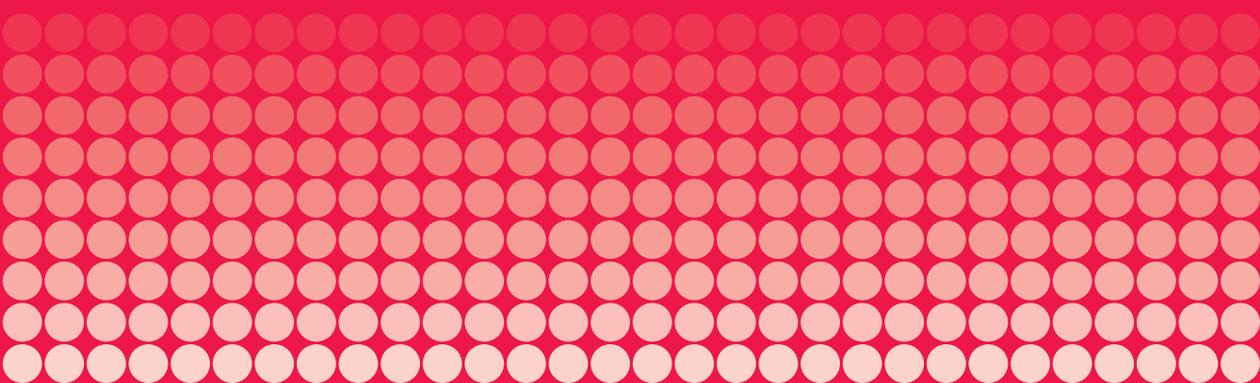


SIPRI YEARBOOK 2010

Armaments,
Disarmament and
International
Security

Summary



STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE

SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

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THE SIPRI YEARBOOK

The SIPRI Yearbook was first published in 1969 and is now in its 41st edition. *SIPRI Yearbook 2010* presents a combination of original data in areas such as world military expenditure, international arms transfers, arms production, nuclear forces, major armed conflicts and multilateral peace operations with state-of-the-art analysis of important aspects of arms control, peace and international security. The Yearbook is written by both SIPRI researchers and invited outside experts.

This booklet summarizes the contents of *SIPRI Yearbook 2010* and gives samples of the data and information in its appendices and annexes.

CONTENTS

Introduction. International security, armaments and disarmament in 2010	2
1. A world without nuclear weapons: fantasy or necessity?	3
Part I. Security and conflicts, 2009	
2. Armed conflict, crime and criminal violence	4
3. Civilian roles in peace operations	6
4. Euro-Atlantic security and institutions: rebalancing in the midst of global change	8
Part II. Military spending and armaments, 2009	
5. Military expenditure	10
6. Arms production	12
7. International arms transfers	14
8. World nuclear forces	16
Part III. Non-proliferation, arms control and disarmament, 2009	
9. Nuclear arms control and non-proliferation	17
10. Reducing security threats from chemical and biological materials	18
11. Conventional arms control	19
12. Controls on security-related international transfers	20
Annexes	22



INTRODUCTION. INTERNATIONAL SECURITY, ARMAMENTS AND DISARMAMENT IN 2010

BATES GILL

As the analyses in *SIPRI Yearbook 2010* suggest, 2009 began hopefully for many with the advent of a new administration in the United States. In addition, some positive momentum was generated around the goals of arms control, disarmament and non-proliferation, resulting in important declarations and concrete actions in support of those goals. However, 2009 also showed just how difficult it is to make continued progress in meeting the many challenges that the world faces today.

The financial crisis and economic recession that affected most of the globe appeared to have little effect on levels of military expenditure, arms production or arms transfers. However, the crisis probably did undermine the willingness and ability of major governments and multilateral institutions to invest other, non-military resources to address the challenges and instabilities that threaten societies and individuals around the world.

The contributions to *SIPRI Yearbook 2010* describe a world at a critical turning point. On questions of international security, the world faces continuing changes in the nature of armed conflict and instability towards greater diffusion of the means and actors involved in violence. Civilian contributions to peace operations are needed, but the international community continues to struggle with

how to provide them. Meanwhile, the Euro-Atlantic security partnership also struggles to define new roles and relationships consistent with the threat environment for the coming decades. Many of these challenges are amply demonstrated in the ongoing difficulties in stabilizing Afghanistan.

Continued upward growth in military spending, arms production and arms transfers will depend on how the global financial situation changes, as well as on developments in the conflicts in Afghanistan and Iraq. The year 2010 will be important for disarmament and non-proliferation as well, with the world watching for progress in bilateral disarmament between Russia and the USA. The world will also look for progress on disarmament and tightened controls against would-be proliferators in the context of a successful Non-Proliferation Treaty Review Conference. The Conference on Disarmament in Geneva will need to begin substantive negotiations as called for in the draft programme of work adopted in 2009, such as on a fissile material cut-off treaty. New proliferation challenges in the area of dual-use technologies also require the international community to develop more effective mechanisms to prevent their misuse.



1. A WORLD WITHOUT NUCLEAR WEAPONS: FANTASY OR NECESSITY?

JAMES E. GOODBY

At Reykjavik, in October 1986, Mikhail Gorbachev and Ronald Reagan endorsed the idea of eliminating all nuclear weapons. The idea lay fallow until the publication of two articles by George Shultz, Henry Kissinger, William Perry and Sam Nunn in January 2007 and January 2008. They argued that the world was at a dangerous tipping point and that the response to the growing nuclear threat required a sustained step-by-step programme and a serious commitment to a world without nuclear weapons.

Russia and the United States have now agreed to reduce their nuclear arsenals by concluding a New START Treaty. This could open the door to deeper Russian–US reductions. Many analyses have investigated this, including models ranging from 1000 warheads to zero. Verification is a major issue, but less formidable than many think. Russia and the USA have had years of experience in verifying numbers of operationally deployed nuclear warheads. In fact, the task of verification may become easier as progress towards zero is achieved.

Unless there is a broadly shared international commitment to the goal of a nuclear-free world, however, the momentum necessary to sustain further Russian–US negotiations will be lost. An array of actions is available to nuclear-armed states. Many of these

could be pursued without delay, including an agreement to cease the production of fissile material for weapons.

Nuclear deterrence will not disappear even if nuclear weapons are eliminated. It will exist in the form of functioning nuclear laboratories and some capacity to produce nuclear weapons, if needed, over a period of time. Agreements to regulate this will be necessary. A world free of nuclear weapons means that the use of nuclear weapons would not be easily available even to those who have the proven capacity to build them.

Politically, a higher degree of cooperation among the permanent members of the United Nations Security Council would surely be necessary. Although governance issues tend to focus on the Security Council, much of the process of eliminating nuclear weapons will be based on regional arrangements, particularly in the Middle East, South Asia and North East Asia.

The obstacles to ending the nuclear threat are more political than technical or military. No law of nature stands in the way.



2. ARMED CONFLICT, CRIME AND CRIMINAL VIOLENCE

EKATERINA STEPANOVA

MAJOR ARMED CONFLICTS, 2009

In 2009, 17 major armed conflicts were active in 16 locations around the world.

	Conflict location
<i>Africa</i>	Rwanda* ‡
	Somalia↑
	Sudan↓
	Uganda* ‡
<i>Americas</i>	Colombia↑
	Peru↓
	USA* ↑
<i>Asia</i>	Afghanistan↑
	India (Kashmir)↓
	Myanmar (Karen State)
	Pakistan↑
	Philippines
	Philippines (Mindanao)
<i>Middle East</i>	Sri Lanka ('Tamil Eelam')
	Iraq↓
	Israel (Palestinian territories)
	Turkey (Kurdistan)*

Where a conflict is over territory, the disputed territory appears in parentheses after the country name. All other conflicts are over government.

* Fighting in these conflicts also took place in other locations.

↑ Increase in battle-related deaths from 2008.

↓ Decrease in battle-related deaths from 2008.

‡ Conflict inactive or not defined as 'major' in 2008.

Only 6 of the major armed conflicts in 2009 were over territory, with 11 being fought over government. Indeed, conflicts over government outnumbered those over territory in 9 of the 10 years 2000–2009.

For the sixth year running, no major interstate conflict was active in 2009.

Criminal groups and profit-driven motives account for a substantial proportion of violence in many areas of armed conflict. Growing reliance by armed non-state actors on shadow economic activity contributes to the erosion of boundaries between political and criminal violence. Traditional distinctions between politico-military groups contesting control over territory or government and criminal actors prioritizing illicit profit become less relevant in conflict areas, especially in dysfunctional or failed states. In a complex web of fragmented violence, militias and other local powerbrokers fight for control of power and resources and exploit opportunities offered by insecurity and war economy.

On a global level, criminal violence is far more widespread than organized political violence. Decline in numbers of armed conflicts since the early 1990s has not been matched by a global decline in homicide rates. While overall global crime levels increase slowly, 2009 saw a notable rise in some types of transnational crime, including in armed conflict.

As demonstrated by the rising piracy based in Somalia, high-profile criminal business in some conflict settings may have even broader transnational implications and resonance than the conflict itself. The case of Afghanistan shows the multifunctional role that the

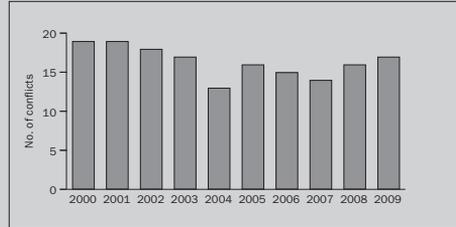


deeply embedded opium economy plays in conflict and post-conflict environments: not only financing armed opposition groups, but yielding profits to most major local politico-military actors, including those loyal to the government, alongside criminal trafficking networks. In such conflict areas, organized crime and the shadow economy can only be effectively addressed once the state has already regained some basic elements of functionality, such as the ability to provide minimal law and order. This explains why the fight against organized, especially transnational, crime should not be divorced from conflict resolution efforts. Finding political solutions to conflicts should take priority as the main precondition for rebuilding or extending functional state capacity that is essential for effectively tackling organized crime.

The case of drug trafficking-related violence in Mexico shows that, even in the absence of conflict over government or territory, large-scale campaigns of criminal violence can pose as great a threat to human security as armed conflict. Such campaigns of criminal violence, often accompanied by intense anti-criminal violence by the state, deserve a category of their own in crime and conflict analysis. More generally, the study of organized crime and criminal violence should be more actively integrated into the broader analysis of collective organized armed violence in and beyond conflict areas.

Over the decade 2000–2009, only 3 of the total of 30 major armed conflicts have been interstate.

Major armed conflicts, 2000–2009



THE GLOBAL PEACE INDEX 2010

The Global Peace Index (GPI) seeks to determine what cultural attributes and institutions are associated with states of peace. It ranks 149 countries by their relative states of peace using 23 indicators.

Rank	Country	Score
1	New Zealand	1.188
2	Iceland	1.212
3	Japan	1.247
4	Austria	1.290
5	Norway	1.322
145	Pakistan	3.050
146	Sudan	3.125
147	Afghanistan	3.252
148	Somalia	3.390
149	Iraq	3.406

Small, stable and democratic countries are consistently ranked highly. Island states also generally fare well.

These facts and data are taken from appendix 2A, 'Patterns of major armed conflicts, 2000–2009', by Lotta Harbom and Peter Wallensteen, Uppsala Conflict Data Program (UCDP), based on the UCDP Database, <<http://www.ucdp.uu.se/database/>>, and appendix 2B, 'The Global Peace Index 2010', by Tim Macintyre and Camilla Schippa, Institute for Economics and Peace.



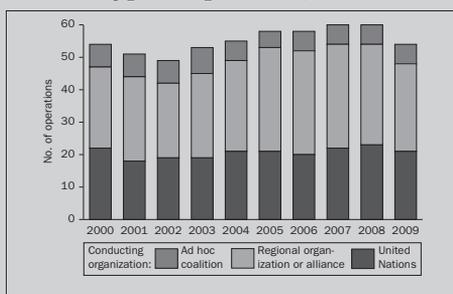
3. CIVILIAN ROLES IN PEACE OPERATIONS

SHARON WIHARTA AND STEPHANIE BLAIR

PEACE OPERATIONS, 2009

In 2009, 54 multilateral peace operations were conducted in 34 different locations. The annual total of active peace operations fell in 2009, having risen steadily from 2002 to 2008.

Number of peace operations, 2000–2009



Peace operations, by region, 2009

Region	No. of operations	Total personnel deployed
Africa	16	85 562
Americas	2	9 571
Asia	9	88 270
Europe	17	19 750
Middle East	10	16 125
Total	54	219 278

The number of personnel deployed to peace operations increased by 16 per cent over 2008 to reach 219 278 by the end of 2009, 89 per cent of whom were military personnel and 11 per cent civilian staff. With no new operations in 2009, the increase in the number of personnel

Civilian personnel play an ever more central role in multidimensional and integrated peacekeeping and peacebuilding operations, which often integrate political, humanitarian, development and military activities to assist the host country's transition from conflict to sustainable peace. As mission mandates have grown increasingly complex, the requirement for qualified civilian expertise has grown apace. The number of civilian tasks mandated in United Nations Security Council resolutions for UN peace operations and the number of civilian missions undertaken by regional organizations have increased dramatically in the past five years. These increases are coupled with a near doubling of the number of civilians assigned to global multilateral peace operations: they currently exceed 6500.

On the 10th anniversary of the seminal Brahimi report, which highlighted for the first time the centrality of the civilian contribution to the effectiveness of UN peace operations and called for a strengthened UN capacity in this area, 2009 was marked by sustained attention to the civilian dimension. Although that dimension has been strengthened by a range of recent institutional innovations (both at the multilateral and national level) to overcome the deployment challenges

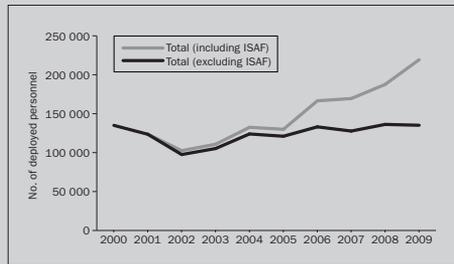


that have plagued past missions, these nascent structures are still neither appropriately configured nor provided with adequate resources. More critically, there is a lack of a common understanding of the civilian role—who are the civilian experts and what is their role? In addition, these institutional fixes may not translate into concrete or workable solutions in the field. The UN Mission in Sudan (UNMIS) illustrates the operational challenges in filling and sustaining the civilian component of peace operations and how the lack of conceptual clarity can affect the mission’s overall efficacy.

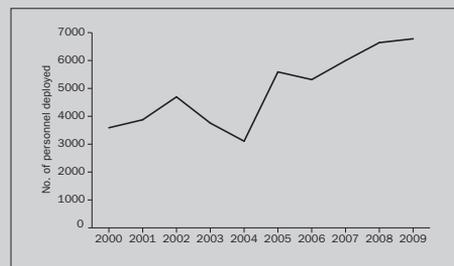
Enhancing the civilian dimension is thus a broader agenda and goes beyond expeditiously deploying the right experts in the numbers necessary. It requires revisiting the broader architecture and examining the linkages between interrelated factors, such as financing peace operations and recruitment. It also necessitates critical analysis of the purpose and objectives of each civilian function in order to avoid duplication of tasks within the mission.

deployed was due to troop reinforcement for existing operations, most significantly for the International Security Assistance Force (ISAF) in Afghanistan. ISAF was nearly four times larger than the next largest operation, and the number of ISAF troops (84 146) exceeded the total number deployed to the 12 UN peace operations with troops (83 089).

Personnel deployed to peace operations, 2000–2009



Civilians deployed to peace operations, 2000–2009



These facts and data are taken from chapter 3 and appendix 3A, ‘Multilateral peace operations, 2009’, by Kirsten Soder and Krister Karlsson, and are based on the SIPRI Multilateral Peace Operations Database, <<http://www.sipri.org/databases/pko/>>.



4. EURO-ATLANTIC SECURITY AND INSTITUTIONS: REBALANCING IN THE MIDST OF GLOBAL CHANGE

ALYSON J. K. BAILES AND ANDREW COTTEY

In 2009 the chief institutions of the Euro-Atlantic space—the North Atlantic Treaty Organization (NATO), the European Union (EU) and the Organization for Security and Co-operation in Europe (OSCE)—celebrated several anniversaries but had no cause for euphoria. In face of setbacks in Afghanistan and Iraq, the 2008 Georgia conflict, and a global economic crisis, each institution had to rethink its strategies and even its *raison d'être*.

NATO in its 60th anniversary year faced continued obstacles, both military and political, to success in Afghanistan, with more voices questioning the realism of its aims. NATO–Russia relations improved as NATO echoed President Barack Obama’s attempt at a ‘re-set’ and resiled from early eastward enlargement. Obama’s revised missile defence plans were also less provocative to Russia, yet the overall relationship remained fragile. NATO began a debate on revising its Strategic Concept, which will raise difficult and divisive issues about NATO’s underlying guarantees, its nuclear doctrines and its newer security tasks.

The EU proceeded cautiously with enlargement plans in the Western Balkans and sought to reinvigorate its Neighbourhood Policy towards the former Soviet Union. The year 2009 marked the 10th anniversary of the Common Security and Defence Policy

(CSDP), but little progress could be noted on harmonizing member states’ defence spending or force structures. CSDP missions have filled useful niches but remain a minor aspect of the EU’s overall security impact. The Lisbon Treaty entered into force in December, creating new political leadership posts in Brussels albeit first filled by little-known candidates. It creates new openings for EU ‘solidarity’ operations to help members in non-warlike crises, but national choices will determine how far these are explored.

Russia published in November 2009 a full draft of the European security treaty it proposed in 2008. The treaty is seen by many in the West as aiming to freeze strategic frontiers while downplaying the human rights-related and reforming principles of the OSCE. Nevertheless, interest was shown from many sides in exploring options for a more inclusive pan-European approach to security, and this discussion is being pursued through a ‘Corfu process’ of informal dialogue rooted in the OSCE.

The EU, NATO and the OSCE must learn lessons but also find new dynamism to justify their continued existence. Many current security challenges require global cooperation and the West must increasingly focus on how to work with new ‘rising’ powers.



SIPRI DATABASES

SIPRI's databases, which provide the foundation for much of SIPRI's research and analysis and are an unrivalled source of basic data on armaments, disarmament and international security, are available at <http://www.sipri.org/databases/>.

Facts on International Relations and Security Trends (FIRST)

Provides a federated system of databases on topics related to international relations and security, accessible through a single integrated user interface.

SIPRI Multilateral Peace Operations Database

Offers information on all UN and non-UN peace operations conducted since 2000, including location, dates of deployment and operation, mandate, participating countries, number of personnel, costs and fatalities.

SIPRI Military Expenditure Database

Gives consistent time series on the military spending of 172 countries since 1988, allowing comparison of countries' military spending: in local currency, at current prices; in US dollars, at constant prices and exchange rates; and as a share of GDP.

SIPRI Arms Transfers Database

Shows all international transfers in seven categories of major conventional arms since 1950, the most comprehensive publicly available source of information on international arms transfers.

SIPRI Arms Embargoes Database

Provides information on all multilateral arms embargoes implemented since 1988.

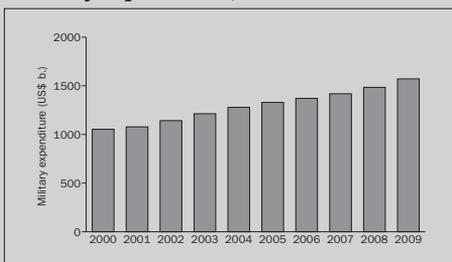


5. MILITARY EXPENDITURE

SAM PERLO-FREEMAN, OLAWALE ISMAIL AND CARINA SOLMIRANO

MILITARY EXPENDITURE, 2009

Military expenditure, 2000–2009



To allow comparison over time, the figures in the bar chart are in US dollars at constant (2008) prices.

Military expenditure, by region, 2009

Region	Spending (\$ b.)
Africa	27.4
North Africa	10.0
Sub-Saharan Africa	17.4
Americas	738
Central America and the Caribbean	5.6
North America	680
South America	51.8
Asia and Oceania	276
Central Asia	..
East Asia	210
Oceania	20.4
South Asia	44.0
Europe	386
Eastern	60.0
Western and Central	326
Middle East	103
World total	1 531

The spending figures are in current (2009) US dollars.

Total global military expenditure in 2009 is estimated to have been \$1531 billion. This represents an increase of 6 per cent in real terms compared to 2008, and of 49 per cent since 2000. Military expenditure comprised approximately 2.7 per cent of global gross domestic product (GDP) in 2009. All regions and subregions saw an increase in 2009, except the Middle East.

The global economic crisis had little impact on world military spending in 2009, as most major economies boosted public spending to counteract the recession, postponing deficit reduction. While military expenditure was not a major feature of economic stimulus packages, it was not generally cut either. Nine of the top 10 spenders increased military spending in 2009. However, some smaller economies less able to sustain large deficits did cut spending.

Natural resource revenues appear to be a significant driver of military expenditure in many developing countries, with rapidly rising revenues from oil and other commodities in recent years, due to increases in both price and production. This may lead to increased military spending as a means of protecting resources from internal or external threats, while resource revenues are often a source of funding for arms purchases. The drop in



commodity prices in 2009 has slowed this trend in some cases.

The conflict in Afghanistan is proving increasingly costly to many of the countries with a substantial troop presence there and has also generated debates as to the focus of military spending, between equipment of use in current conflicts and major weapon platforms designed for power projection. In the United Kingdom a combination of the Afghanistan conflict, high deficits and an overambitious equipment programme have sharpened this debate.

US military spending is continuing to rise under the Obama Administration, partly due to the escalating conflict in Afghanistan. Spending is budgeted to rise further in 2010, and military spending is exempted from a general freeze on discretionary spending. The 2010 budget saw some refocusing of priorities, with cancellation of some major weapon systems and increased focus on information and communications technology, but no major strategic shift.

Military spending patterns in Afghanistan and Iraq both reflect the demands of rebuilding a country's armed forces from scratch following external invasion and with continued requirement for substantial external funding.

The 10 largest military spenders in 2009 accounted for 75 per cent of world military spending, with the USA alone accounting for 43 per cent. While the identities of the top spenders have not changed in recent years, their relative rankings have, with European countries falling down the ranking.

The top 10 military spenders, 2009

Rank	Country	Spending (\$ b.)	World share (%)
1	USA	661	43
2	China	[100]	[6.6]
3	France	63.9	4.2
4	UK	58.3	3.8
5	Russia	[53.3]	[3.5]
6	Japan	51.0	3.3
7	Germany	45.6	3.0
8	Saudi Arabia	41.3	2.7
9	India	36.3	2.4
10	Italy	35.8	2.3
World total		1 531	

[] = SIPRI estimate. The spending figures are in current (2009) US dollars.

SIPRI military expenditure figures are based on information available in open sources, primarily supplied by governments. They represent a low estimate; the true level of military spending is certainly higher, due to omitted countries and items of spending. Nonetheless, SIPRI estimates capture the great majority of global military spending and accurately represent overall trends.

These facts and data are taken from appendix 5A, 'Military expenditure data, 2000–2009', by Sam Perlo-Freeman, Olawale Ismail, Noel Kelly and Carina Solmirano, and are based on the SIPRI Military Expenditure Database, <<http://www.sipri.org/databases/milex>>.



6. ARMS PRODUCTION

SUSAN T. JACKSON

THE SIPRI TOP 100 FOR 2008

The SIPRI Top 100 list ranks the largest arms-producing companies in the world (outside China) according to their arms sales.

The 10 largest arms-producing companies, 2008

	Company (country)	Arms sales (\$ m.)	Profit (\$ m.)
1	BAE Systems (UK)	32 420	3 250
2	Lockheed Martin	29 880	3 217
3	Boeing	29 200	2 672
4	Northrop Grumman	26 090	-1 262
5	General Dynamics	22 780	2 459
6	Raytheon	21 030	1 672
7	EADS (trans-Europe)	17 900	2 302
8	Finmeccanica (Italy)	13 240	996
9	L-3 Communications	12 160	949
10	Thales (France)	10 760	952

Companies are US-based, unless indicated otherwise. The profit figures are from all company activities, including non-military sales.

Almaz Antei tripled its arms sales since 2003 to reach \$4.3 billion in 2008, entering the top 20—a first for a Russian company. No Australian-owned company appeared in the SIPRI Top 100 for 2008 following BAE Systems' acquisition of Tenix Defence Systems in early 2008. Hewlett-Packard entered the Top 100 following its acquisition of EDS, a former Top 100 arms-producing company.

In 2008 the world's 100 largest arms-producing companies (outside China) maintained the upward trend in their arms sales, which increased by \$39 billion to reach \$385 billion. While companies headquartered in the United States again dominated the SIPRI Top 100, for the first time a non-US headquartered company registered the highest level of arms sales—BAE Systems of the United Kingdom.

Thirteen companies increased their arms sales by more than \$1 billion in 2008, and 23 increased their arms sales by more than 30 per cent. In contrast, only six companies in the SIPRI Top 100 had decreased arms sales in 2008. Two of these companies—SAFRAN of France and Boeing of the USA—experienced decreases of more than \$1 billion.

The conflicts in Afghanistan and Iraq continued to heavily influence sales of military equipment such as armoured vehicles, unmanned aerial vehicles (UAVs) and helicopters. At the same time, sales registered by military services companies continued to grow, as did the arms sales of Russian companies to both domestic and foreign customers.

Following peak levels earlier in the decade, the number of large transnational mergers and acquisitions fell again in 2009. The acquisition of US companies by British companies



slowed. There was, however, more consolidation in the Israeli, Russian and US industries as well as a continued pattern of arms-producing companies diversifying into the security industry.

Even though more than a year has passed since the onset of the global financial crisis and economic recession, an initial assessment shows that many arms-producing companies continued to increase arms sales in 2009. Sustained high levels of military expenditure (especially in the USA—the largest military spender and arms procurer) and the ongoing conflicts in Afghanistan and Iraq partly explain the continuing increase. However, the monopsonistic structure of the arms industry, the consequent strong relationship between arms producers and governments and the industry’s perceived importance to national security also shield it from the immediate impact of severe economic downturns. This status is reflected in the continued high levels of arms sales, high profits, large backlogs and strong cash flows generated by arms production.

National or regional shares of arms sales for the SIPRI Top 100 for 2008

Region/ country	No. of companies	Arms sales (\$ b.)
USA	44	229.9
Western Europe	34	122.1
Russia	7	10.8
Japan	4	7.0
Israel	4	6.9
India	3	4.2
South Korea	2	1.8
Singapore	1	1.3
Canada	1	0.7
Total	100	384.7

Figures refer to the arms sales of Top 100 companies headquartered in each country or region, including those of their foreign subsidiaries, not the sales of arms actually produced in that country or region.

ARMS INDUSTRY ACQUISITIONS, 2009

There were no acquisitions of arms-producing companies worth over \$1 billion in 2009, down from four in 2008 and seven in 2007.

The largest acquisitions in the OECD arms industry, 2009

Buyer company	Acquired company	Deal value (\$ m.)
Precision Castparts Corp.	Carlton Forge Works	850
General Dynamics	Axsys Tech.	643
BAE Systems	BVT Surface Fleet	558
Goodrich Corp.	Atlantic Inertial Systems	375
Woodward Governor	HR Textron	365

These facts and data are taken from chapter 6, appendix 6A, ‘The SIPRI Top 100 arms producing companies, 2008’, by Susan T. Jackson and the SIPRI Arms Industry Network, and appendix 6B, ‘Major arms industry acquisitions, 2009’, by Susan T. Jackson.

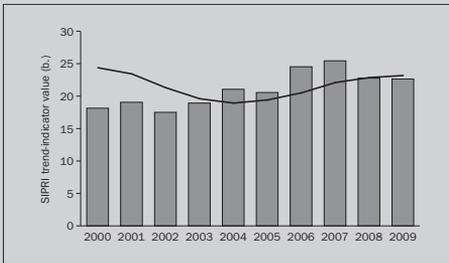


7. INTERNATIONAL ARMS TRANSFERS

PAUL HOLTOM, MARK BROMLEY, PIETER D. WEZEMAN AND
SIEMON T. WEZEMAN

THE SUPPLIERS AND RECIPIENTS OF MAJOR CONVENTIONAL WEAPONS

The trend in transfers of major conventional weapons, 2000–2009



Bar graph: annual totals; line graph: five-year moving average (plotted at the last year of each five-year period).

The five largest suppliers of major conventional weapons, 2005–2009

Supplier	Share of global arms exports (%)	Main recipients (share of supplier's transfers)
USA	30	South Korea (14%) Israel (11%) UAE (11%)
Russia	23	China (35%) India (24%) Algeria (11%)
Germany	11	Turkey (14%) Greece (13%) South Africa (12%)
France	8	UAE (25%) Singapore (21%) Greece (12%)
UK	4	USA (23%) India (15%) Saudi Arabia (10%)

The volume of international transfers of major conventional weapons continues to increase. The average annual level for the period 2005–2009 was 22 per cent higher than the annual average for 2000–2004.

The United States and Russia remained by far the largest exporters, followed by Germany, France and the United Kingdom. Together these five countries accounted for 76 per cent of the volume of exports for 2005–2009. Although the dominant position of the first-tier suppliers, the USA and Russia, is unlikely to be challenged in the near future, the second-tier of arms suppliers is growing in number.

The major recipient region for the period 2005–2009 was Asia and Oceania, followed by Europe and the Middle East. The major recipient countries for 2005–2009 were China, India, South Korea, the United Arab Emirates (UAE) and Greece. Asian and Middle Eastern countries are expected to remain among the world's largest importers.

Israel, Singapore and Algeria were not among the 10 largest arms importers for the period 2000–2004 but ranked sixth, seventh and ninth for 2005–2009. Recent arms acquisitions by certain states in Latin America, the Middle East, North Africa and South East Asia suggest that a pattern of reactive arms acquisitions is emerging,

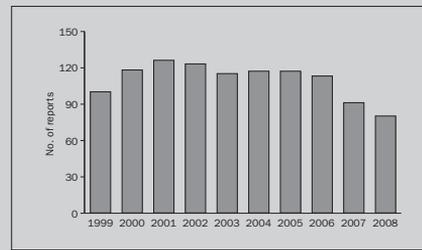


that could develop into regional arms races.

In recent years concerns have been expressed that regional rivals Algeria and Morocco are engaged in an 'arms race'. SIPRI data shows that the overwhelming majority of arms transfers to North Africa for the period 2005–2009 were destined for Algeria. However, in recent years Morocco has placed significant orders for combat aircraft, missiles and naval vessels. Although it is unlikely that these acquisitions in themselves will lead to conflict, they do not help to improve relations between the two countries. Furthermore, their acquisitions are likely to influence Libyan plans.

Iraq continues to rely on the USA for the provision of equipment to rebuild its armed forces, but has also received arms from Russia, Ukraine, Hungary, Italy, Poland and Turkey. Its ambitious procurement plans have been hit by the economic crisis and declining oil prices. Nevertheless, the timetable for the withdrawal of US forces from Iraq lends a sense of urgency to international efforts to provide Iraq with the arms and military equipment it seeks to meet its perceived internal and external security needs.

Reports to UNROCA, 1999–2008



TRANSPARENCY IN ARMS TRANSFERS

Official and publicly accessible data on arms transfers is important for assessing states' arms export and arms procurement policies. However, publishing data on arms sales and acquisitions is a sensitive issue for nearly all states.

The United Nations Register of Conventional Arms (UNROCA) is the key international mechanism of official transparency on arms transfers. The recent downward trend in states' participation in UNROCA continued during 2009. As of 31 December 2009, only 79 states had submitted reports on their arms transfers during 2008.

Since the early 1990s an increasing number of governments have published national reports on arms exports. As of January 2010, 32 states had published at least one national report on arms exports since 1990, and 28 have done so since 2006.

These facts and data are taken from chapter 7, appendix 7A, 'The suppliers and recipients of major conventional weapons', by the SIPRI Arms Transfers Programme, and appendix 7C, 'Transparency in arms transfers', by Mark Bromley and Paul Holtom, and are based in part on the SIPRI Arms Transfers Database, <<http://www.sipri.org/databases/armstransfers/>>.



8. WORLD NUCLEAR FORCES

SHANNON N. KILE, VITALY FEDCHENKO, BHARATH GOPALASWAMY AND
HANS M. KRISTENSEN

WORLD NUCLEAR FORCES, 2010

Country	Deployed warheads	Other warheads	Total
USA	2 468	7 100	9 600
Russia	4 630	7 300	12 000
UK	160	65	225
France	300	–	300
China	..	200	240
India	..	60–80	60–80
Pakistan	..	70–90	70–90
Israel	..	60	80
Total	7 560	14 900	22 600

All estimates are approximate and are as of January 2010.

GLOBAL STOCKS OF FISSILE MATERIALS, 2009

As of 2009, global stocks of highly enriched uranium totalled approximately 1370 tonnes (not including 227 tonnes to be blended down). Global military stocks of separated plutonium totalled approximately 255 tonnes and civilian stocks totalled 248 tonnes.

NUCLEAR EXPLOSIONS, 1945–2009

In May 2009 North Korea conducted what is widely believed to be its second nuclear test explosion. This brought the total number of nuclear explosions recorded since 1945 to 2054.

These facts and data are taken from chapter 8, appendix 8A, 'Global stocks of fissile materials, 2009', by Alexander Glaser and Zia Mian, International Panel on Fissile Materials, and appendix 8B, 'Nuclear explosions, 1945–2009', by Vitaly Fedchenko.

In January 2010 eight states—the United States, the Russian Federation, the United Kingdom, France, China, India, Pakistan and Israel—possessed more than 7500 operational nuclear weapons. If all nuclear warheads are counted, including operational warheads, spares, those in both active and inactive storage, and intact warheads scheduled for dismantlement, these states together possessed a total of more than 22 000 warheads.

The five legally recognized nuclear weapon states, as defined by the 1968 Non-Proliferation Treaty (NPT)—China, France, Russia, the United States and the United Kingdom—are either deploying new nuclear weapon systems or have announced their intention to do so; none appears to be prepared to give up their nuclear arsenals in the foreseeable future.

India and Pakistan, which along with Israel are de facto nuclear weapon states outside the NPT, continue to develop new missile systems that are capable of delivering nuclear weapons and are also expanding their capacities to produce fissile material. Israel appears to be waiting to assess how the situation with Iran's nuclear programme develops. North Korea is believed to have produced enough plutonium to build a small number of nuclear warheads, but it is unknown whether it has operational weapons.



9. NUCLEAR ARMS CONTROL AND NON-PROLIFERATION

SHANNON N. KILE

The year 2009 saw new momentum behind global efforts to promote nuclear disarmament and non-proliferation. Russia and the USA opened formal negotiations on a new strategic arms reduction treaty to succeed the 1991 Treaty on the Reduction and Limitation of Strategic Offensive Arms (START Treaty) and the 2002 Strategic Offensive Reduction Treaty (SORT). The main points of contention centred on simplifying the START Treaty's verification provisions and adapting its rules for counting deployed nuclear warheads. The two sides failed to conclude the negotiations prior to START's expiration in December 2009 but did so in the spring of 2010. The resulting New START Treaty, which mandated modest additional reductions in Russian and US deployed strategic nuclear warheads and associated delivery vehicles, was signed in Prague on 8 April 2010.

Other positive developments in 2009 included the entry into force of two new nuclear weapon-free zone treaties, one covering Central Asia and the other Africa. In September the UN Security Council unanimously adopted a politically binding resolution that codified a broad consensus on a range of actions to promote nuclear disarmament and non-proliferation and to address the threat of nuclear terrorism. An apparent breakthrough

was also achieved at the Conference on Disarmament in Geneva, when the 65 member states agreed to open negotiations on a fissile material cut-off treaty (FMCT) after a 12-year impasse; however, the negotiations were subsequently blocked by procedural reservations from Pakistan.

In 2009 little progress was made towards resolving the long-running controversies over the nuclear programmes of Iran and North Korea, which have been the focus of international concerns about the spread of nuclear weapons. These concerns were heightened by North Korea's decisions to conduct a second nuclear test explosion in May 2009 and to resume production of plutonium for nuclear weapons. The controversy over the scope and nature of Iran's nuclear activities intensified during the year with the revelation that Iran was building a previously undeclared uranium enrichment plant. In November the Board of Governors of the International Atomic Energy Agency (IAEA) criticized Iran for not fulfilling its safeguards obligations and for not complying with previous demands by the Board and the UN Security Council that it suspend all uranium enrichment-related activities.



10. REDUCING SECURITY THREATS FROM CHEMICAL AND BIOLOGICAL MATERIALS

JOHN HART AND PETER CLEVESTIG

At the international, national and regional levels in 2009 states continued to develop strategies to prevent and remediate the effects of the possible misuse of chemical and biological materials. With some success, the parties to the 1993 Chemical Weapons Convention (CWC) and the 1972 Biological and Toxin Weapons Convention (BTWC) maintained their focus on capacity building, achieving universality of membership and effective implementation of national obligations, including those related to the security of dual-purpose materials.

President Barack Obama's US Administration presented its much anticipated policy on the BTWC in December 2009, while the European Union (EU) worked to develop a communication based on the recommendations of an EU chemical, biological, radiological and nuclear (CBRN) working group.

In 2009 India became the third party to the CWC to complete the destruction of its declared chemical weapon stockpile. Iraq joined the convention and declared that it possesses chemical weapons (holdovers from the previous regime and under UN seal). The parties to the BTWC met in 2009 to consider the enhancement of international cooperation, assistance and exchange in the life sciences and related technology for peaceful purposes.

Security analysts and government officials studied the implications of disease outbreaks in the context of preparedness for and response to biological warfare. In 2009 states continued to develop mechanisms to license and oversee scientific research, the chemical industry and biotechnology—including for companies that offer gene synthesis services—because of the security implications of these activities.

An emphasis on control and oversight of chemical and biological materials implies reduced focus on traditional state military programmes. In addition, numerous uncertainties are associated with international trade generally. The negative effects of the signals that have been given to non-state actors by various threat assessment statements about the desirability of using chemical and biological weapons (CBW), and the anxiety that such use would provoke, could be mitigated by better understanding of the variability of the effects of CBRN weapons. Operational challenges associated with the volume and type of trade in dual-purpose material technology and intangible technology transfers can also inform threat assessments. This, in turn, would help to promote a balanced understanding of the role of CBW threats in international peace and security.



11. CONVENTIONAL ARMS CONTROL

ZDZISLAW LACHOWSKI

The prospects for advances in European arms control appeared better in 2009 than in preceding years, even though the 1990 Treaty on Conventional Armed Forces in Europe (CFE Treaty) regime has remained in limbo since December 2007 when Russia unilaterally suspended its participation. As part of the Corfu process, a wide-ranging dialogue on European security, the significance of arms control for European security was reacknowledged by all Organization for Security and Co-operation in Europe (OSCE) participating states. At the 2009 Athens OSCE Ministerial Council these states reaffirmed the desire to overcome the long-standing deadlock in the main regimes—the CFE Treaty and the Vienna Document on confidence- and security-building measures (CSBMs). In relation to broader security, Russia insists on convening a Euro-Atlantic summit with the aim of crowning it with a European security treaty. The Western states demonstrated caution and restraint, making their consent contingent on the adequacy of the substance and scope of an eventual agreement.

The United States has embarked on a thorough review of the US arms control agenda, and in February 2010 a Special Envoy for Conventional Armed Forces in Europe was appointed to start consultations with the North Atlantic

Treaty Organization (NATO), European partners and Russia on the future of the CFE regime.

Further steps were taken to make the Western Balkans subregional arms control framework more self-reliant. European security-related measures that are associated with arms control aim to respond to traditional as well as new threats and to risks and challenges. However, progress as regards the Vienna Document CSBMs remains at a standstill. The OSCE participants strive to counter cross-dimensional threats that are increasingly of a local and subregional nature. With the decreased norm-setting activity, the practical assistance given to the Euro-Atlantic states through the implementation of select projects remains a chief activity in the improvement of security and stability in the OSCE region.

Efforts to control ‘inhumane weapons’ continued in 2009, although with less dynamism than that demonstrated in 2008 by the ‘Oslo process’ on cluster munitions. The grass-roots ‘processes’ and conventions as well as the traditional intergovernmental treaties and protocols compete, yet continue to have a mutually reinforcing moral impact as they strive to address the problems of human suffering and the betterment of living conditions in conflict-ridden areas and throughout the world.



12. CONTROLS ON SECURITY-RELATED INTERNATIONAL TRANSFERS

SIBYLLE BAUER AND IVANA MIČIĆ

MULTILATERAL ARMS EMBARGOES, 2009

There were 29 mandatory multilateral arms embargoes in force in 2009, directed at a total of 17 targets, including governments, non-governmental forces and a transnational network. The United Nations imposed 12 of these embargoes, the European Union (EU) imposed 16 and the Economic Community of West African States (ECOWAS) imposed 1.

During 2009 the UN Security Council imposed its first new arms embargo since 2006, on Eritrea. The UN widened the arms embargo on the Democratic People's Republic of Korea (DPRK, or North Korea) and lifted the arms embargo on the Government of Liberia.

Nine of the 16 EU embargoes were straightforward implementations of UN arms embargoes. In addition, two EU arms embargoes differed from UN embargoes in their scope or coverage and five did not have UN counterparts. In 2009 the EU imposed a new arms embargo on Guinea and lifted its arms embargo on Uzbekistan. ECOWAS imposed a new arms embargo on Guinea.

As in previous years in 2009 several violations of UN arms embargoes were recorded. For example, cargo inspections led to the uncovering of violations of the UN embargoes on arms exports from Iran and North Korea.

The multiplicity of actors involved in proliferation-sensitive transactions and their inherent complexity require adjustments not just of the concepts and language, but also of related laws as well as licensing and enforcement mechanisms. The focus of non-proliferation efforts has shifted from the physical movement of goods to analysis of which elements of a transaction are relevant to, and should be subject to, controls. These developments not only create challenges, but also offer new opportunities for international cooperation.

The main forums where states meet to discuss how to maintain effective export controls on items that may be used in nuclear, biological and chemical weapons as well as missile delivery systems for them are the Australia Group (AG), the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG) and the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-use Goods and Technologies (WA). The intangible transfer of technology (ITT), enforcement and penalties, best and proven practices for effective export controls, and engagement with non-participating states are being discussed across the different regimes. In recent years, the European Union (EU) has also



increased its cooperation with non-EU countries at working level through technical assistance programmes.

In 2009 the EU adopted an updated and strengthened version of the 2000 Dual-use Regulation. The revised document introduces EU-wide powers to control transit and brokering for dual-use items that may be intended for use in connection with weapons of mass destruction or their delivery systems. During 2009, a new directive to facilitate the movement of defence goods inside the EU also entered into force.

Multilateral arms embargoes in force during 2009

United Nations arms embargoes

Al-Qaeda, the Taliban and associated individuals and entities
Democratic Republic of the Congo (NGF)
Côte d'Ivoire
Eritrea
Iran (technology related to nuclear weapon delivery systems)
Iraq (NGF)
North Korea
Lebanon (NGF)
Liberia (NGF)
Sierra Leone (NGF)
Somalia
Sudan (Darfur)

European Union arms embargoes

Al-Qaeda, the Taliban and associated individuals and entities
China
Democratic Republic of the Congo (NGF)
Côte d'Ivoire
Guinea
Iran
Iraq (NGF)
North Korea
Lebanon (NGF)
Liberia
Myanmar
Sierra Leone (NGF)
Somalia
Sudan
Uzbekistan
Zimbabwe

ECOWAS
Guinea

NGF = non-governmental forces.

These facts and data are taken from appendix 12A, 'Multilateral arms embargoes', by Pieter D. Wezeman and Noel Kelly.



ANNEXES

NENNE BODELL

Annex A, 'Arms control and disarmament agreements', contains summaries of multi- and bilateral treaties, conventions, protocols and agreements relating to arms control and disarmament, and lists of their signatories and states parties.

Annex B, 'International security cooperation bodies', describes the main international and intergovernmental organizations, treaty-implementing bodies and export control regimes whose aims include the promotion of security, stability, peace or arms control and lists their members or participants.

Annex C, 'Chronology 2009', lists the significant events in 2009 related to armaments, disarmament and international security.

Arms control and disarmament agreements in force, 1 January 2010

- | | | |
|------|---|--|
| 1925 | Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925 Geneva Protocol) | |
| 1948 | Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention) | |
| 1949 | Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War | |
| 1959 | Antarctic Treaty | |
| 1963 | Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Partial Test-Ban Treaty, PTBT) | |
| 1967 | Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty) | |
| 1967 | Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco) | |
| 1968 | Treaty on the Non-proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT) | |
| 1971 | Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof (Seabed Treaty) | |
| 1972 | Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (Biological and Toxin Weapons Convention, BTWC) | |
| 1974 | Treaty on the Limitation of Underground Nuclear Weapon Tests (Threshold Test-Ban Treaty, TTBT) | |
| 1976 | Treaty on Underground Nuclear Explosions for Peaceful Purposes (Peaceful Nuclear Explosions Treaty, PNET) | |



- 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (Enmod Convention)
- 1980 Convention on the Physical Protection of Nuclear Material and Nuclear Facilities
- 1981 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects (CCW Convention, or 'Inhumane Weapons' Convention)
- 1985 South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga)
- 1987 Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles (INF Treaty)
- 1990 Treaty on Conventional Armed Forces in Europe (CFE Treaty)
- 1992 Treaty on Open Skies
- 1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention, CWC)
- 1995 Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Treaty of Bangkok)
- 1996 African Nuclear-Weapon-Free Zone Treaty (Treaty of Pelindaba)
- 1996 Agreement on Sub-Regional Arms Control (Florence Agreement)
- 1997 Inter-American Convention Against the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives, and Other Related Materials
- 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (APM Convention)
- 1999 Inter-American Convention on Transparency in Conventional Weapons Acquisitions
- 1999 Vienna Document 1999 on Confidence- and Security-Building Measures
- 2002 Treaty on Strategic Offensive Reductions (SORT, Moscow Treaty)
- 2006 ECOWAS Convention on Small Arms, Light Weapons, their Ammunition and Other Related Materials
- 2006 Treaty on a Nuclear-Weapon-Free Zone in Central Asia (Treaty of Semipalatinsk)
- Agreements not in force, 1 January 2010**
- 1972 Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty)
- 1991 Treaty on the Reduction and Limitation of Strategic Offensive Arms (START I Treaty)
- 1993 Treaty on Further Reduction and Limitation of Strategic Offensive Arms (START II Treaty)
- 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT)
- 1999 Agreement on Adaptation of the CFE Treaty
- 2008 Convention on Cluster Munitions
- 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START Treaty, Prague Treaty)



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- Multilateral peace operations
- Military expenditure
- Arms production
- International arms transfers
- World nuclear forces, stocks of fissile materials and nuclear explosions
- Nuclear arms control and non-proliferation
- Reducing security threats from chemical and biological materials
- Conventional arms control
- Controls on security-related international transfers
- Multilateral arms embargoes

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- Euro-Atlantic security and institutions

and extensive annexes on arms control and disarmament agreements, international security cooperation bodies and events during 2009 in the area of security and arms control.

