 1990–2000 was recorded in 1990–93, and the lowest in 1996 and 1997.

All but 3 of the major armed conflicts registered for 1990–2001 were internal—the issue concerned control over the government or territory of one state. The 3 interstate conflicts in this period were Iraq versus Kuwait, India versus Pakistan and Eritrea versus Ethiopia. Other states contributed regular troops to one side or the other in 15 of the internal conflicts. The year 2001 was overshadowed in September by one new major conflict with qualitatively different, global characteristics which have so far proved difficult to categorize.

- *Appendix 1B explains the definitions, sources and methods for the data collection presented in appendix 1A.*

- *Appendix 1C, by Taylor B. Seybolt, examines 16 conflict data sets.* Since the 1980s, with the advent of the widespread use of computers, a multitude of conflict data-collection projects have emerged. As a result, there is disagreement on some of the most basic questions. Is the world more or less violent today than in the past? Are wars more or less destructive than they used to be? Are modern violent conflicts different from earlier ones? What are the causes of conflict initiation, continuation and termination?

In an ironic twist on the presumption of objectivity that underlies the quantitative research projects, the diversity of systematic data collection appears to support the constructivist argument that reality lies in the eye of the beholder. The core issue is the

balance between reliability and validity—between accuracy in recording information and appropriateness of the information for addressing theoretical concepts of interest. The balance confronts both quantitative and qualitative attempts to simplify the world in order to understand it and elicits different types of solutions from different types of researchers. Quantitative research places primary importance on reliability. To fulfil the requirement of systematically recording a series of events in a consistent manner, conflict data projects need to delimit complex phenomena through definitions and coding rules. In the process, they limit the range of their validity. The problem of limited validity is partially resolved by the wide variety of data-collection projects that now exist. The reviewed projects offer researchers a vast array of good data with which to develop academic theories and policy-related arguments. Full Internet addresses are given for all of the major conflict data sets.

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## 2. Conflict prevention

**Renata Dwan**

The prevention of violent conflict is a relatively new item on the agenda of multilateral forums. Since the mid-1990s, discussions have focused on the desirability and feasibility of international preventive action. In 2001 the United Nations and the European Union attempted to move conflict prevention from concept to practice. In similar processes both the UN and the EU set out frameworks for the principles of conflict prevention, reviewed existing preventive tools within their organizations, recommended institutional changes to improve and broaden the scope of these instruments, and proposed strategies for intra- and inter-organizational coordination to facilitate the effective implementation of prevention. The comprehensiveness of these reports, the high level at which they were considered and the policies they can potentially lead to mark a coming of age for conflict prevention as a norm in international politics.

Approaches to the threat of terrorism have the potential to incorporate many of the central tenets of conflict prevention. Issues such as the root causes of terrorism, structural and short-term approaches to its prevention, the broad range of state and non-state actors involved, and the multiple tools required to address terrorist threats are precisely the issues with which conflict prevention research and policy making have grappled over the past decade.

Initially, it seemed that international organizations and states might incorporate the preventive framework into their approach to terrorism, but the subsequent global effort has moved away from a

preventive focus and has now narrowed to a 'war against terrorism'. In this narrower approach, the preventive concept is severely circumscribed. Prevention of terrorism, as currently practised, consists of measures taken to stop international terrorism, cut off the financial, political and military sources of terrorist support and, where possible, apprehend terrorists before they commit acts of terror. Although this approach employs a broad range of instruments, it is coercive and short-term in character. It is in origin and practice distinct from the concept of conflict prevention elaborated over the past decade and reflected in the UN and EU documents of 2001. Indeed, the current approach to the prevention of terrorism risks undermining the entire notion of conflict prevention.

There is a risk that the prioritization of military relations between states will undermine the important progress forged in the post-cold war world in broadening international affairs so as to take greater account of non-military issues and the legitimate engagement of non-state actors.

The war against terrorism has led to new relationships between states that were formerly at odds with each other. In many cases, these differences centred on the domestic policies of a state. Improved regional and international cooperation to meet common threats may contribute to stability and peace, but the extent to which states such as Pakistan, Sudan or Tajikistan are called upon to assist in the fight against terrorism may constrain the international community's willingness to engage with them on such sensitive questions as governance and human rights. The global effort against international terrorism marks the appearance of a new paradigm in international politics. It is important that it does not undermine the conflict prevention norms that have so recently been established.

• *Appendix 2A, by Renata Dwan, Thomas Papworth and Sharon Wiharta, presents data on the 51 multilateral peace missions which were initiated, ongoing or terminated in 2001. It also discusses peace missions in the Balkans and Africa and the International Security Assistance Force in Afghanistan.*

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## 3. The military dimension of the European Union

**Zdzislaw Lachowski**

The ESDP 'Headline Goal'—to be able by 2003 to rapidly deploy a corps level force, for crisis management tasks—has been pursued since the 1999 Helsinki European Council meeting. Efforts have also been made to better meet security threats by implementing the full range of crisis management

missions: the 'Petersberg tasks'. Events in 2001 served as a mid-course test for the success of these efforts. The EU is confronted with several major questions: what the ultimate goal and shape of the ESDP will be; how best to pursue the Headline Goal in terms of both institutions and capabilities; and the challenge of politico-military integration.

The 11 September attacks brought home to the EU the reality of its role in the transatlantic relationship. This will influence the division of labour and complementarity between Europe and the USA and increase the pressure on Europe to improve its military capabilities in both the EU and NATO. Building up the ESDP should allow it to shoulder a larger share of the burden of European security, thus rebalancing the transatlantic security relationship. The new military capabilities provided by the ESDP have the potential to help redefine this relationship.

Some EU capability shortcomings were addressed wholly or in part in 2001, but the EU plans concerning the most critical aspects of its European Rapid Reaction Force are either still encountering political and financial obstacles or will need a much longer implementation period than the target date of 2003. Although the ESDP has been declared operational and able to perform the less demanding Petersberg tasks, the crucial issue of EU access to NATO's assets and capabilities remained unresolved. The reasons why the Headline Goal schedule has not been met are complex. While the EU has avoided falling into the trap of Europeanism-versus-Atlanticism, the scope of the ERRF has not yet been clearly defined. The issue of unavoidable but rational duplication of efforts by the EU and NATO has not been sufficiently addressed.

Defining the ESDP and building public support for increased spending will be challenging issues in the years ahead. Before the 11 September terrorist attacks the EU governments did not perceive an urgent need for military-related spending increases. Now their tax payers must be persuaded of the need to spend more. The European states have been slow to increase their military budgets, demonstrate flexibility and inventiveness in rationalizing procurement policies, and embark on regulation and restructuring of the defence industry. There is a need for a synergistic and rational approach to defence spending, and the creation of a single arms-procurement organization would make a positive contribution in this respect. The negative outcome of the Irish referendum on the Nice Treaty in June 2001 underscored the gap and the need for dialogue between the public and government.

The lack of leadership within the EU, its cumbersome decision-making bodies and the propensity of the major EU governments to act alone in a crisis

(as demonstrated during the November 2001 campaign in Afghanistan) illustrate the difficulty of forging a common foreign, security and defence policy. The future enlargement of the EU and NATO also pose challenges which may temporarily weaken the ESDP.

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#### **4. The challenges of security sector reform**

**Dylan Hendrickson and Andrzej Karkoszka**

States aspiring to democratic governance and strong economies require capable administrative and political structures. A key element is a well governed security sector, which comprises the civil, political and security institutions responsible for protecting the state and the communities within it. Reform or transformation of the security sector is a growing focus of international assistance. Past security assistance programmes were often ill-conceived and poorly implemented and resulted in outcomes that were not supportive of either citizen security or development goals. External forces have often supplanted the local security apparatus or, in some cases, explicitly sought to dismantle it where it was considered to be part of the problem.

The international community is seeking to respond in a more integrated manner to the violent conflicts and security problems facing states. Security sector reform is part of an attempt to develop a more coherent framework for reducing the risk that state weakness or failure will lead to disorder and violence. Where states are unable to manage developments within their borders successfully, the conditions are created for disorder and violence that may spill over onto the territory of other states and perhaps ultimately require an international intervention. Restoration of a viable national capacity in the security domain, based on mechanisms that ensure transparency and accountability, is a vital element of the overall effort to strengthen governance. Security sector reform aims to help states enhance the security of their citizens. There has been a shift from state- and military-centric notions of security to a greater emphasis on human security. This has underscored the importance of governance issues and civilian input into policy making.

Security sector reform has potentially wide-ranging implications for how state security establishments are organized and for how international security and development assistance is delivered. These implications are only just starting to be understood and translated into policy and are eliciting mixed reactions from both the international actors that provide security assistance and the recipients of aid. The Central and East European



states have responded favourably to the reform agenda, which is seen to complement the wider economic and political reforms in which many of them are engaged. Crucially, the prospect of integration into NATO and 'the West' has provided a powerful, additional incentive for CEE states to reform their security sector. This cannot be matched by regional and sub-regional organizations in Africa, Asia or Latin America. In these regions the primary incentive for reform has been based largely on persuasion and the use of economic assistance.

Security sector reforms are a new area of activity for international actors, and there is still not a shared understanding at the international level of what this term means. This has limited the debate on the subject. Assisting in the development of such a shared understanding should be a priority objective for the research community.

The response of states to the 11 September terrorist attacks on the USA may delay the development of a security sector reform agenda. Increased importance is being placed on developing cooperation with the armed forces, intelligence services and law-enforcement services of other states to identify and eliminate groups and individuals engaged in terrorist acts. There is a risk that security sector reform will become subordinate to anti-terrorism activities in countries where the development of this cooperation is seen as particularly important.

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## 5. Sanctions applied by the European Union and the United Nations

**Ian Anthony**

During 2001 sanctions continued to play an important role in the efforts to manage a range of security problems while the reform of sanctions witnessed towards the end of the 1990s continued. Both the United Nations and the European Union have been working to improve the effectiveness of sanctions as an instrument for managing international security problems.

Although the word 'sanctions' is frequently used, it does not have an agreed definition. The UN Charter does not use the word at all but refers to measures that may be adopted in response to identified threats to the peace, breaches of the peace and acts of aggression. The implications of using sanctions against states are similar to a military action as their intent is always to inflict damage on the target. For this reason, the legitimacy of sanctions applied without a decision by the Security Council has been questioned.

Sanctions are now not only applied to target states, but also to non-state entities and, increas-

ingly, to individuals. After the terrorist attacks on the USA on 11 September the UN Security Council agreed on extensive measures against groups and individuals that have carried out acts of terrorism. The use of sanctions against terrorism—a general and global threat rather than a threat to the peace, breach of the peace or act of aggression in a specific location—is unprecedented but draws heavily on recent UN experience with the development of targeted sanctions. However, it is not currently proposed to apply similar measures to other general threats identified by the Security Council.

The EU has established sanctions against states although the UN Security Council has not taken a similar decision. In some cases the EU has maintained its sanctions after the Security Council has decided to end UN measures. These decisions reflect the emergence of a political actor with an identity separate from the identity of its member states, since those states would not themselves have taken these decisions outside the EU context.

This is a distinctive approach to the use of sanctions in support of its CFSP. Sanctions are being used by the EU as one instrument to advance its objectives on democratization and human rights. The EU sanctions achieved some success in South-Eastern Europe when used as part of a broader set of security-building measures.

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## 6. Military expenditure

**Elisabeth Sköns, Evamaria Loose-Weintraub, Wuyi Omitoogun, Petter Stålenheim**

World military expenditure in 2001 is estimated at \$839 billion (in current dollars), accounting for 2.6 % of world gross domestic product (GDP) and a world average of \$137 per capita. This estimate is based on adopted defence budgets and is likely to be revised upwards when supplementary expenditures resulting from the 11 September attacks on the USA and the ensuing war on terrorism have been taken fully into account.

Five countries account for over 50% and the 15 major spenders account for over 75% of world military expenditure. The high-income countries—the industrialized countries and those in the Middle East—have the highest per capita spending. The developing countries—particularly those in Africa and the Middle East—have the heaviest economic burden in terms of its share of GDP.

After the decline from 1987 to 1998, military expenditure began to rise again, both globally and in most regions of the world. Over the 3-year period 1998–2001, it increased by around 7% in real terms. The increase of 2% in 2001 is smaller than the increases in 1999 and 2000, but world military expenditure is likely to rise much faster in the

coming years, owing primarily to a substantial increase in US military spending.

The increase in military spending since 1998 is primarily the result of the change in trend in the Middle East, CEE, N. America and East Asia. The most marked change in trend has taken place in Russia, where the rapid reduction of military spending changed into growth in 1999 and stabilized in 2001 at a level comparable to that of some major West European countries. In Western Europe, military expenditure has increased only slightly.

There are different reasons for the change in trend. Military expenditure can be seen as a function of driving forces within prevailing economic and political constraints. Determinants of military expenditure are of four broad types: security-related; technological; economic and industrial; and more broadly political. One of the factors behind the change into growth in Europe and North America is the assumption of new military tasks in the form of peace support operations while at the same time inertia in existing procurement programmes continues to absorb large-scale funding. In Russia, the main explanation for the change in trend is economic: the earlier economic constraints, the primary reason for the reduction in Russian military expenditure, have eased since the late 1990s. In East Asia, economic factors also seem to be a determinant of the trend in military spending. There is also a strong security-related element in China and on the Korean peninsula. External security factors play a major role in South Asia and the Middle East, while in Africa the acceleration in military expenditure is primarily due to domestic armed conflict and restructuring of the armed forces.

The 11 September terrorist attacks raised the profile of NATO burden sharing. A US Congressional Budget Office study has concluded that, while US military expenditure is higher in terms of GDP share and population, the gap has narrowed. Moreover, the gap reflects US global security interests in addition to its contributions to NATO. As regards specific contributions to NATO peacekeeping operations and donations of economic aid, the European allies are taking on a more than proportional share of the burden.

A US General Accounting Office study concluded that while total US military expenditure is higher than European expenditure, the cost of the US supporting its military presence in European NATO countries in 2000, estimated at \$11.2 billion, was 50% lower than in 1990. The shortcomings of European countries were in specific military capabilities, such as mobility of forces and the technological level of their equipment.

• *Appendix 6A contains tables of military expenditure for 158 countries in local currency and*

*constant dollars, and as a share of gross domestic product for the period 1992–2001.*

• *Appendix 6B contains data for NATO military expenditure on personnel and equipment.*

• *Appendix 6C explains the sources for and methods of data collection.*

• *Appendix 6D explains the sources for official data on military expenditure.*

• *Appendix 6E, by David Gold, discusses US military expenditure and the 2001 Quadrennial Defense Review. No increases were requested for weapons procurement in the FY 2001 US Defence budget. The Bush Administration had promised a far-reaching revision of US military strategy in the Quadrennial Defense Review (QDR). During the 2000 presidential election campaign, he had indicated that his administration would consider skipping a generation of weapons in order to free funding for a major transformation of the US military. The resulting budget request for FY 2002 was 7% higher, in real terms, than the FY 2001 budget request of the Clinton Administration.*

The 11 September 2001 terrorist attacks in the USA changed this outlook. With the near unanimous consent of the Congress, President Bush declared a 'war on terrorism' that was expected to be long-lasting and near global in scope. Congress authorized a supplementary appropriation of \$40 billion to be applied immediately to anti-terrorism activities, half in FY 2001 and half in FY 2002. Rather than postponing any large projects, administration officials indicated that the existing procurement projects would be retained in its budget request for FY 2003 and in its programme for future years. Thus, the USA was poised to begin a major expansion of its military spending.

The 2001 QDR has provoked relatively little discussion, especially when compared with the 1997 QDR. This may be due to the environment that has emerged after the terrorist attacks in the USA. The failure of the 2001 QDR to articulate a more specific vision of US military policy, and the emphasis in the budget on continuity rather than change, suggests that a major opportunity has been lost. It also suggests that providing the military with substantially more funding, however justifiable in terms of short-term security perceptions, may, over time, prevent the very reforms that leaders claim are needed.

There are many uncertainties in the short-term outlook for US military spending, the course of the war against terrorism being the most important. The programme put forward by the Bush Administration for the US armed forces, both in its budget requests and in its other statements, most prominently the QDR, also raises uncertainties in terms

of its ultimate affordability and its conformity to an overall vision of the role of the US military in the emerging global environment. The investment accounts are 'back-loaded', that is, a large part of the funding for the completion of current programmes is concentrated in the later years of the five-year projections. Such back-loading assumes that funding will be available when it is needed, but a future budget squeeze would force the DOD to make the choices between programmes that have so far been postponed.

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## 7. Arms production

**Elisabeth Sköns and Reinhilde Weidacher**

The arms industry underwent a profound restructuring after the cold war. In the first half of the 1990s it experienced a significant cut in orders, both domestically and from foreign governments. The level of arms production declined sharply in all major arms-producing countries. The reduction in demand for military equipment during the 1990s was significant, both in the aggregate and for some individual countries. NATO statistics show that the combined military equipment expenditures of all NATO countries dropped by 40% in real terms from the peak levels of 1987 to 2001—by 43% in the USA and by 35% in NATO Europe, although with great variations between countries. In Europe the reductions took place during the first half of the 1990s. Since 1997 equipment expenditure in NATO Europe has increased by 6% in real terms. According to NATO statistics, the decline in total NATO equipment expenditure since 1997 is due to the continuing reduction in US expenditure.

Estimates of national arms sales—used as an approximation of arms production—for the 7 largest arms-producing countries in Western Europe show a sharp decline between 1990 and 1995 in most countries, and a slower decline thereafter. Arms production has increased only in Sweden, a reflection of the JAS-39 Gripen combat aircraft programme. In recent years, the decline in arms exports has been sharper than in arms production. Attempts to compensate for decreased domestic arms procurement by increased arms exports do not appear to have been successful.

Since the mid-1990s the main goal of the large arms-producing companies has been to expand and to improve capacity to win arms procurement contracts, through takeovers, mergers, joint ventures and other forms of company-to-company cooperation, both nationally and internationally. These developments, combined with the processes of commercialization and privatization, are resulting in fundamental changes in the global system of arms production and trade. The increased commer-

cialization of arms production is a result of changes in technology but also of privatization of the arms industry and outsourcing of an increasing range and amount of military services and functions.

The process of concentration of ownership within the arms industry has moved from the national to the international level, driven by the largest companies in their search for access to military markets. A limited number of extraordinarily large companies have emerged, each producing military goods and services with an annual value of \$5 billion to \$19 billion. Internationalization efforts in Europe are seen as a prerequisite for becoming competitive with the USA and for establishing military-industrial partnerships with US companies. However, European industrial integration is proceeding slowly, and there has been renewed interest in the establishment of transatlantic industrial links, largely within the context of government-to-government programmes for the development and production of specific weapon systems.

Market access is the predominant motive for European and US acquisitions of arms-producing companies in minor producer countries that constitute potential markets. The increased acceptance of foreign ownership in the arms industry by governments in these countries primarily reflects their search for access to advanced technology and to some extent to foreign markets. Both the commercialization and the internationalization of arms production are driven by companies in search of higher profit margins.

Private arms-producing companies have assumed an important role in defence industrial policy decisions. Governments have maintained their role as key supporters of arms-producing activities within their countries—through R&D funding, procurement and export support. This raises the question of the extent to which the role of national governments is diminished with regard to the control and regulation of the supply of armaments to national and foreign armed forces. It also raises the issue of transparency in the development of military technology and the production of equipment and services that increasingly take place in large, powerful, privately owned companies.

- *Appendix 7A contains financial and employment data on the 100 largest arms-producing companies in the Organization for Economic Cooperation and Development and developing countries. For the first time there is also a tentative list of the 20 largest arms producing companies in Russia produced in conjunction with the Centre for Analysis of Strategies and Technologies (CAST), Moscow.*

- *Appendix 7B contains a review of government and industry data on the arms industry.*

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## 8. International arms transfers

**Björn Hagelin, Pieter D. Wezeman, Siemon T. Wezeman and Nicholas Chipperfield**

The SIPRI Arms Transfers Project identifies trends in international *transfers* of major conventional weapons using the SIPRI trend indicator. The trend-indicator value represents the volume of international transfers of both major conventional weapons and military technology for the foreign licensed production of these weapons.

The five-year moving average level of global arms transfers fell in the period 1997–2001. This is explained mainly by a reduction in deliveries by the USA, which was the largest supplier in 1997–2001 despite a 65% reduction in its arms deliveries since 1998. Russia was the second largest supplier during this period. A 24% increase in arms transfers from 2000 to 2001 made Russia the largest supplier in 2001.

China was by far the largest arms recipient in 2001 after an increase of 44% from 2000. Imports by India increased by 50%, making it the third largest recipient in 2001. The other major recipients in the period 1997–2001 were Saudi Arabia, Taiwan and Turkey.

Certain countries are prohibited from receiving arms, some because they are involved in armed conflicts. It is impossible for arms suppliers to control whether arms deliveries will stabilize or destabilize a particular bilateral relationship, as illustrated by the case of India and Pakistan. Even relatively minor acquisitions, as illustrated by 3 countries in West Africa, may influence war-fighting and affect the acquisition behaviour of neighbouring countries. The United Nations continues to criticize the efficiency of arms embargoes.

The future supply of advanced major conventional weapons is affected by the uncertainty concerning the organization of transatlantic production and trade. Only the UK has been willing to participate fully and pay the cost of influencing Joint Strike Fighter (JSF) requirements. The cost of the highest form of participation in JSF development is too high for most European countries. If the project is a case study of transatlantic cooperation and the effects on military technology transfers, the transatlantic market will remain unbalanced.

Competition on the global arms market has strengthened new forms of marketing and transfer arrangements. Offset arrangements granted to the buyer may include military technology transfers in addition to the weapon system itself. Some arrangements involve transfers of military equipment from the buyer. In both cases offsets stimulate international military transfers.

- *Appendices 8A, 8B and 8C provide data on the transfers of major conventional weapons.*
- *Appendix 8D explains the sources and methods for the data collection.*
- *Appendix 8E, by Pieter D. Wezeman, contains government and industry data on national arms exports in 1996–2000,*

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## 9. Arms control after the attacks of 11 September 2001

**Ian Anthony**

Events in 2001 led both practitioners and observers to question the usefulness of arms control as an instrument for managing security problems. This was prompted by problems in implementing existing arms control agreements as well as an identified lack of momentum in discussions about new agreements. Two key events brought these problems into clearer focus: the change in the US administration and the 11 September terrorist attacks in the USA.

The new administration subjected a range of arms control processes to an unaccustomed level of critical scrutiny. Although there were discontinuities in arms control policy during the first year of the Bush Administration, the approach also reflected positions that had been evolving in Washington over several years. Two questions are at the root of US concerns about the role of arms control: the first is how to respond when parties violate an agreement to which they are a party, and the second is whether arms control processes and agreements can modify the behaviour of key states.

The policies adopted by the USA stimulated wider discussion of how arms control can contribute to international security. The discussions took on an added dimension after the terrorist attacks against the USA. These attacks reinforced the view in the USA that there is a close correlation between the states that sponsor and carry out terrorist acts and those that actively seek to acquire nuclear, biological and chemical weapons through clandestine programmes; these same states are seeking to acquire ballistic missiles and other means that could be used to deliver one or more of these types of weapons.

While developments in 2001 have been seen as evidence of a loss of confidence by key actors—in particular the USA—in the capacity of arms control to manage security problems, the evidence suggests that they reflect an adaptation of arms control, which is in essence a framework in which structured dialogue can be organized around armaments policy. As part of this process of

adaptation there may be a loss of coherence in the position of particular states. A state may agree measures in the framework of one regional process based on principles that would not be acceptable if applied in a different location or on a global basis. This may be a transitory phenomenon as new norms and principles develop in a changing security environment.

In 2001 this friction was felt in the discussion of the ABM Treaty, of a protocol to verify the BTWC and of a general rule to prohibit military assistance to non-state actors. Each of these discussions dealt with an important but contested underlying issue of principle. In helping to frame the issues and by providing a context for structured discussion, arms control was fulfilling one of its most important functions.

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## 10. Ballistic missile defence and nuclear arms control

**Shannon N. Kile**

In 2001 the international controversy over the US missile defence plans and the future of the 1972 ABM Treaty came to a head. On 13 December President Bush gave formal notice that the USA would withdraw from the ABM Treaty in 6 months. Bush's announcement elicited a restrained response from Russia and China. The decision cleared the way for the USA to develop and deploy a ballistic missile defence system considerably larger in scale and scope than the limited system envisaged by the Clinton Administration.

The USA's withdrawal from the ABM Treaty—regarded as the cornerstone of strategic stability—did not halt progress in nuclear arms control. Russia and the USA continued to reduce their strategic offensive nuclear forces. Against the background of rapidly improving political relations, an agreement in principle was reached on a new strategic arms reduction deal which would bring about deep cuts in what remain essentially cold war-era nuclear force postures. In November 2001 Bush and Russian President Vladimir Putin pledged to reduce by the year 2012 strategic offensive forces to 1700–2200 operationally deployed nuclear warheads (those positioned for rapid use on delivery vehicles) for each country. The deal effectively superseded the 1993 START II Treaty, the entry into force of which had been stalled by the controversies over missile defence and a series of other issues.

As the year ended, there remained considerable disagreement between Russian and US officials over the form and substance of the new arms reductions. Specifically, there was a dispute over whether they would be made as parallel, non-

legally binding initiatives or—as eventually agreed—within the framework of a legally binding document. The US administration initially rejected Russian calls to codify the arms cut in the form of a treaty as being an outdated approach and as inhibiting US flexibility in adapting to unforeseen changes in the security environment.

There was also a disagreement over whether the nuclear warheads scheduled to be removed from delivery vehicles should be verifiably dismantled, as insisted upon by Russia, or should be placed in storage, as advocated by the USA. The acceptance of the US position in the May 2002 Treaty on Strategic Offensive Reductions has been criticized by arms control advocates as leading to less confidence and greater unpredictability in nuclear force postures, since thousands of nuclear warheads can be held in reserve and other 'unaccountable' categories and are available for redeployment. The agreement does not cover non-strategic (or tactical) nuclear warheads, which remain outside any legally binding constraints.

• *Appendix 10A, by Hans M. Kristensen and Joshua Handler, contains tables of the nuclear forces of the USA, Russia, the UK, France, China, India, Pakistan and Israel.* The world's 8 nuclear weapon states maintained a total of about 17 150 nuclear warheads in 2001, of which the USA and Russia together held 93%. Of the smaller nuclear weapon states, China has slightly over 400 warheads, France 348, and Israel and the United Kingdom about 200 each. In the 2 new nuclear weapon states, India has 30–35 and Pakistan as many as 48 nuclear warheads, although it is thought that not all of them are fully deployed.

In addition to deployed warheads, thousands more are held in reserve and not counted in official declarations. The proportion of 'unaccountable warheads' has increased in recent years. It is estimated that, including deployed warheads, spares, those in active and inactive storage and 'pits' (plutonium cores), the total world stockpile consisted of over 36 800 warheads as of 1 January 2002.

During 2001 all the nuclear weapon states had nuclear weapon modernization and maintenance programmes under way and appear committed to retaining nuclear weapons for the foreseeable future. In the USA the Nuclear Posture Review revealed long-term plans for new ballistic missiles, strategic submarines, long-range bombers and nuclear weapons. Russia is modernizing its strategic forces by deploying new intercontinental ballistic missiles and additional strategic bombers and is slowly constructing a new generation of nuclear powered ballistic-missile submarines.

• *Appendix 10B, by Nicholas Zarimpas, discusses tactical nuclear weapons, which remain outside formal arms control agreements and, because of their size, mobility and decentralized command and control arrangements, pose unique challenges and dangers. Recent developments have raised concerns that increased reliance on and new missions for these weapons can be expected. Such concerns are exacerbated by the continued lack of transparency surrounding their numbers and operational status. There is an urgent need to ensure that tactical nuclear weapons are safely and securely stored. Russia and the USA should jointly reaffirm their commitments to the 1991–92 Presidential Nuclear Initiatives, provide updates on progress made in elimination and pursue increased transparency. The perceived utility of such weapons should be reassessed in military and deterrence doctrines, and further weapon modernization should be halted. Russia and the USA should consider ways to construct a cooperative framework that drastically limits the number and locations of tactical nuclear weapons and should unilaterally proceed with additional reductions. In the long term, effectively addressing limitations on tactical nuclear weapons can only be achieved by directly imposing controls on warheads. To this end, it is imperative to strengthen technical arms control research, cooperation and funding.*

• *Appendix 10C, by Oleg Bukharin, examines the changing Russian and US nuclear warhead production complexes. The end of the cold war called for a radical downsizing and restructuring of the US and Russian nuclear warhead production complexes. The USA has already concluded the first phase of its infrastructure reductions. However, the US policies of strengthening its warhead design capability and maintaining a large reserve of stored warheads and pits could have a negative impact on nuclear non-proliferation and future arms reductions. The Russian complex, although smaller since the end of the cold war, remains oversized. The implementation of Russia's downsizing plan has been delayed by lack of funding and difficulties in finding alternative employment for displaced nuclear weapon workers. International cooperation could significantly accelerate the contraction of the Russian complex. Deep nuclear arms cuts in the USA and Russia would necessitate further reductions in their nuclear warhead production infrastructures.*

• *Appendix 10D by George Bunn and Lyudmila Zaitseva, describes the efforts to improve security for nuclear material and facilities. The magnitude of the changes that are needed to protect against terrorist attacks has not yet been widely appreci-*

ated. There is evidence that terrorists and thieves have already threatened or attacked nuclear facilities and tried to purchase or steal nuclear and other radioactive material. The attacks of 11 September suggest that the threat to nuclear facilities is more complex than many states contemplated when they were built. Data published by the International Atomic Energy Agency (IAEA) show that there are at least 284 research reactors in 55 countries and 472 power reactors (operating or under construction) in 31 countries. Even in wealthy industrial countries, non-governmental organizations have long complained that civilian nuclear reactors are not adequately protected against truck bombs, much less against large airliners loaded with fuel.

Since 1995 fewer cases of illicit traffic in significant quantities of weapon-usable nuclear material have been recorded. This suggests that the security of such material in Russia and other former Soviet republics has been improved—probably due to the collaborative efforts with the USA and other countries. However, only about one-third of the Russian weapon-usable material outside of nuclear weapons has been secured as a result of the security upgrades accomplished to date.

Recommendations on strengthening security fall into three categories. First, the major existing Russian–US bilateral programmes to improve the security of Russian weapon-usable nuclear material need to be continued at the present level or higher. Second, multilateral efforts such as those involving the IAEA are at least as important if terrorists are to be prevented not only from acquiring weapon-usable material, but also from sabotaging reactors and causing death, illness and panic through the release of radioactivity. Third, the planned IAEA programme for peer review of state regulatory structures for dealing with other radioactive materials in order to prevent them from being either 'orphaned' or stolen for 'dirty bombs' should be funded by the member states, and a major multilateral effort should be instituted to evaluate international standards for these materials, to consider whether new norms are needed.

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## 11. The military uses of outer space

### John Pike

Space-based systems are becoming an increasingly important component of military power, above all for the United States. The USA is currently investing billions of dollars annually in the development and deployment of a wide range of new precision-guided weapons which are revolutionizing the conduct of warfare. These weapons rely heavily

on an integrated 'system of systems' that combines intelligence, communications, navigation and other military space systems.

At present no country can rival or contest US space dominance or the advantages that this provides to its terrestrial military operations. At the end of 2001, the USA had nearly 110 operational military-related satellites, accounting for well over two-thirds of all military satellites orbiting the earth; Russia had about 40 and the rest of the world about 20.

While it is difficult to overstate the singular advantages of US military space systems relative to those of the rest of the world, it would be a mistake to underestimate the rapidity with which other states are beginning to use space-based systems to enhance their security. Although commercial satellite imagery provides capabilities that are almost trivial compared to those of advanced US systems, these capabilities are revolutionary compared to what was available only a decade ago.

The 'weaponization' of outer space has reappeared on the arms control agenda. There is growing international concern that the USA's quest for 'full-spectrum dominance'—a key dimension of which is the USA's ability to dominate space and to deny its use to other countries—will give rise to a destabilizing arms race in space. This concern has become more urgent in the light of the Bush Administration's plans for an expansive ballistic missile defence system architecture featuring space-based components.

China and Russia have taken the lead in calling for the negotiation of a new multilateral treaty prohibiting the deployment of weapons in space and restricting its use for peaceful purposes. For its part, the USA has shown little interest in agreements that would constrain its military activities in space.

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## **12. Chemical and biological weapon developments and arms control**

**Jean Pascal Zanders, John Hart and Frida Kuhlau**

In 2001 the USA rejected a draft protocol to strengthen the 1972 Biological and Toxin Weapons Convention (BTWC) and, in the final hours of the Fifth Review Conference of the States Parties to the BTWC, proposed to terminate the negotiating mandate of the ad hoc group which had drafted the protocol. The main US objections were that the protocol would not be an effective verification tool, that it would allow 'proliferators' political cover by allowing them to claim to be in compliance with the protocol and that confidential business information belonging to biotechnology firms and information

relating to national biodefence facilities would be unnecessarily compromised. The conference was suspended until November 2002 at which time the future of the ad hoc group and its negotiating mandate should become clear.

The major issue facing the OPCW, the body that implements the 1993 Chemical Weapons Convention, was a budgetary shortfall caused mainly by structural problems in how inspection costs are estimated and reimbursed to the organization. The budgetary problem, however, is a symptom of an underlying lack of agreement on many outstanding implementation issues dating from the organization's Preparatory Commission, which met in 1993–97. How these issues are dealt with at the First Review Conference of the States Parties to the CWC in 2003 may be critical in determining the future effectiveness and viability of the convention.

The international community should consider whether arms control and disarmament regimes continue to have a useful role in the newly 'resecuritized' environment in which military, intelligence and law enforcement activities have been given renewed emphasis. There is a general recognition that, without US participation, the effectiveness and viability of such regimes would be significantly reduced. The specific US concerns regarding each agreement should be addressed through the use of technical and semi-technical analyses with which the political leadership of other countries can engage US political leadership.

Compliance with the BTWC is particularly difficult to verify. This is partly due to the dual-use nature of many of the technologies, materials and equipment that could be used in an offensive BW programme. A key factor in determining whether a programme is offensive or defensive is the need to accurately analyse a party's intent. The protocol was negotiated as a confidence-building and transparency measure, not as a verification mechanism to determine compliance with a high degree of confidence. As a minimum, the door for negotiating a protocol should not be closed and, therefore, parties should not end the ad hoc group's mandate.

Substantive preparatory work for the CWC First Review Conference should begin immediately. The quality of this work and the selection of implementation issues, including those contributing to the budgetary difficulties, will be critical to the success of the review conference. Before the conference, treaty implementation issues should be clearly defined and substantive points agreed upon by the parties to the extent possible. A high-level, technically-informed political commitment will be necessary to prevent open-ended discussions on outstanding implementation issues.

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### 13. Conventional arms control

**Zdzislaw Lachowski**

In 2001 there were a number of positive changes in the multilateral and regional conventional arms control regimes. The general trend was a focus by the international community on regional and domestic sources of conflict and relevant arms control measures, particularly those of an operational character. In Europe the focus was on the implementation of agreed measures and the search for new approaches to the politico–military dialogue.

The 1999 Agreement on Adaptation of the 1990 Treaty on Conventional Armed Forces in Europe is being implemented, but Russia's non-compliance has hindered its entry into force. The second review conference was held in 2001. Russia has made insufficient progress towards complying with its obligations with regard to agreed flank levels, but it has met its commitments regarding troop withdrawals from Moldova. In Georgia the future of one Russian military base and the continued presence of Russian forces remain to be resolved. The Balkan arms control regimes worked well, and the agreement on regional stabilization 'in and around Yugoslavia' was successfully concluded. Regional and bilateral confidence- and security-building measures (CSBMs) continued to work smoothly, and new bilateral CSBMs were introduced in Europe. The Organization for Security and Cooperation in Europe (OSCE) military doctrine seminar evaluated new threats and challenges and identified possible additional directions for the work of the OSCE. After years of deadlock, the 1992 Treaty on Open Skies entered into force on 1 January 2002, after Russia and Belarus ratified it in 2001.

There are 4 characteristic features of the process of controlling weapons and consolidating military security in Europe today. First, the 'hard' (structural) steps of regulating armaments are being replaced by 'soft' (operational) arrangements, such as CSBMs, risk reduction, transparency and other cooperative mechanisms. Second, the new measures are increasingly becoming region-oriented—moving from the pan-European to the regional, subregional, bilateral and even domestic level. Third, there is debate as to whether CSBMs are applicable in times of crisis or conflict. There is no consensus on this issue, and while one view is that new arrangements, mechanisms and institutions are needed, others believe that the necessary instruments exist but that the political will is lacking. Fourth, the autonomous role of CSBMs in regulating relations between states is increasingly constrained by their inclusion in synergistic packages of military and non-military measures for crisis management, conflict prevention and post-conflict

rehabilitation (e.g., the Stability Pact for South Eastern Europe) or in counter-terrorism schemes. Soft measures may be effective in resolving security problems in volatile regions and combating terrorism in Europe. Although the European model of conventional arms control measures is seen as a positive example, conventional arms control remains a low security priority elsewhere in the world.

The number of parties to the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (APM Convention) continued to increase. The regulation of excessively injurious conventional weapons or those that have an indiscriminate effect has gained prominence as concern has grown in the international community about the suffering of civilians and combatants. The 2001 Second Review Conference of the Certain Conventional Weapons (CCW) Convention extended the application of the convention to domestic armed conflicts and expressed support for additional work on other issues of humanitarian concern.

• *Appendix 13A, by Pieter D. Wezeman, discusses the UN conference on the illicit trade in small arms and light weapons, held in July 2001. While the Programme of Action adopted by the conference has no legal status and does not create a regime, it is a clear declaration of the political will of the international community.*

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### 14. Multilateral export controls

**Ian Anthony**

There are 5 multilateral weapon and technology export control regimes: the Australia Group (AG), the Zangger Committee, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG) and the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Technologies. There are now 41 states that participate in one or more of the regimes while 27 states participate in all of them. The European Commission also participates in the Australia Group and the Zangger Committee and is represented in the NSG as an observer.

In 2001 the MTCR completed work on a draft International Code of Conduct against Ballistic Missile Proliferation, which will be discussed with a view to adopting the code in 2002.

Multilateral export control will play a role in counter-terrorist measures. The annual plenary meeting of the MTCR was one of the first opportunities at which officials could discuss the implications of the 11 September attacks on the USA. In early October the AG participating states discussed



the role of export controls in reducing the threat of terrorist attacks with chemical and biological weapons (CBW). The AG underlined that its objectives include preventing the acquisition of CBW by non-state actors. In December 2001 participating states agreed to modify the initial elements of the Wassenaar Arrangement to make clear their commitment to prevent the acquisition of conventional arms and dual-use goods and technologies by terrorist groups and organizations as well as by individual terrorists.

While a significant number of states have developed common rules and habits of cooperation in the framework of the multilateral export control regimes, there has been a growing sense that the momentum established within the regimes in the first half of the 1990s was not maintained. Prior to the 11 September attacks the experience of the regimes was that there remain significant disagreements between participating states over important issues. Disagreements often stem from the fact that licensing decisions are based on national interpretations of regime rules. These are in turn steered by the interests of participating states rather than a common norm or a common perception of the risks posed by particular transfers. Recent Russian sales of nuclear fuel and nuclear reactors to India are considered to be a violation of the Nuclear Suppliers Group guidelines. The NSG continued to discuss how to respond to decisions by Russia related to nuclear supply.

After 11 September certain decisions that were difficult to take in the framework of the regimes may have become possible. Particular attention is being paid to the following questions: the development of procedures for sharing information related to licensing and enforcement; the development of a more harmonized approach to risk assessment and the identification of programmes of concern; the development of common approaches to end-user controls in countries where programmes of concern are located; and how to apply controls to new types of commercial practices in a changing market.

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**Annex A**, by **Christer Berggren**, summarizes the major arms control and disarmament agreements and lists the states parties and signatories as of 1 January 2002.

**Annex B**, by **Christer Berggren**, is a chronology of the major arms control and security-related events of 2001.

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