

**RUSSIA:  
ARMS CONTROL,  
DISARMAMENT AND  
INTERNATIONAL  
SECURITY**

**MEMO SUPPLEMENT  
TO THE RUSSIAN EDITION  
OF THE SIPRI YEARBOOK 2011**

**MOSCOW 2012**

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ARMS CONTROL, DISARMAMENT  
AND INTERNATIONAL SECURITY**

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The volume provides IMEMO contributions to the Russian edition of the 2011 SIPRI Yearbook: Armaments, Disarmament and International Security. The contributors address a wide range of issues: nuclear disarmament: solutions to the stalemate; missile defence: challenges and opportunities; regional BMD systems and their development; evolution of the regime established by the Biological and Toxin Weapons Convention; developing the Arctic: security aspects; implications of high-precision conventional weapons for international security; trends in modern space activities. This year's edition also highlights Russian defence spending and armaments programmes; anti-missile debates in Russian expert community and local conflicts on the CIS territory.

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## PREFACE

The Institute of World Economy and International Relations presents in this volume the 12th edition of *RUSSIA: ARMS CONTROL, DISARMAMENT AND INTERNATIONAL SECURITY*. It provides IMEMO contributions to the Russian edition of the 2011 SIPRI Yearbook: Armaments, Disarmament and International Security.

By ratifying in 2011 New START (Prague Treaty) on measures for the further reduction and limitation of strategic offensive arms, Russia and the United States inspired advocates of arms control and cooperation in both countries, as well as in Western Europe and the rest of the world. There was a feeling that the decade of stalemate was over, and a world free of nuclear weapons became finally closer.

However, the cautious optimism gave way to an increasing pessimism. Russia and the USA found themselves in a stalemate over the joint European ballistic missile defence (BMD). In 2011–2012 the discussions on this issue continued against the background of the controversy between Russia and the USA over plans to develop and deploy new missile defence architecture.

BMD systems are integrated into a larger context of national security policies and military and political relations. The context poses significant hurdles to the cooperation on sensitive arms control issues. The European BMD theme is linked to the multifaceted Russia–NATO relations and broader geopolitical and strategic stability considerations.

IMEMO researchers believe that mutually beneficial compromises in the BMD area are still possible and can open the prospect of building a qualitatively new model of cooperation in many other sensitive areas.

The contributions to this volume offer solutions to the stalemate and the resumption of a sustainable international arms control. They contain specific proposals for new format of BMD dialogue and potential Russian contribution to the joint European BMD, as well as suggestions for possible compromises over strategic and tactical nuclear weapons.

This year's edition reviews the evolution of the international arms control regime established by the Biological and Toxin Weap-



ons Convention, focusing on the outcomes of the BTWC Seventh Review Conference (2011) and the need to resume negotiations on the Verification Protocol to the Convention suspended in 2001.

Readers will also find additional topical themes related to arms control agenda: high-precision conventional weapons (implications for international security); trends in modern space activities.

The research on the Arctic, presented in this volume, provides readers with an analysis of contemporary trends in developing this region and the in-depth assessment of their security implications.

Problems of Russia's military security are dealt with in the chapter on planned defence spending in 2012–2014 and the State Armaments Programme–2020.

Regional issues, directly involving Russia, are discussed in the chapter on local conflicts on the post-Soviet territory.

The brief summary of key Russian documents on national security and arms control contains reference to legislative and normative acts passed in 2011. This information is particularly useful to specialists looking for source material. They could get more details from official documents.

The book represents a collective effort. I would like to express my thanks to Academician, Dr. Alexei Arbatov, Dr. Alexandre Kaliadine and Cand. Sc. Tatiana Anichkina for compiling and editing this volume and providing important contributions of their own. Appreciation is also due to the authors of this volume – Dmitry Chizhov, Vladimir Dvorkin, Marianna Evdoyeva, Tamara Farnasova, Stanislaw Ivanov, Natalia Kalinina, Sergei Oznobishchev, Lyudmila Pankova, Natalia Romashkina and Andrei Zagorski.

I would like to express my earnest gratitude to the Russian International Affairs Council and ROSOBORONEXPORT, JSC for their assistance in publishing this volume.

I gratefully acknowledge the lasting support of this project by the Swiss Federal Department of Defence, Civil Protection and Sports.

Academician Alexander Dynkin  
Director  
Institute of World Economy and International Relations  
Russian Academy of Sciences  
September 2012

## ACRONYMS

ABM	– Anti-ballistic missile
AHW	– Advanced hypersonic weapon
APV	– Armoured patrol vehicle
ALCM	– Air-launched cruise missile
AUSMIN	– Australia-United States Ministerial Consultations
BEAC	– Barents Euro-Arctic Council
BM	– Ballistic missile
BMD	– Ballistic missile defence
BTWC	– Biological and Toxin Weapons Convention
BW	– Biological weapon
CBM	– Confidence-building measure
CIS	– Commonwealth of Independent States
CSBM	– Confidence- and security-building measure
CFE	– Conventional Forces in Europe (Treaty)
CPGS	– Conventional prompt global strike
CSM	– Conventional strike missile
CSTO	– Collective Security Treaty Organization
CTBT	– Comprehensive Nuclear-Test-Ban Treaty
CWC	– Chemical Weapons Convention
DARPA	– Defense Advanced Research Projects Agency (the USA)
DIC	– Defence-industrial complex
EASI	– Euro-Atlantic Security Initiative
EPAA	– European Phased Adaptive Approach (the USA)
ERS	– Earth remote sensing
EU	– European Union
FC	– Federation Council (Russia)
FBS	– Forward-based system
FMCT	– Fissile material cut-off treaty
FSP	– Federal special programme (Russia)
FTP	– Federal target programme (Russia)
FZ	– Federal law (Russia)
GBI	– Ground-based interceptor
GLONASS	– Global Navigation Sputnik System (Russia)
G8	– Group of Eight (industrial states)
GDP	– Gross domestic product

GMD	– Global missile defense (the USA)
GOZ	– Gosudarstvennyi oboronnyi zakaz (Russia)
GPV	– Gosudarstvennaya programma vooruzheniy/ State Armaments Programme (Russia)
GPS	– Global Positioning System
HCOC	– Hague Code of Conduct
HTV-2	– Hypersonic technology vehicle-2
IISS	– International Institute for Strategic Studies
IAEA	– International Atomic Energy Agency
ICBM	– Intercontinental ballistic missile
IMEMO	– Institute of World Economy and International Relations
IMF	– International Monetary Fund
IMO	– International Maritime Organization
INF	– Intermediate-range Nuclear Forces (Treaty)
IRBM	– Intermediate-range ballistic missile
ISU	– Implementation Support Unit
JDEC	– Joint Data Exchange Centre
MIRV	– Multiple independently targetable re-entry vehicle
MTCR	– Missile Technology Control Regime
MWS	– Missile warning system
NATO	– North Atlantic Treaty Organization
NK	– Nagorny Karabakh
NKR	– Nagorno-Karabakh Republic
NGO	– Non-governmental organisation
NPT	– Non-Proliferation Treaty
NTI	– Nuclear Threat Initiative
NW	– Nuclear weapon (warhead)
OSCE	– Organization for Security and Cooperation in Europe
PTSS	– Precision tracking space system
R&D	– Research and development
RF	– Russian Federation
ROSATOM	– Russian Federal Atomic Energy Agency
RAF	– Russian Armed Forces
RNC	– Russia-NATO Council
SALT	– Strategic Arms Limitation Talks
SBIRS	– Space-based infrared system
SD	– State Duma (Russia)
SDI	– Strategic Defense Initiative (the USA)
SIPRI	– Stockholm International Peace Research Institute

SLBM	– Submarine-/sea-launched ballistic missile
SLCM	– Sea-launched cruise missile
SNDS	– Strategic nuclear delivery system
SNF	– Strategic Nuclear Forces
SRAM	– Short-range air missile
SOA	– Strategic offensive arms
SORT	– Strategic Offensive Reductions Treaty
SRF	– Strategic Rocket Forces (Russia)
SSBN	– Ship submersible ballistic nuclear (strategic nuclear submarine)
SSN	– Nuclear-powered submarine
START	– Strategic Arms Reduction Treaty
TCBM	– Transparency and confidence-building measure
THAAD	– Theatre high-altitude area defence
TNW	– Tactical nuclear weapon
TMD	– Theatre missile defence
WMD	– Weapon(s) of mass destruction



## **PART I. ANALYSES, FORECASTS, DISCUSSIONS**

1. Nuclear disarmament: a stalemate or a time-out?
2. Key aspects of cooperation between Russia and USA/NATO over missile defence: challenges and opportunities
3. Evolution of the MTCR and BMD: regional aspects
4. Anti-missile debates: two trends in Russian expert community
5. BTWC: outcomes of the Seventh Review Conference
6. Developing the Arctic: security issues
7. Tactical nuclear weapons and the Russia–NATO dialogue



## **1. NUCLEAR DISARMAMENT: A STALEMATE OR A TIME-OUT?**

Alexei ARBATOV

By signing and ratifying New START (Prague Treaty) in 2010-2011, Russia and the United States inspired advocates of co-operation in both countries, as well as in Western Europe and the rest of the world. The new Treaty made it possible for the world powers to convene for a summit in 2010 to discuss the safety of nuclear materials and technologies, and for a successful Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). There was a feeling that the decade of stalemate was over, and the nuclear weapon free world that the two presidents urged for, became finally closer.

However, the cautious optimism gave way to an increasing pessimism by the late 2011. During the ratification of Prague Treaty in the winter of 2010–2011, both parliaments made some contradictory reservations to the Treaty, that are irreconcilable for holding any further negotiations on arms reduction.

For the future, the USA prioritised the transition to limitations on tactical (non-strategic) nuclear weapon (TNW), which Russia took very negatively.

The sides found themselves in a stalemate over the joint European ballistic missile defence (BMD) at the G8 summit in Deauville, France. Russia began pondering a withdrawal from New START, and President Medvedev went as far as to caution against a new arms race<sup>1</sup>. The situation was not any better with the Treaty on

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<sup>1</sup> Transcript of the G8 Summit Closing Press Conference, 27 May 2011, <<http://news.kremlin.ru/transcripts/11374>>.



Conventional Armed Forces in Europe (CFE) or the entry into force of the Comprehensive Nuclear Test Ban Treaty (CTBT), and divergences deepened on the strengthening of the NPT (sanctions against Iran and North Korea).

This paper attempts to understand the reasons for this sudden ‘change of heart’ and offer a solution to the stalemate and the resumption of a sustainable arms control, which is a prerequisite for any non-proliferation regime.

## **New START**

Russian Military Doctrine of 5 February 2010 states: ‘The prevention of a nuclear military conflict, and likewise any other military conflict is the Russian Federation’s main task’<sup>2</sup>. The key tasks in containing and preventing military conflicts are ‘to maintain strategic stability and the nuclear deterrence potential at an adequate level’<sup>3</sup>.

Incidentally, the Doctrine does not say anything about the military-strategic parity with the USA (i.e. approximately equal numbers and yields of nuclear weapons). The definition of a ‘strategic stability’, with a plethora of various interpretations, was clearly formulated as an international legal standard in the only official ‘Joint Statement’ the USSR and the USA made in June 1990.<sup>4</sup> According to the Statement, it is a strategic relationship between the two states when there is no incentive for a first use of nuclear weapons, whereas the arms reduction would mean fewer warheads attributed to strategic missiles and more preference given to highly survivable weapons instead.

The Doctrine identifies the conditions of nuclear weapons use: ‘the Russian Federation reserves the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and/or its allies, and also in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under

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<sup>2</sup> Presidential Decree No. 146 ‘On Russian Military Doctrine’ of 5 Feb. 2010, <<http://www.rg.ru/2010/02/10doctrina-doc.html>>.

<sup>3</sup> Ibid.

<sup>4</sup> See: Ivanov, I., ‘Without the First Strike’, *Rossiiskaya Gazeta*, 13 Nov. 2001.

threat'. In other words, Russia will strike first in extreme circumstances only in response to an attack on Russia and its allies (members of the CSTO) with the use of weapons of mass destruction (WMD) or in response to a large-scale conventional aggression against Russia (but not its allies).

In line with the above strategic goals, the Doctrine sets the policy of maintaining the Strategic Nuclear Forces (SNF) 'at a level guaranteeing the infliction of the specified damage on the aggressor whatever the conditions of the situation'<sup>5</sup>. Interestingly, the Doctrine dropped the previous tasks of inflicting an 'unacceptable damage', 'devastating retaliation' or 'guaranteed destruction' upon the aggressor. In general, the 2010 Military Doctrine assigns the nuclear weapons a less prominent role than the previous 2000 Military Doctrine or the statements of some Moscow's policy makers and strategists.

This is the strategic background of New START. There are a few reasons why this Treaty is historically unique.

**Firstly**, from the 1972 SALT I on, all SALT and START treaties (as well as SORT – the 2002 Strategic Offensive Reductions Treaty) assumed fairly tough reductions and restraints of the SNF of the USSR/Russian Federation, because the compromise solution was a lot closer to the Washington's initial stance. The reason for that was the lack of the government oversight of the Soviet defence industrial complex (DIC) which was not subject to any domestic criticism. The leaders of the DIC have been making backstage deals to shape Moscow's negotiation stance which couldn't stand a chance against Washington's highly professional and powerful arguments.

Unlike this deep-seated practice, the new Treaty will be the first one to have a tangible effect on the US SNF for a range of reasons. However, it wouldn't follow from Moscow's solid negotiating stance, but rather from the actual standing of Russian SNF, which we will review later.

It was clear early on that the US will try to negotiate SNF reductions primarily by 'de-loading' warheads from missiles or bombers and converting the aircrafts and submarines to carry conventional cruise missiles. Both approaches raised a lot of concern in

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<sup>5</sup> 'Military Doctrine of the Russian Federation', 5 Feb. 2010, <[http://news.kremlin.ru/ref\\_notes/461](http://news.kremlin.ru/ref_notes/461)>.

Russia: the first would enable the USA to create a large ‘restoration potential’ (‘upload capacity’), i.e. the USA would be able of beefing up its forces by a rapid ‘upload’ of the warheads from stockpiles onto the delivery vehicles after the original ‘de-loading’ them), whereas the second approach would create a brand new hypothetical, albeit arguable, threat of a high-precision conventional missile strike against Russian SNF.

If Russia insisted on restraining the ‘upload capacity’<sup>6</sup>, the USA might reequip a large portion of its forces to carry high-precision weapons. Furthermore, if Russia insisted on the tougher restraining of such conventional means, the USA would choose to undertake an even more significant ‘de-loading’ and create a larger restoration (uploading) capability. Apparently, Moscow failed to pick a priority and tried to negotiate for both options. Alas, eventually New START does not contain limitations either on ‘reloading’, or re-equipment.

In all fairness, Russia managed to include intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) with conventional and nuclear payload in the count of the delivery vehicles and warheads ceilings. It is an important improvement which went almost unnoticed by the public and which distinguishes New START from the 2002 Moscow SORT. Thanks to this factor (at least to some extent), the USA gave up the project to convert some Trident-2 SLBMs (but not cruise missiles) for high-precision conventional warheads (100–200 units in total), which worried Russia until 2010.

**Secondly**, coming back to the unique characteristics of Prague Treaty, it is pertinent to note that the Treaty will operate through 2020. It imposed ‘most sparing’ limitations on strategic offensive arms (SOA), eventually reducing them to 700 deployed delivery vehicles and 1550 warheads in seven years. The US SNF will be reduced by around 100 delivery vehicles and 200 warheads. The Treaty does not affect Russian SNF projected 10 years on, at all. For reference: the 1991 START I required each side to trim around 400–500 delivery vehicles and 4000–5000 warheads in seven years.

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<sup>6</sup> Following the START I precedent, this could be achieved, for example, through a provision requiring to replace the post-boost vehicle on each MIRVed missile if more than two or three warheads are ‘de-loaded’.

In March 2012, two years on after the Treaty was signed, the first batch of regular information exchange revealed that the American SNF had, according to the agreed accounting rules, 812 operationally deployed delivery vehicles and 1737 warheads. The USA would have no problem adjusting its SNF to New START. The arsenals will gradually be reduced to fit the ceilings, mainly by off-loading some warheads from multiple-warhead missiles and converting 4 submarines and 90 bombers to carry conventional weapons (thus removing them from the Treaty count).

The service life of the Minuteman-3 ICBM has been extended until 2030, and the Trident-2 SLBM and Ohio class submarines (SSBN) will stay in service until 2030–2040, whereas a new type of heavy bomber is expected to be in service after 2020. Defense Secretary Robert Gates stated in 2010 that the fulfilment of Prague Treaty will leave the US nuclear triad with 420 Minuteman-3 ICBMs, 14 Ohio class SSBNs with 240 Trident-2 SLBMs and about 60 heavy bombers.

There is a completely different situation in Russia. In contrast to the previous treaties, Russia's main challenge is not to reduce its SNF to 700 delivery vehicles and 1550 warheads, but to build them up to these figures by 2020. According to the information exchange batch of March 2012, Russian SNF had 494 delivery vehicles and 1492 warheads. In other words, in two years Russia unintentionally has met (!) the Treaty requirements for the two items already instead of originally prescribed seven years<sup>7</sup>. By the time New START expires in 2020, the majority of Russian strategic nuclear weapons (at present in service) will be decommissioned. By this time, with the current rate of producing and deploying new SOA, Russia will have no more than 350–450 delivery vehicles and 1400–1500 warheads, or 1000–1100 warheads according to the New START attribution rules, since one warhead is attributed to every heavy bomber.

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<sup>7</sup> There is also a third parameter in the Treaty – a combined limit of 800 deployed and non-deployed vehicles. 'Non-deployed' are the bombers in maintenance, at assembly plants or in test flights, missile launchers used for tests, training or at space launch sites, as well as launchers without missiles. As of March 2012, the US had a total of 1040, and Russia – 881 deployed and non-deployed launchers and heavy bombers, i.e. in addition to deployed weapons, the countries had 242 and 335 non-deployed units, respectively.

Therefore, for the first time in the history of the treaties on SOA, Russian SNF will ‘dip’ below the treaty ceilings and then will gradually grow back. According to Defence Minister Anatoly Serdyukov, Russia will be able to build up to 1550 warheads by 2018, and will count 700 deployed delivery vehicles not earlier than 2028<sup>8</sup>.

The cause of Russian SNF’ decline is not limited to underfunding alone, although recession of the 1990s and disintegration of industrial links did a lot of damage. Still, the programme endorsed in 1998 by then President Boris Eltsin assumed that Russian SNF would now have 400–500 Topol-M/Yars ICBMs in active service. The SNF programme was prepared by a special commission led by Nikolay Laverov, Vice-President of Russian Academy of Sciences, and engaged a wide range of military and civilian experts. The Commission’s approach was as fair as it could be at the time and was free from the pressure of any institutional or defence industry lobby.

Basically, the Laverov’s Commission set a precedent of an independent approach to working out long-term solutions to crucial and extremely complex military problems. The USA has been long using similar approach known as a ‘blue-ribbon panel’. Had Russia met the targets of the programme developed by the ‘Laverov’s Commission’, Russia would have been able to reduce by 2020 its SNF to the new START ceilings of 700 delivery vehicles by gradually retiring outdated systems. Moreover, having a wide range of options for uploading warheads on the missiles (between 400 and 3000), Russia would have easily met the limit of 1550 by de-loading some warheads from multiple warhead missiles and kept the door open to quickly doubling the warheads on ICBMs in event of denunciation of the treaty (for example, if the USA decides to build up its SOA or BMD systems). Obviously, Moscow’s military-political stand in all strategic scenarios and START/BMD negotiations would have been very strong, regardless of the gap in new technologies and defence spending.

Unfortunately, the ‘Laverov’s Commission successful precedent did not receive any further support – all subsequent Russian political and military leaders did not need commissions to rec-

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<sup>8</sup> See: Litovkin, V., ‘Towards the START’, *Nezavisimoye Voennoye Obozrenie*, 21 Jan. 2011.

commend any strategic weapons, programmes or negotiations. Therefore, the nation does not have 400–500, but roughly 80 Topol-M and Yars ICBMs. Russia is now facing serious challenges in terms of the future development of its SNF.

This situation came as a result of a series of wrong military and political decisions made in 2000–2001 by the country's leadership (in particular, the president, secretary of the Security Council, and chief of the General Staff), which, despite the Defence Minister Igor Sergeyev's efforts, caused a dramatic reduction of land-based missile forces (at one point the plan was to slash the forces to mere 100 missiles) and a sharp decline in funding.

The intention was to spend the funds on the conventional forces. We all saw what it led to in the brief war with Georgia in August 2008, which triggered yet another military reform in Russia. The actual motives behind the inadequate decisions were the interests of some defence agencies and personal scheming of individual generals. Typically for Russia, the long-term national strategic interests were sacrificed to the private motives of senior leaders.

Although later there were attempts to fix the mistakes, but even with the increased spending on the SNF, the focus on the 'balanced modernization of the nuclear triad' (i.e. the land, sea, and air components) diffused the already scarce resources and did not radically improve the situation. Incidentally, the mistakes made in 2000–2001 immediately undermined Moscow stance at the strategic negotiations with the USA.

The curtailing of the programmes of the Strategic Rocket Forces (SRF) made it easy for the Bush administration to withdraw from the ABM Treaty in 2002. This was preceded by almost 20 years, starting with President Reagan's 'Star Wars' initiative of 1983, of efforts to pull out from the ABM Treaty, a step the United States couldn't afford before because of the anticipated build-up of the land-based Soviet/Russian strategic nuclear missiles.

However, the past mistakes cannot be fixed, and there are no 'what ifs' in history. Still, these are lessons to be learnt to help avoid new failures. It is certainly true with regards to the debates in Russian expert community in 2011 about how to 'fill in' the START quotas by 2020 and further on. It is extremely complex and expensive to accelerate building of new SSBNs or new bombers. That is why one of the proposals was to reinvigorate focus (traditional for the USSR) on heavy missiles and design a new liquid fuel

MIRVed ICBM (with up to 10 warheads) to be deployed in missile silos.

### **Strategic debates in Russia**

There are a few arguments in favour of a new heavy ICBM in light of the new State Armaments Program 2011–2020 (Gosudarstvennaya Programma Vooruzheniy, GPV–2020). New START will not affect this weapon system if it fits the 700–1550 ceilings, whereas a new heavy ICBM will enable Russia to bridge the gap between the START limits for the delivery vehicles and warheads and the actual available Russian SNF (in particular, in case of less than a full loading of missile warheads).

Allegedly, the new missile would have a much bigger throw-weight than any solid fuel missile. It will enable loading the missile with more enhanced-power MIRVed warheads and a set of penetration aids, effectively creating a response to any multi-level land, sea, air or space-based BMD the United States may design in the future.

The new heavy missiles would use the existing silos and available land infrastructure left from RS-20 (SS-18) ICBMs. There might be more to this argument: since the USA always negotiated to reduce Soviet/Russian heavy missiles, the new missile would be a bargaining chip able to encourage the US interest in the SOA reductions and induce it to make meaningful concessions. The heavy missiles personify power and terror: the West named RS-20 Satan, for a good reason.

Still, a few rational (in contrast to status-conscious) arguments counter this assumption. The cornerstone of Russian military doctrine is ‘to maintain strategic stability and the nuclear deterrence potential at an adequate level’. As we noted earlier, the nature of strategic stability assumes three principles: there are no motives for the first strike, there are fewer warheads on strategic delivery vehicles, and preference is given to highly survivable weapons.

The new heavy ICBM would go against all these principles. It will concentrate large number of warheads on fewer delivery vehicles. If Russia decides to deploy 100 heavy ICBMs, it would mean that 14% delivery vehicles would carry 65% warheads of the SNF. The missiles would become an easy target (one or two war-

heads are able to destroy all 10 warheads) and would be vulnerable in launch silos to US nuclear ICBMs and SLBMs with high-precision and powerful warheads, as well as potentially to future strategic high-precision conventional weaponry (cruise missiles, ballistic missiles (BMs) and boost-gliders). In order to survive the attack, heavy missiles will operate entirely on the launch-under-attack concept, which leaves the government with just a few minutes after the missile alert to make a crucial decision to launch a global nuclear war. In the world packed with nuclear missiles and anti-satellite weapons it can significantly increase chances of a nuclear catastrophe due to a failure of an early warning system, false alarm, wrong situation assessment, missile or nuclear provocation by extremist regimes or terrorist groups.

But above all, heavy silo-based nuclear missiles are primarily first strike weapons. As noted earlier, Russia's Military Doctrine allows a pre-emptive nuclear strike under certain circumstances. However, a strike at the US SNF will have no significant impact: the United States has only 420 single-warhead Minuteman-3 ICBMs (27% of warheads of its SNF) and a few warheads would be needed to destroy each silo. The key component of the US SNF – the sea-based forces – are mainly immune to attacks and can deliver a devastating counter strike with 600–700 nuclear warheads deployed in the ocean (not to mention the strategic aviation).

Meanwhile, road-mobile Topol-M and Yars ICBMs are highly survivable after deployment. Russian vast territory, woods and foul weather enhance the camouflaging. Single-warhead silo-based missiles are very tricky targets, because the attacker needs to spend more warheads to destroy one warhead. Finally they are well equipped for a launch under attack from silos and soft shelters.

Russia's concerns over the USA/NATO BMD in Europe are greatly exaggerated. Heavy missiles are not an ideal tool to penetrate even a hypothetical multi-layered BMD system. Moscow's main cause for concern is the future sea or land-based BMD system of SM-3 Block IIB included in the fourth phase (around 2020) of the European Phased Adaptive Approach (EPAA) project (around 2020) and in the more distant future – a space based system. This is primarily caused by their supposed (the systems are not available yet) ability to intercept missiles in the boost phase, before the warheads and penetration aids are de-bussed. The liquid fuel missiles have a much longer boosting phase than the solid fuel missiles, as



well as less robust stages, which makes them an easy interception target despite their enormous throw-weight.

Topol-M/Yars solid fuel missiles, as well as their latest modifications, have a shorter active trajectory and are able to penetrate any foreseeable BMD after de-bussing the warheads and penetration aids. A counter-strike does not require a large throw-weight or powerful warheads, because it does not target ICBM silos. Russia's Military Doctrine sets the goal of 'infliction of the specified damage on the aggressor', not a 'disarming strike'.

The above arguments could seem like a Cold War delirium. Nevertheless, this is the actual logic behind experts' assessment of the new weapons' impact on the strategic balance in the persisting mutual nuclear deterrence postures. Twenty years on after the end of the Cold War, such assessments are outside the public attention. However, they could still be back in the spotlight, because heavy ICBMs, more than any other weapon, were the symbol of the Cold War and the arms race. Furthermore, liquid fuel missiles are generally viewed as an outdated technology: liquid fuel missiles have been decommissioned by other world powers, including China, which is switching from the stationary liquid fuel to mobile solid fuel missiles.

Therefore, Russia's new heavy ICBM, in the overall balance of military forces, will most probably fail to motivate the USA to significant reductions under the START process, but will have a reverse effect seriously jeopardizing the global strategic stability.

The USSR, with its strategic forces roughly equal to those of the US, actually had a much larger variety of weapons, because the political leadership did not really control the defence-industrial complex (DIC). As a result of this, the choice of weapons largely depended on lobbying rather than actual efficiency of weapons. This, and not simply the intention to maintain the parity, was the main reason why the arms race was much more expensive for the USSR and became the country's unbearable economic burden. Even now, with the military spending ten times smaller in comparison to the USA, Russian SNF have four classes of ICBM (RS-20, RS-18, RS-12M, RS-12M2, and RS-24), four classes of SSBN (Projects 667 BDR, 667 BDRM, 941, and 955), three classes of SLBM (RSM-50, RSM-54, and Bulava-30) and two classes of heavy bombers (Tu-95 and Tu-160). The 'poor' United States have one class of ICBMs, SSBNs, and SLBMs and two classes of heavy

bombers (the third class of heavy bombers – B-1B – has been converted to carry conventional weapons).

Transition of Russian SNF in the next decade to just two classes of highly unified ICBMs (Topol-M/Yars) and one class of SSBNs/SLBMs (Project 955/Bulava-30) would be a highly beneficial, cost-effective and stabilizing strategy for the national deterrence potential.

Conversely, a new heavy ICBM would perpetuate Russia's wasteful diversity of the national military policy. In addition, there is an increasing pressure to design a light road-mobile ICBM (Kurier) and a rail-based missile system. It appears that new missile programmes are encouraged not so much by the strategic considerations, as by an aggressive lobbying of the DIC fighting for government contracts (which, according to GPV-2020, are worth about 23 trillion roubles or over \$767 billion). The contract to develop the new heavy missile was assigned by the Russian government to Makeyev Rocket Design Bureau in Miass, the main designer of submarine-launched ballistic missiles (SLBMs). 'Coincidentally', one of the company's board members is the Defence Minister Anatoly Serdyukov<sup>9</sup>. This is yet another example that the term 'a conflict of interest' is alien to Russian executive authorities.

A rapid build-up of delivery vehicles and warheads through mass production of the new heavy ICBM in order to bridge the gap between the delivery vehicles and warheads and the New START ceilings could be an illusion. How long will it take to design and test the new system? How will the producers establish a cooperating network and how will it work? How much funds will be allocated for the missile production and how fast could it be deployed? None of these questions have been answered yet. But one thing is certain: the funds for the new missile will not materialize out of thin air – the cash will be siphoned off other strategic nuclear programmes (Topol-M/Yars, Project 955/Bulava), other military programmes and military reforms in general (early warning systems, modernization of conventional forces, housing, compensation increase for officers, transition to contract service, etc.). The new programme may have a host of negative consequences and deliver very questionable gains.

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<sup>9</sup> Litovkin, D., 'The army is looking forward to the new generation missiles', *Izvestia*, 13 May 2011.

## Negotiations on strategic offensive arms

Russia's Military Doctrine proclaims the principle 'to comply with international treaties in the sphere of the limitation and reduction of strategic offensive arms'. However, New START, as well as all previous treaties on SOA, does not require each side to have precisely 700 delivery vehicles and 1550 warheads. The sides cannot have more, but each state may choose to have less SOA. Furthermore, the Military Doctrine says nothing about the parity concept. Hence, the concerns over the gap between the START ceilings and the actual Russian SNF after 2020 are hardly justified.

Instead of building up armaments, the issue could be settled by negotiating a new treaty and reducing the ceilings to projected levels of Russian SNF in 2020 (for example, approximately 1000 warheads according to the New START attribution rules). Naturally, a new treaty could be agreed only if all related controversial issues are settled (BMD, conventional strategic military capabilities, third nuclear parties, etc.).

If Russia decides to fill the quota of New START and maintain a closer parity with the US, the best option would be not a new heavy ICBM programme with unclear prospects, but a faster deployment of road-mobile and silo-based Yars missiles. It is a proven and reliable system which meets all strategic stability criteria. This missile can be loaded with various MIRVs and penetration aids, and potentially with high-precision conventional re-entry vehicles. No other state in the world, including the USA and China, will be able to develop such a missile for quite a while.

The Votkinsk Plant used to produce up to 100 missiles a year. If the plant boosts the last decade production of 6–8 missiles to at least 20–30 missiles a year, Russia would be able to have in active service some 200–300 ICBMs by 2020 (with 600–1500 warheads respectively). Therefore, in case New START is denounced or a new treaty is signed, Russia will have an option to rapidly build up delivery vehicles and warheads, which is impossible to do with the silo-based missiles, ballistic missile submarines or strategic aviation. The USA and other countries will have to seriously consider this possibility, and it would be a much better bargaining chip at the negotiations than a new heavy ICBM.

In order to meet any further SOA reduction requirements Russia will be able to offload some warheads from Yars ICBMs or

convert them to conventional missions. In addition, Russia would be able to build up a significant upload capacity, similar to the USA.

Apart from the increased funding, a large scale production of Yars ICBM will need a functioning arms industry cooperation network (approximately 600 enterprises) and high quality materials and parts delivered by all sub-contractors. The State Duma could have restored the state quality control for defence orders and develop a new market economy system of incentives and guarantees for producers as well as tough penalties, including bankruptcy or nationalization, for flawed products. This effort, along with a few other measures, is critical for the defence industry in general, but absolutely vital for the missile and space industry.

Path selection in the development of the SNF is not simply a technical, military or strategic problem. Russia needs a thorough study of the issue, not some backroom deals influenced by irrational motives or myths and lobbied by corporate or bureaucratic interests. There is much more at stake now than in 2000–2001. The issue at hand is the global strategic situation, military relations with the USA and other world powers, future arms control negotiations and long-term international security.

However, prospects for further SOA reductions are blurred at this stage, primarily because of the stalemate in the Russian-US talks over the cooperation in the BMD area.

### **Is joint missile defence possible?**

At the closing press conference of the G8 summit in Deauville, President Dmitry Medvedev told the reporters: ‘I have no secrets from you, especially on such a straightforward theme as missile defence. I am not entirely satisfied with the way the United States and NATO countries have responded to my proposals ... Because we’re wasting time ... What does 2020 mean? It is the year when the four-stage system of the so-called Phased Adaptive Approach is completed. If we do not reach agreement by 2020, a new arms race will begin’<sup>10</sup>.

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<sup>10</sup> Transcript of the G8 Summit Closing Press Conference, 27 May 2011, <<http://news.kremlin.ru/transcripts/11374>>.

The President also mentioned, that none of the western partners was able to explain what and whose missiles the European BMD was to intercept nearer to 2020 (i.e. at the phase four of the BMD deployment), by the time when the BMD system was to acquire potential to hit both intermediate-range and intercontinental ballistic missiles). ‘So, the conclusion is obvious: it is directed against us’<sup>11</sup>, – concluded the President.

Although the President believes the theme is straightforward, the BMD belongs to the most complex and controversial issues of modern military, strategic, technical and political agenda, with hordes of experienced specialists engaged in fierce debates.

According to many authoritative Russian and foreign experts, because the focus is on the southern threat to Europe, intermediate-range missiles with ranges between 1000 and 5500 km are available in Pakistan, Iran, Israel, and Saudi Arabia. Turkey, Syria, Yemen, Egypt and Libya have shorter-range missiles (within 1000 km). The range of ballistic missiles can be easily extended by reducing the payload and by a few other measures. For example, Iranian missile Shahab-3 can be boosted to the range of 1500 to 2300 km, new Shahab-4 will have a range of 3000 km, whereas Shahab-5 and Sijil will have even longer ranges. According to various expert estimates, Iran will be able to develop an ICBM in 10–12 years, but even Iranian IRBMs will be able to cover the continent and reach Spain, Norway or Russian Krasnoyarsk.

The outcome of the Arab spring is still unclear. But most likely the future regimes will be nationalistic and/or clerical. This creates an excellent feeding ground for a new group of ‘nuclear threshold’ states in the Middle East and North Africa.

True, Iran does not have an ICBM at present. But it would be a big mistake to sit and wait till it develops one. After all, the deployment and development of BMD (especially with the conventional interception capability) is a lot more innovative, technically challenging and expensive process than development of offensive delivery vehicles with a proven technology. Furthermore, a BMD system requires a higher efficiency assurance than any offensive missile (especially carrying a nuclear warhead) does. A failed missile simply would not strike a target at the adversary’s territory;

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<sup>11</sup> Ibid.

whereas a BMD failure would allow a single missile kill hundreds of thousands in the defending state.

The fundamental asymmetry between strategic offensive and defensive weapons (when it comes to efficiency requirements) was among the key reasons why neither the USSR/Russia nor the USA had deployed a territorial BMD system in the past forty years.

However, this asymmetry also hinders a clear distinction between a BMD system against IRBMs (1000–5500 km range) and ICBMs (with a range over 5500 km). The main difference between an IRBM and an ICBM is the latter's higher velocity. Therefore, an anti-missile needs to be fast enough to intercept a BM. Increasing the velocity and extending the range of interceptors will technically enable them to intercept ICBMs, (as in case of the notorious SM-3 Block IIB system in phase four of the US European BMD programme around 2020). It would also make them more efficient against IRBMs, and the defensive side will hardly pass up such an opportunity. The United States and NATO approved the EPAA to respond to the existing and anticipated missile threats from Iran, and refuse to limit the NATO BMD in any way<sup>12</sup>.

Following the spirit of 'resetting' the relations in 2008–2010, the USA and Russia, as well as the Russia–NATO Council (RNC) adopted a few declarations on the joint BMD. Russia proposed a 'sectorial' concept of the BMD, with Russia and NATO defending each other in all directions. NATO insists on independent but conjugated elements of the BMD of the European continent. The parties set up high-level working groups and groups of senior experts. They worked out proposals on the concepts and first practical steps for cooperation, such as: establishment of a joint centre for the exchange of data from early warning systems and notifications of missile launches (JDEC), resumption of joint BMD exercises, joint assessment of missile threats, criteria and concepts of stabilizing BMD systems and their transparent development, etc.

Nevertheless, despite the appeal of these initiatives, the things have not budged an inch. The Deauville summit in June showed how deep the divide is. Apparently the key reason is that the problem cannot be solved separately of other issues. BMD systems are integrated into a larger context of national military policies

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<sup>12</sup> Buzhinsky, E., 'Joint missile defence – unclear prospects', *Nezavisimoye Voennoye Obozrenie*, 3–9 June 2011.

and military and political relations. The context poses significant hurdles to the cooperation on the sensitive BMD issue. If the hurdles are not removed, the parties will be moving in an endless circle of declarations, abstract designs and proposals without a chance to ever materialize them into a practical arrangement.

**First of all**, Washington's policy has some inconsistencies which naturally raise Moscow's suspicions over the actual purpose of the EPAA plan. The problem is not in the fact that Iran does not yet have ICBMs or nuclear weapons. We already discussed the issue of the Iranian missiles earlier, and the world has serious reasons (backed by the IAEA data and the UN Security Council's six resolutions criticizing the controversial Iranian programme) to suspect that Iran works on the military nuclear programme.

In fact, it is a totally different matter: the USA has officially stated on a few occasions that Washington will do anything to prevent Iran from acquiring nuclear weapons (apparently assuming also similar Israel's commitment). This being the case, does it really make sense to develop a large BMD to counter conventional missiles? Unlike nuclear missiles, conventional systems do not cause significant damages. To prevent such strikes it would be sufficient to rely on the potential of a disarming strike with high-precision conventional weapons (so efficiently used in Yugoslavia, Iraq, Afghanistan and Libya) and a threat of massive retaliation.

Sometimes, Washington's representatives argue that the BMD in Europe will prevent Iran from obtaining nuclear missiles, which is in fact very doubtful. On the contrary, Tehran will most likely perceive the European BMD as a sign that the USA will eventually reconcile with Iran's joining the 'nuclear club'. No wonder, Iranian leadership has never protested against the American BMD. The larger the US BMD plans are, the better for Tehran as the issue will split Moscow and Washington, giving Iran the chance to pursue its nuclear programme.

However, many observers in Russia believe that the European BMD programme will definitely go beyond simple deterrence of the Iranian missile threat, and Americans clearly keep something back. In addition to a few Arab nations aspiring to join the nuclear missile club, China should also be factored in the equation, all the more so that the USA is preparing for a long-term regional (Taiwan) and global rivalry in the foreseeable future. A potential stand-off with China becomes the mission of the US offensive nuclear

forces, high-precision long-range conventional missiles (SLCMs), and state of the art partially orbital boost gliders (Minotaur IV Lite).

The European BMD is an integral element of the global BMD system, along with the BMD deployments in the Far East, Alaska and California. It is directed against Chinese limited nuclear missile potential, in order to push back the moment when China reaches parity in nuclear missiles and mutual nuclear deterrence posture with the USA. However, Washington cannot make it a public statement to avoid provoking China to an accelerated missile build-up, as well as to avoid a panic in Japan and South Korea which might push them to pursue national nuclear weapon programmes.

The world where the USA becomes vulnerable to a nuclear missile threat from a growing number of states, including extremist regimes, is a frightening new reality which the country does not want to accept. There had been a long and painful process of numerous crises and arms races of the 1960–70s before Washington realized its vulnerability to Soviet nuclear missiles and the need for parity. On the other hand, the Soviet Union expressed its concerns when China deployed its intermediate-range missiles, followed by ICBMs in 1970–80s. Moscow's A-135 BMD system largely owes its maintaining existence to the Chinese factor.

Moscow's key concern is that a global US BMD system can eventually be targeted against Russia. Most authoritative Russian experts (for example, generals Viktor Esin and Vladimir Dvorkin, academician Yuri Solomonov, and many others) argue that both the existing and the projected in 10-15 years US BMD would not be able to make any significant impact on Russia's nuclear deterrence. Given the provisions of New START and even further reductions of the treaty ceilings (say, down to 1000 warheads), any effort to build a BMD matching Russian SNF would require spending of epic proportions and which, however, could eventually produce so much controversy that it might actually undermine US security. All the more so that a new confrontation with Moscow is the last thing Washington needs – rather it needs a cooperation to respond to new and more pressing threats.

However, Russia should maintain adequate SNF within the limits of New START to discourage a temptation to tip the strategic balance in the US favour with a global BMD.



On the other hand, Washington's unwillingness to make any adjustments to the EPAA plan in the future is totally unacceptable. Since the programme is called 'adaptive', it should allow adjustments to respond to new threats or the level of cooperation with Moscow. However, Washington is still undecided as to what contribution it expects from Russia. The aggressive BMD stance of the Republican opposition in the US Congress creates large hurdles. It appears that at this stage the USA intends to implement the programme on its own, and expects that Russia would just need to concur and create no obstacles.

Russia is not happy with this sort of 'cooperation'; it claims an equal partnership in the European BMD. Although equality is an appealing concept, it should be backed by specific content taking into account the economic, military technical and geostrategic differences, as well as dissimilar threat perceptions of the sides.

**Secondly**, in order to cooperate on such a complex, expensive and politically sensitive system as BMD, the sides need to agree on the threat assessment. Some NATO allies do not share Washington's assessment of the Iranian programme, but still have supported the EPAA plan as a new partnership under the NATO auspices in light of the troubled mission in Afghanistan, as well as in view of economic and technical benefits of the partnership.

Russia and the USA have huge differences in the threat assessment. The problem is not in different projections of the development of the Iranian nuclear and missile programmes. Calling a spade a spade, the main difference is that most of the political and strategic expert community in Russia do not consider Iranian (or North-Korean) missiles to be a grave threat and believe that a regular nuclear deterrence would do the job. For them, the USA and NATO remain the main threat. It is openly stated in the Military Doctrine of 5 February 2010, which lists the military activities and weapons of the USA and NATO (including their BMD systems) in the top four items, whereas missile and weapons of mass destruction proliferation – a possible motive for the BMD deployment – is well below in the sixth item.

This factor significantly reduces, if not eliminates, any basis for the Russia–NATO cooperation in the BMD area. To pretend that it is not the case and pursue discussions of a joint BMD system would mean: we will never proceed beyond meaningless rhetoric.

It's about time we add this topic to the BMD agenda. Otherwise this obscure problem will remain a hurdle to any possible cooperation.

Moscow proposal of a 'sectorial' BMD looks very odd under the circumstances. Essentially, Russia proposes to be in charge of NATO defence, whereas NATO will defend Russia. Furthermore, some Russian officials went as far as suggesting a double-key control of the 'push button', a joint defence perimeter, and distribution of missile defence responsibility sectors. If this is a 'transparency' test for the intentions of the West, then it is too transparent. Indeed, NATO is well aware that Russia itself will never entrust the USA with the BMD of its national territory.

Russian President mentioned in Deauville: '... We must receive guarantees that it is not directed against us. So far no such guarantees have been given'. Meanwhile any BMD system is technically capable of intercepting a certain number of strategic missiles or their elements in various flight phases. It's certainly true for Moscow's A-135 BMD, as well as for the future S-500 system, according to the designers. Some experts claim that the existing US THAAD and Standard-3 systems also have a certain ICBM intercept capability.

However, any assessment of the BMD strategic impact on a large deterrence potential, such as Russia's, needs to consider the aggregate defence capabilities against the opponent's first strike, retaliatory or counter-strike. In addition, such an assessment needs to consider the catastrophic consequences of losing a few (not to mention a few dozen) cities for any superpower of the 21 century.

No declarations or legally binding treaties with the West (from which any side can easily withdraw) are able to provide any guarantees. The existing and projected capabilities of Russian SNF, not in any way limited by the New START ceilings, are the main and most sustainable guarantee that the EPAA plan will not be directed against Russia, as it will not be able to make any significant difference to the country's deterrence potential.

In addition, Russia's military and technical participation in the European BMD – depending on the extent of its involvement – will offer a chance to influence the specifications of the BMD system.

Russia's recurrent threats ('...if we do not come to terms, a real arms race will begin') seem to have no effect. Russia will need to modernize its SNF and TNW anyway (Topol-M/Yars, Bulava-30,

and Iskander), including BMD penetration aids at all trajectory legs. Whereas surplus weapons (like the new heavy liquid fuel silo-based ICBM with multiple warheads) will divert the funds from essential programmes and other pressing needs of the national defence.

The West clearly sees that Russia's insistence on the guarantees is a sign that the main motive of its cooperation is not a response to any third-party missile threat (which Russia believes is non-existent) but an assurance that it will not be used against ICBMs, in other words, Russia is interested in limiting the capabilities of the European BMD. Being involved in a defence programme in order to limit its capabilities appears to be a very shaky foundation for cooperation. Still, it is quite possible to limit individual system parameters (deployment sites of anti-missiles, their ability to intercept BMs at the boost stage, etc.). Since there is no clear cut distinction between systems able to intercept ICBMs and intermediate-range missiles, Washington will hardly make any concession in other aspects and reduce system's deterrence efficiency against Iran and other states with limited missile capabilities.

**Thirdly**, the joint BMD discussions have so far reminded a chess game on one side of the board, whereas the other half has been outside the political and expert focus, although it has a direct impact on the situation.

The development of the Aerospace Defence (*Vozdushno-kosmicheskaya Oborona*, VKO) is a top priority of the current military policy of Russia and of GPV-2020. VKO looks just as ambitious as the US BMD. In addition to the modernization of existing and development of new components of land- and space-based early warning radars (which Russia will need anyway), the plans include deployment of 28 surface-to-air missile regiments armed with S-400 Triumph systems (approximately 1800 surface-to-air guided missiles), as well as 10 battalions (roughly 400 surface-to-air guided missiles) armed with future S-500s<sup>13</sup>. On top of that, Russia plans to upgrade its fighter-interceptor fleet (including 600 aircrafts earmarked for purchase), a new control system which is expected to integrate BMD and Air Defence, as well as early warning system and

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<sup>13</sup> 'We cannot afford procuring bad weapons', *Voенно-promishlennii kurier*, 2-8 Mar. 2011, p. 6; *Nezavisimoye Voенnoye Obozrenie*, 11-31 Mar. 2011, pp. 8-9.

space surveillance capabilities<sup>14</sup>. Another indication of the programme's importance is that Russian current military reform plans to boost the number of officer corps by 50% (from 150 000 to 220 000 personnel) – all for the sake of VKO.

The Military Doctrine makes no secret that VKO's mission is to counter US and NATO attacks, with the primary purpose of 'timely warning of the Russian Federation Armed Forces Supreme Commander in Chief of an air or space attack ...', and then of 'ensuring the Air Defence of the Russian Federation's most important military facilities and readiness to rebuff strikes by means of air and space attack'<sup>15</sup>.

This is a clear reference to the US offensive weapons – not third countries or terrorists – especially high-precision conventional weapons (aircraft, cruise missiles, orbital boost gliders, etc.). This is yet another issue left out of missile defence discussions but which still has an indirect effect on the dialogue.

It is obvious that the current configuration of VKO designed against US and NATO attacks is incompatible with a joint European BMD. However, Russia cannot pursue two programmes in parallel: one jointly with NATO for common defence ('sectorial' project), and another defending against missile attacks ('air or space attack') by the USA and its allies. No wonder that at the meeting of the Defence Ministry Board in spring 2011 to define the VKO programme, President Dmitry Medvedev outlined the aerospace defence development policy and urged to pursue the programme '...in the context of the current situation, including the issue of our potential participation in the European missile defence under creation'<sup>16</sup>.

Hence, Russian involvement in the European BMD is an abstract and artificial problem setting. The issue is rather the compatibility of VKO and the phased NATO BMD programme.

The two years of the BMD discussions suggest that the efforts will remain futile unless, in addition to the US EPAA and its relation to Russia's nuclear deterrence, the dialogue also includes VKO and US air and space offensive capabilities, which the former is designed to counter.

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<sup>14</sup> *Nezavisimoye Voennoye Obozrenie*, 25-31 Mar. 2011, p. 3.

<sup>15</sup> 'Military Doctrine of the Russian Federation', 5 Feb. 2010, <[http://news.kremlin.ru/ref\\_notes/461](http://news.kremlin.ru/ref_notes/461)>.

<sup>16</sup> *Ibid.*

**Fourthly**, another tangible hurdle to a joint BMD is that neither the US nor Russian arms industries are committed to the cooperation. The US defence agencies and arms corporations are not willing to curtail their say in the BMD system's development; they are worried about possible technology leaks and do not trust Russia with its 'multi-vector policy' and close military-technical ties to China, Iran and North Korea.

Russian government agencies and corporations are implementing the VKO programme, and whereas GPV-2020 allocates at least 20% of the earmarked funds for that, it still amounts to over \$100 billion. According to the recent sensational statement of the Military Prosecutor Office, about 20% of the state defence order is embezzled. It is not yet clear how it could impact the aerospace defence, but anyway the least Russian defence buyers and contractors need is thorough US audit and Congress committees' criticism.

Neither military establishment is certain how to fit the new BMD system in the traditional mutual deterrence. That is why they block even such straightforward and simple initial steps as a renewed JDEC and joint BMD exercises.

As if the issues of the joint BMD and the next moves to limit SOA were not enough, the issue of non-strategic nuclear weapons has emerged recently.

### **Non-strategic nuclear weapons**

When New START was still in the negotiation phase, the US Senate insisted on including non-strategic nuclear weapons (also known as tactical nuclear weapons – TNW) in the count, but the sides managed to avoid that and thus saved the Treaty. However, the Senate's resolution on the treaty ratification makes this requirement a corner stone at the next round of negotiations. The US 2010 Nuclear Posture Review also made a specific reference to that, just as NATO's New Strategic Concept of the same year. The West offers a few arguments in favour of this:

- as the sides reduce their strategic nuclear forces, Russian TNW superiority over the USA and NATO will become even more prominent;

- in time of war, TNWs are deployed together with conventional forces and can be engaged in action with a fairly high risk of nuclear escalation;

- TNWs (especially of old types) at the forward bases are vulnerable to theft, have a smaller weight and size, and are equipped with low efficiency blocking devices, making them an attractive target for terrorists.

Russia demands to withdraw the US TNW from Europe to the national territory as a prerequisite for the dialogue. Besides, Russia views its TNW superiority as a compensation for NATO's superiority in conventional forces – especially in the context of the CFE stalemate, as well as a potential response to unilateral BMD deployment with NATO resources, and the US superiority in high-precision conventional weapons.

It makes sense to start any TNW negotiations by defining the subject of negotiations. Non-strategic systems usually include any weapons not covered by the START and INF treaties. Based on the counterpart obligations of the USA and the USSR/Russia in 1991–92 on TNW reduction and dismantling, the non-strategic weapons include short-range missiles (up to 500 km), the army/ground forces artillery systems and nuclear mines, surface-to-air missiles of the air defence, missiles and bombs (including depth bombs) of air force and navy tactical strike aircrafts, as well as various tactical anti-aircraft, anti-ship and anti-submarine missiles, and torpedoes of surface ships and attack submarines.

According to independent expert estimates, the US has around 500 TNW units, of which around 200 (of 400) B-61 gravity bombs are stockpiled at six storage sites in five NATO member states, whereas the US Navy has 100 Tomahawk sea-launched cruise missiles (SLCM) with nuclear warheads. According to the Nuclear Posture Review, the United States will retire all nuclear SLCMs. However, the B-61 gravity bombs will undergo a life extension program.

According to the same estimates, Russian arsenals amount to roughly 2000 units of non-strategic nuclear weapons. This number comprises around 500 tactical nuclear airborne missiles and bombs for medium-range Tu-22M3 bombers and tactical Su-24 and Su-27IB/Su-34 bombers. In addition, there are about 300 airborne missiles, gravity bombs and depth bombs for naval aviation. Over 500 TNW units are anti-ship, anti-submarine, and anti-aircraft missiles,

as well as torpedoes on ships and submarines, including as many as 250 nuclear long-range SLCMs on attack submarines (RK-55 Granat). S-300 and S-400 surface-to-air missiles and other air defence systems are estimated to be 630 units in total<sup>17</sup>. According to Russian official data, by 2000 all Navy and Naval Aviation TNW had been removed to centralized storages, with 30% of these weapons disassembled. Russia also eliminated 50% tactical nuclear weapons assigned to the Air Force and 50% warheads of air defence systems. Nuclear warheads of artillery systems, tactical missiles and mines of the Ground Forces were partially disassembled<sup>18</sup>. If the expert estimates are correct, the following decade saw even more TNW reductions.

It should be noted, however, that the estimates apply doubtful counting rules. For example, some gravity nuclear bombs (such as US B-61 and B-83) can be delivered by both heavy bombers and tactical strike aircraft. Sea-launched long-range nuclear cruise missiles (up to 3000 km) were never considered TNW and have been limited to an 880 ceiling by the START I of 1991. The US Navy has thousands of such conventional SLCMs which look exactly as nuclear missiles. Russian Air Force and Navy medium-range Tu-22M3 (Backfire) bombers were not counted as tactical weapons either. They were covered by the SALT II Treaty of 1979 and the CFE Treaty of 1990 for the European part of Russia.

Another important aspect: TNW employ dual-use delivery vehicles (medium-range bombers, fighter bombers, short-range missiles and surface-to-air missiles, ships and attack submarines and heavy artillery). Therefore, unlike strategic nuclear weapons, it is impossible to limit, reduce, or eliminate TNW by getting rid of launchers, delivery vehicles or platforms, since they all fall in the category of conventional forces. They are designed mainly for conventional military missions and are partially covered by other agreements (such as the CFE Treaty).

Another distinction setting tactical from strategic nuclear weapons is that TNW are usually not operationally deployed (i.e. deployed on delivery vehicles or launchers) in the peacetime, but

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<sup>17</sup> See: *SIPRI Yearbook 2010. Armaments, Disarmament and International Security* (Oxford: Oxford University Press, 2010), pp. 336, 344.

<sup>18</sup> 'Speech by Russian Minister of Foreign Affairs Igor Ivanov at the NPT Review Conference, 25 Apr. 2000', *Diplomaticheskii vestnik*, no. 5 (2000).

rather stored at various locations. Therefore, the reduction and limitation of TNW assumes inspections at storage locations and elimination of nuclear warheads. None of that has ever been done before in the history of the arms control agreements. Similarly, there have never been any elimination verification methods, which would prevent declassification of nuclear explosive devices design and nuclear weapon-grade material specifications.

In addition to the US and Russia, France has 60 airborne tactical nuclear missiles. China has around 100–200, Israel – 60–200, Pakistan – 60, India – 50, North Korea – 6–10 units of this type. These are medium and short-range ballistic and cruise missiles and aerial bombs deployed at strike aircraft. For some of the aforementioned states, TNW represent all available nuclear arsenals or the larger part of them. None of them are able to reach the US, but Russian territory is well within their range. Russia, in the meantime, views its medium-range bombers (the missiles were disassembled according to the INF Treaty of 1987) and tactical nuclear weapons as deterrence against third countries.

According to the official data published in 2010, the US SOA, TNW and active stockpiled reserve consist of 5113 nuclear warheads. Independent experts estimate that another 3500–5000 warheads are at storage sites awaiting dismantlement. Allegedly, Russian storage sites keep a lot less strategic, but more tactical nuclear weapons.

Assuming strategic and non-strategic nuclear weapons are often stored together and share the same elimination methods, the USA has proposed an equal bilateral ceiling for strategic and non-strategic nuclear weapons at storage facilities in Russia and the USA.

At first glance, this proposal seems to be very smart. As a matter of fact, Russia and the USA are not much different in terms of the amount of strategic and tactical nuclear weapons stored as ‘active reserve’, if we exclude nuclear warheads of the air-defence missiles (as Viktor Esin, a reputable Russian general, reasonably proposed).

Upon a closer view, however, the proposal raises a lot of controversy. Thus, Russia views any potential negotiations on TNW in conjunction with a progress in the CFE treaty, European BMD, and, possibly, strategic conventional weapons. Besides, differences in geostrategic positions of the two countries and ability of third



countries to reach them with nuclear weapons make the bilateral parity a very doubtful prospective.

Furthermore, there are no reliable methods to distinguish nuclear weapons in reserve storage from the warheads awaiting dismantlement, whereas each side can easily count around 8000–10 000 units of such weapons. It is unclear how to count and categorize plutonium rods in containers. (The USA stores up to 15 000 units at the Pantex nuclear manufacturing plant near Amarillo, Texas, whereas nothing is known about Russian numbers, although the storage facility at Mayak plant in South Urals can accommodate up to 25 000 containers.)

Furthermore, the disassembly and dismantlement facilities have limited capabilities (about 300 units a year in the USA and slightly more in Russia). There are no reliable inspection methods acceptable from the point of view of state secrecy. The dismantlement does not make much sense when there are no agreements to verify the discontinued assembly of new nuclear warheads, just as there is no control of the weapon-grade nuclear materials or an operational Fissile material cut-off treaty.

Nevertheless, the hard-line stance of Russia on the issue is not quite justified. It reminds of initial stubborn negativism with regards to ABM limitations of the late 1960s, or medium-range missiles limitations of the early 1980s. Russia had to give up this stance only to agree to a compromise a lot closer to the Western terms.

Contrary to popular opinion in Russia, under certain conditions Moscow is more interested in TNW negotiations than the USA and NATO. First of all, the US TNW are just a 'bonus' to its SNF (about 13% warheads), whereas the USA is outside the range of Russian weapon systems. Secondly, an integrated approach to TNW negotiations could finally make a breakthrough in a stalemate over the CFE and facilitate the progress in the European BMD and US strategic conventional weapons. Alternatively, a stalemate in TNW will never make the US pull out its nuclear weapons from Europe and will not allow the sides to progress in the CFE, BMD and high-precision conventional weapons, which Russia essentially needs more than the West.

Thirdly, a package of TNW-CFE-BMD agreements can fill with a deep strategic meaning Russia's initiative of the new Euro-Atlantic security architecture, which so far looks like a 'nice package without the filler'. Fourthly, opposing theatre nuclear weapons

in Europe (detering a non-existing risk of a large scale war) are in fact a prominent relic of the Cold War and Russia's alienation from European socioeconomic, political and humanitarian landscape.

Finally, Russia's desire to make the nuclear weapons limitation process a multilateral effort cannot be implemented without an agreement on TNW, since this class of weapons represents a considerable part of third countries' arsenals.

Still, even if the parties make a progress in the CFE and cooperation in the European BMD, the actual approach to tactical nuclear weapons should be different from the one offered by the USA or Russia. The starting point should be a well-defined subject of the negotiations, which is far from being clear to either side.

Russia's demand that the USA withdraw its tactical nuclear weapons from Europe is unrealistic due to the NATO allied obligations and US nuclear guarantees. Similarly, Moscow can hardly aspire parity with all the non-strategic nuclear weapons of third countries in Eurasia (most of these are deterrence tools against neighbours in the region, which is the case with Israel, India, Pakistan, North Korea and China).

On the other hand, Washington should not demand a bilateral parity in terms of all nuclear weapons in storage. If the TNW negotiations proceed in the bilateral format, Russia, in addition to integrating the CFE issue into the negotiations, could insist on excluding from this process a few non-strategic regional or defensive systems (for example, Tu-22M3 with H-22N Bur missiles, nuclear KR-55 SLCM, S-300 and S-400 surface-to-air systems).

Along with the consultations on the subject of the negotiations, it would make sense to exchange data on the numbers, types and storage of remaining tactical nuclear weapons dismantled in line with the presidential initiatives of 1991–1992. The sides could later exchange information on the existing TNW, their distribution between military branches and storage sites.

As a goodwill gesture, Russia could dismantle its air defence nuclear warheads in response to the US decision to dismantle nuclear SLCMs (suggested by a prominent military expert Vladimir Dvorkin).

Then, instead of the unattainable and unverifiable agreement on the parity of nuclear weapons in storage, the sides should agree, for example, to remove the TNW warheads from the bases of Air Force, Navy and other military branches to centralized storage sites.

Since the storage sites at the bases are well known, it would be fairly easy to verify that they are empty. Such an agreement would help to induce the USA to remove the aerial bombs from Europe and place them outside the Air Force bases within its national territory. This method would make the inspectors' life a lot easier: they would not need to identify the types of nuclear weapons at the storage and production facilities and count them, as well as perform intrusive inspections of disassembly and dismantlement facilities.

Such an agreement would meet the requirements of the sides to the TNW limitations through the limitation of the quantities of storage locations, not weapons. The purposes are the elimination of misbalances, prevention of unauthorized use and access of terrorists. TNW could be stored at centralized storage sites awaiting controlled dismantlement along with strategic warheads or within other initiatives. In event of a new threat from the west, south or east, these weapons could be openly returned to military bases. This arrangement would serve as a deterrent of any potential threat.

### **New format of BMD dialogue**

The actual military doctrines of the two powers conflict with the concept of a joint BMD. It would be naïve to believe that the cooperation in this area would become a lever transforming the entire military policies. In fact, the outcome has been exactly the opposite: the opposing elements in the two military postures blocked any progress in the BMD talks. Only countries' own national decisions and international agreements are able to make any changes to military policies.

Therefore, making an agreement on the European BMD a prerequisite for other negotiations would mean a sure and extended stalemate. However, the sides can breathe a new life into the negotiating process. For that, they will need to review the format of the BMD discussions and keep working on a range of associated issues; otherwise the missile defence problem would remain in limbo.

First of all, Russia should officially notify its Western partners that it is pursuing its own broad VKO programme including anti-missile systems. Therefore, the negotiations should not focus on Russia's participation in the European BMD (as a 'poor relative'), but rather on the compatibility of Russian and US (NATO)

BMD systems. Secondly, Russia cannot pursue two defence programmes simultaneously: building one jointly with NATO, and the other – against NATO. VKO programme is a response to its concerns over a range of US strike weapons, programmes and concepts of advanced conventional weapons. The next round of the negotiations on SOA should ensure they are not directed against Russia and discuss their potential limitation (similar to conventional warheads of ballistic missiles which were included in the New START ceilings). As an option, this issue can also be negotiated separately. Thirdly, while proceeding with the limitations on SOA, Russia should be prepared to negotiate the limitation of TNW and use it as its political and military bargaining chip. Fourthly, the dialogue on TNW should proceed along with intensified negotiations to resume the Adapted CFE Treaty.

If this policy proves to be successful, Russia will need to restructure its VKO programme to direct it against missile threats from the third countries and make it compatible with the NATO European BMD. The USA and NATO, on the other hand, should factor in Russian concerns, including the adjustments to their BMD programme to make it compatible with VKO. Only then the parties will be able to integrate their information systems, run joint missile tests, and later gradually turn to a BMD development and deployment cooperation and operational coordination.

Once the priorities are set, Moscow can proceed with the ‘multichannel’ negotiations and get certain benefits in exchange to some concessions. The rest is the art of the renowned Russian diplomacy.

Finally. The development of a joint BMD is a qualitatively new level of cooperation as opposed to traditional arms control talks. The military establishments, after over half a century of the standoff preparations, should agree not only to the limitations, but to a diligent cooperation between the relevant agencies and industries. As they say, you can lead a horse to water, but you can’t make it drink. In order to make the joint BMD work, the Presidents cannot rely on the military establishments and corporations to follow along against their will. The leaderships should set up state and industrial institutions with a vested interest in facilitating the cooperation. They will also need support of most of the national political elites, expert communities and the mass media.

## **2. KEY ASPECTS OF COOPERATION BETWEEN RUSSIA AND USA/NATO OVER MISSILE DEFENCE: CHALLENGES AND OPPORTUNITIES**

Vladimir DVORKIN

Russian leadership believes that the negotiations between Russia and the US/NATO over the cooperation in building the European BMD have currently reached a stalemate, although further discussions are not ruled out.

Such pessimism is due to the disagreement on the relevance of the missile threats, division of responsibility for missile defence of the individual territories, the impact of the European BMD on Russian nuclear deterrence capabilities and the US/NATO rejecting Russian demands regarding legally binding guarantees that the European BMD will not be directed against Russian Strategic Nuclear Forces (SNF).

### **Missile and nuclear threats**

The argument about the absence of missile threats from the South is as good as saying there is no efficient missile defence system to defend all of the Russian national territory and all of Europe. Building such a BMD after an actual missile threat has emerged would be a strategic miscalculation.

Reputable Russian and American experts assessed Iranian and North Korean missile threats in 2009–2010 in the joint studies, sponsored by the East West Institute and International Institute for Strategic Studies (IISS), presenting the detailed status and potential

development of the North Korean and Iranian ballistic missiles (BM) and space launch vehicles programmes.

This assessment allows predicting when the extended range BM could be expected to be developed. In particular, the studies confirmed that the launch rocket Iran used to deliver a 27 kg satellite cannot be transformed into an intercontinental ballistic missile (ICBM) due to an inefficient second stage.

IISS experts conducted an additional round of studies in 2011 and confirmed that the modernized Iranian missile Shahab-3M (Ghadr-1) with a boosted propulsion system and extended accuracy guidance system has a 2000 km range and carries an up to 750 kg payload<sup>19</sup>. In addition, reducing the payload to 500 kg extends the range by over 200 km.

In general, it is a profound mistake to believe that the states like North Korea and Iran could only have limited range missiles based on Soviet Scuds. As far back as the late 1950s, the Soviet Union designed R-12 and R-14 missiles with the maximum flight range 2000 and 5000 km, respectively.

Nothing is known about any ground tests of liquid fuel propulsion units comparable to the power of such missiles' propulsion systems. However, it would be wrong to assume that other countries do not have an access to a similar technology. Besides, the Soviet Union never had fuel missiles of the type developed by Iran.

The updated IISS reports state that the Iranian mobile solid propellant two-stage BM Sejil-2 has the range of 2200–2400 km and carries 750 kg payload. Successful flight tests of the missile came as a complete surprise to many experts and demonstrated significant advances the Iranian designers made in engineering large solid fuel boosters. The expert estimates showed that a consistent improvement of materials used in the boosters' bodies and missiles (including the use of composite materials) will extend the missile's range to 3500 km<sup>20</sup>. Moreover, there are no significant obstacles to designing a three stage missile of the similar type, which could extend the flight range.

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<sup>19</sup>*Iran Ballistic Missile Capabilities*, International Institute for Strategic Studies (2011).

<sup>20</sup>*Ibid.*

Therefore, an estimated time Iran needs to produce a long-range BM is consistent with the timeline of European BMD deployment.

Another significant factor is Iran's potential to manufacture nuclear warheads for missiles. This issue has also been extensively discussed in numerous publications, including IISS materials. Foreign and Russian experts agree that it could take about a year for Iran to manufacture a nuclear warhead. Although it is assumed that Iran will need to make an appropriate political decision to do that. However, Tehran will hardly make such a decision public. Moreover, we cannot exclude the possibility that such a decision has already been made.

The IAEA report published in 2011 deepened the international community's concerns that Iran has been working on a nuclear warhead. In particular, it noted that Iran has been rejecting IAEA requests to address the misgivings that the country has secretly developed a design and drawings of a BM nuclear warhead, conducted nuclear warhead detonation tests, and worked on other elements of the arms program<sup>21</sup>.

### **European BMD threat to Russian Strategic Nuclear Forces**

The proposed sea and ground based Standard (SM-3) interceptors, THAAD systems and 3 cm X-band radars, GBI strategic interceptors with early warning radars will be an integral part of the BMD defending the US and European territories. Russia views this capability as a threat to its nuclear deterrence.

Analysis of the plans to deploy the missile defence system in the US and Europe demonstrates that by 2020 its striking power will include: 50 silo GBI launchers in two missile deployment areas hosting up to 40 GBI interceptors, 44 warships and 2 ground bases equipped with Aegis – computer-assisted action-information system, at least 9 THAAD batteries (27 missile launchers), 15 Patriot batteries (60 missile launchers). At least 474 interceptors could be deployed to intercept missiles at the midcourse, in particular: up to 40 interceptors GBI, 21 SM-3 1A, 373 SM-3 1B, at least 25 missiles SM-3 2A, 25 SM-3 2B. At the final stage, the missile defence

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<sup>21</sup>See: IAEA. GOV/2011/65, 9 Nov. 2011.

system will comprise at least 1770 missiles: 70 SM-2 Block IV, 503 THAAD and 1198 PAC-3. However, strategically important will be up to 40 GBI interceptors deployed in the US and 50 SM-3 2A and SM-3 2B interceptors deployed in Europe.

The threat assessments assumed the case of SM-3 IIB interceptors having the maximum speed of 5.5 km/sec deployed in Poland, and Russian ICBMs launched from Vypolzovo (Topol missiles), Tatischevo (RS-18 missiles) and Orenburg (RS-20 missiles) launch sites.

The estimates assumed that satellites take 50 seconds to detect the missile launch. The system starts tracking Topol missile along its flight path in 140 seconds following the launch in Vypolzovo (Yaroslavl) at the 150 km altitude. Fylingdales radar engages at the 170<sup>th</sup> second of the flight time at the end of missile's powered flight phase. By the time M-3 2A interceptor launches in 200 seconds, the missile will reach the 315 km altitude.

Fig. 1 shows the flight trajectory of a missile launched from Vypolzovo launch site at the north-western targets and the flight trajectory of SM-3 interceptor, the detection time of the missile launch, interceptor's launch and flight. The figure clearly shows that the interceptor's warhead lags behind the ICBM warhead by 3 minutes due to insufficient velocity.

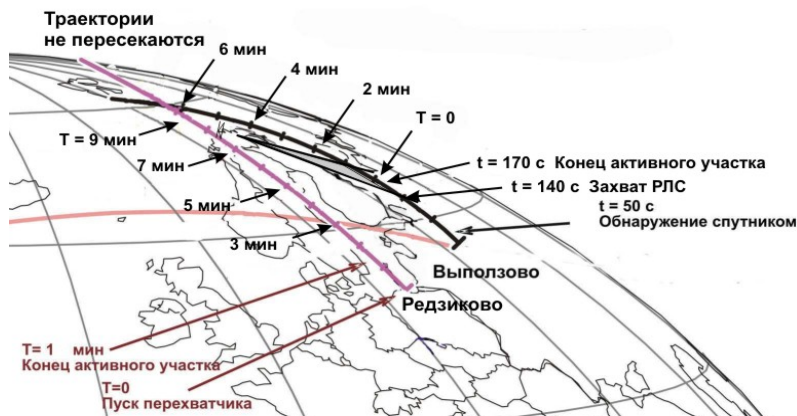


Fig. 1.

Similar situation will happen when Russian ICBMs are launched from Tatischevo and Orenburg.



Fig. 2 shows the flight path trajectory of a missile launched from Tatischevo at the north-western targets; SM-3 interceptor flight trajectory; the detection time of the missile launch, and interceptor's launch and flight.

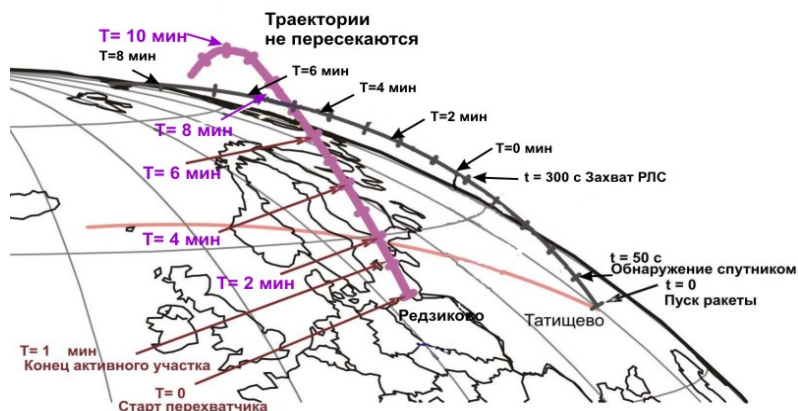


Fig. 2.

Fig. 3 shows flight trajectory of the missile launched from Tatischevo, Orenburg, at the north-western targets; SM-3 interceptor flight trajectory; the detection times of the missile launch, and interceptor's launch and flight.

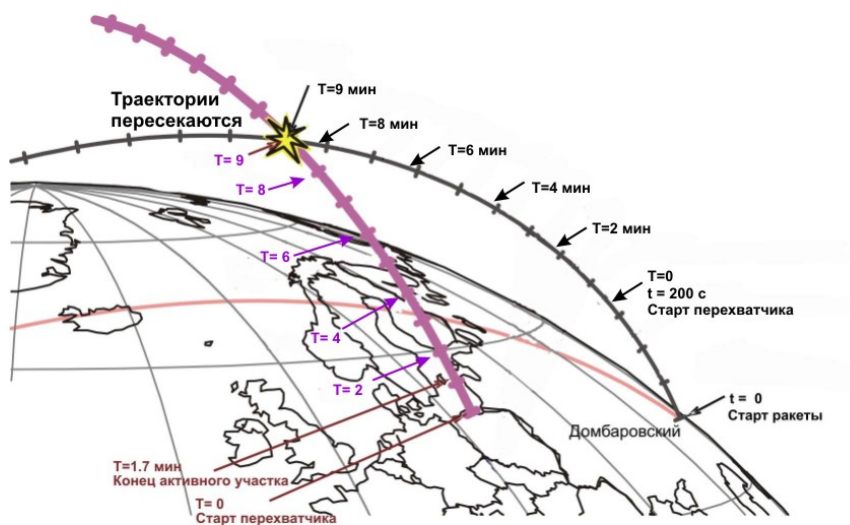


Fig. 3.

Therefore, the existing detection and tracking systems deployed on the ground and at sea and equipped with SM-3 2A interceptors, even hypothetically, will not be able to intercept Russian ICBM warheads. However, new space-based early warning SBIRS and high accuracy trajectory tracking PTSS systems reduce the time for interceptor launch and, for example, with the Topol ICBM launch from Vypolzovo in the north-western direction, the interceptor can destroy the warhead if it is not equipped with penetration aids.

The probability of such interception could be represented based on the estimated capability of the US BMD system in Europe to destroy Iranian missiles, documented in the reports of the aforementioned organizations with the assistance of a group of independent international experts. The high resolution (up to 15 cm) of X-band radars allows detecting the exo-atmospheric portion of the flight path both of the warhead and part of decoys, but such radars find it difficult to distinguish between a decoy and the warhead. At the same time, simple penetration aids available to Iranians could effectively reduce the warhead reflection area from 0.03 cm<sup>2</sup> to 0.01 cm<sup>2</sup>, thus significantly reducing the detection range for the warhead. At the best case, boosting the number of X-band radar modules to 80 thousand units would produce a detection range of 1300 km with the minimum range of 2000 km. On average, five missile interceptors should be launched to hit one warhead of an Iranian missile.

There is no doubt that Russian ICBMs and SLBMs are equipped with far more sophisticated penetration aids – the product of years of research and development, which are still being modified and adapted to potential missile defence systems.

According to US and Russian independent experts, GBI strategic interceptors, which the Bush administration initially planned to deploy in Poland, could hypothetically intercept warheads of Russian ICBMs launched from European Russia in the western direction and targeting the US territory. However, it does not ensure the destruction of a Russian ICBM's warhead moving in a cloud of heavy and light decoys, jamming stations and chaff dipoles. Besides, the US would not know the specifications of penetration aids, since they are tested discretely from surveillance. Therefore, interception of a single warhead would have required all 10 GBI interceptors. Hence, deploying GBIs and, all the more so, Aegis sys-

tems, to intercept a single Russian ICBM seems completely irrational.

Thus, the new architecture of the European BMD system will have no effect on Russian nuclear deterrence against the US.

This statement is relevant to all phases of the European BMD, even though the third phase (2018) is expected to deploy SM-3 Block 2A interceptors having even higher efficiency to destroy intermediate-range ballistic missiles (IRBM). An SM-3 type extended range interceptor is now being developed for this purpose. The extended flight range is ensured by an increased mass of the solid fuel (the diameter of the second and third stages will be increased approximately by a half – from 34.3 cm to 53.3 cm).

Finally, the fourth phase (2020) plans to further modernize SM-3 Block 2B anti-ballistic missile. It is expected to have ICBM intercept capability. It is fairly possible that the upgraded velocity performance will give the interceptor (if Aegis ships are deployed to the Mediterranean) the capability to destroy Iranian long-range BMs at the active trajectory leg.

Once in a while, the US has been reviewing a hypothetical scenario, when mobile sea-and ground-based BMD systems are moved to the US to create a solid line of defence against the attack of Russian SNF. However, this scenario appears to be invalid for many reasons. One of the major concerns is that the relocation of the BMD systems would take a while and could not be done discretely, whereas the relocation itself would be perceived as a preparation for an attack, with a high probability of Russia's pre-emptive strike. Therefore, such scenario appears to be thoroughly unrealistic.

The US BMD ships deployed in the Arctic Ocean could also raise Russian concern. SM-3s can hypothetically intercept Russian SLBMs, especially liquid fuel ones launched from the coastal areas or from bases, at the active trajectory leg. This capacity would evolve with the improved velocity performance of the interceptors.

US space-borne early warning systems detect a missile 50 seconds into the flight time, and the future low orbital SNSS system will, at the same point of the missile flight path, detect the SLBM trajectory parameters with high accuracy and work out the preliminary target indications, sending them to the radars on Aegis ships. Thus, liquid fuel SLBMs launched from the subsurface launch platforms in the coastal waters could be hypothetically intercepted in

the second stage flight phase when the missiles are over 300 km from the launch site and up to the end of the powered flight portion at the altitudes between 200 and 300 km, which is well within the SM-3 intercepting capabilities.

Designers managed to reduce the powered flight time and the altitude of solid-fuel Bulava SLBM, compared to the liquid fuel SLBM. However, we are not able to assess the missile's interceptability due to lack of declassified information.

Some US officials maintained that SM-3 is not designed to intercept missiles at the powered flight phase, and can only destroy a warhead after separation from its booster. This is explained by the design of homing sensors and the fact that such warheads follow a ballistic trajectory, therefore it is fairly easy to predict their coordinates. Targeting at the missile flying at a considerable acceleration is allegedly a lot harder.

We believe, however, there are no technical obstacles to adjusting sensors and predicting a missile trajectory during the powered flight. All the more so that the powered flight trajectories of the Russian BMs are well known after telemetry exchange and decoding according to START I. If the US successfully developed the kinetic 'bullet-to-bullet' intercept method (interceptor's warhead destroys missile's warhead), it would be hard to believe a larger delivery system was too hard to destroy.

Besides, the US is currently improving and testing airborne laser missile defence weapon designed to destroy all types of missiles in the powered flight phase. In spite of a few unsuccessful tests, including the recent ones, the programme has not been declared 'shelved'.

The aircraft equipped with laser weapons could be relocated and deployed near adversary's missile bases. The mission would also include deploying and maintaining several combat-ready strike jets, airborne refuelling tankers and patrol aircrafts. Such airborne configuration can hardly be used to intercept BMs, with missile bases deep into the adversary's territory and defended by an efficient BMD. However, the combat air patrols near the bases and patrol areas of Russian subsurface launch platforms would threaten the BMs launched from such platforms.

Various American sources have recently criticized the BMD system under development. A few technical issues are yet to be

solved<sup>22</sup>. Deploying and maintaining the system combat-ready would be very expensive. Though this is certainly true for the current cash strapped US administration, administrations change and budget deficits get fixed.

A massive deployment of BMD ships along with support vessels around the bases and patrolling areas of Russian subsurface launch platforms, as well as concentration of aircrafts carrying laser weapons assisted by combat patrol aircrafts (similar to the missile defence relocation from Europe to the US scenario) will also create a risk of pre-emptive strike by the Russian SNF.

The Russian SNF could become vulnerable only in event of a massive build-up of ground-, sea-, air- and space-based systems capable of intercepting missiles and warheads in all flight phases, as it was expected under the Strategic Defense Initiative. This assumes return of the Cold War and a resumed arms race. However, such course of events in the US-Russian relations is highly unlikely due to a range of political and economic reasons. However, even such a density of expected US missile defence could not prevent catastrophic consequences of Russian strategic nuclear forces retaliation strike.

The status of the bilateral strategic balance between the nuclear forces of the US and Russia will not allow either European BMD or US BMD to have any devastating impact on Russia's nuclear potential.

In addition to the US, Russian nuclear deterrence strategy also considers the European NATO member states, which, in addition to significant superiority in conventional forces, include two states – France and the United Kingdom – with nuclear arsenals. Therefore, it would be reasonable to assume that Russian SNF could target administrative, industrial and military facilities in Europe.

When data and interception systems of the European sea- and ground-based BMD system are theoretically capable of intercepting ICBMs, it will have a much greater effect on the Russian strategic nuclear deterrence. However, due to the high efficiency of existing and future penetration aids of Russian ICBMs and SLBMs, the power of the Russian counter-strike against European targets

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<sup>22</sup> Myasnikov, V., 'Hyperboloid of Boeing engineers', *Nezavisimoye Voennoye Obozrenie*, 19 Feb. 2010.

would be mitigated by a few percent only, which would be absolutely unacceptable for NATO.

The above assessments allow making an estimate of the Russian counter-measures, identified in President Dmitry Medvedev's statement on 23 November 2011.

The air defence of strategic nuclear facilities has always been routinely deployed in the Soviet Union/Russia based on existing air defence capabilities, and will be deployed in the future depending on the aerospace defence spending. Therefore, it has never been specifically designed to match European BMD.

Earlier, the Soviet Union developed short-range missile defence systems to protect its Strategic Rocket Forces (SRF), however, no further research was made and the project has been cancelled.

Routine and continuous improvement of the penetration aids mounted on Russian ICBMs and SLBMs has always been the mission requirement designed to match a future US BMD.

Russian President declared the intent to develop a new set of counter-measures designed to destroy the data management and control systems of the BMD system, apparently referring to electronic suppression and cyber-attacks. Without elaborating on the organizational and technical capabilities of this effort, we need to note that these measures can be engaged only after the launch of combat operations. The circumstances when these measures could be deployed are similar to those when the Iskander-M missile complex could be used, which Russia declared on a few occasions it would deploy in Kaliningrad region and elsewhere close to the border.

These two countermeasures could be taken in two scenarios only: when Russia launches a conventional military operation against two to three times superior conventional forces of the NATO allies, or when NATO starts a war against nuclear-armed Russia. Such scenarios are absurd in the modern world, but serve here as a mere illustration of how illogical strategic rationale of such countermeasures would be (if there is any rationale at all).

Finally, President Medvedev stated that Russia could potentially withdraw from New START. This countermeasure hardly makes any sense from the military and political point of view, given the current status and the future development of strategic nuclear forces in Russia and the US. According to Russian Defence Minis-

ter Anatoly Serdyukov, the Strategic Nuclear Forces of Russia will reach the START limits for delivery vehicles (total 800 units, including 700 deployed) no earlier than 2028, and for warheads (1550 units) – by 2018<sup>23</sup>. However, Russia can reach the maximum for the warheads earlier, if it develops a new ‘heavy’ ICBM with ten warheads (with the account of Liner SLBM also carrying ten warheads).

It’s worth to note, that such a nuclear strategy would be conflicting with the principles of strategic stability which state that arms reduction should be associated with less warheads per strategic delivery vehicle and the states should give preference to highly survivable systems<sup>24</sup>.

In the meantime, the United States which by the time New START was signed had 798 deployed and mission ready delivery vehicles and 2202 warheads, could at least stop reducing its arsenals and ensure a 1.5 times superiority over Russian SNF.

Only one countermeasure – the rapid commissioning of Voronezh-DM early-warning radar in Kaliningrad region, as well as other similar radars, could benefit European BMD in terms of cooperation between Russia and the US/NATO. The point is that the integration of early warning data systems should not be limited to Gabala or Armavir radars alone. The purpose and architecture of the Joint Data Exchange Centre (JDEC) the United States and Russia agreed upon earlier, assumed that all early warning radars would feed the data on the missile and delivery vehicles’ launches of the two states. Therefore, new radars in the joint data exchange system would boost the Russian contribution to the common missile defence.

### **Potential Russian contribution to European BMD**

Russian proposals of an equal cooperation approach in building European BMD and a ‘sectorial’ missile defence system would involve an assessment of Russian capabilities for such cooperation.

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<sup>23</sup> Litovkin, V., ‘Towards the START’, *Nezavisimoye Voennoye Obozrenie*, 21 Jan. 2011. p. 3.

<sup>24</sup> Sergeyev, I., ‘No-first-use’, *Rossiiskaya Gazeta*, 13 Nov. 2001.

A-135 BMD system was deployed to protect Moscow. The last version of the system endorsed in 1995 has some room for upgrades. However, 51T6 high altitude interceptors have been removed from active service, and if one or several missiles have been launched as a provocation, to intercept any warheads with unknown fuses or even the ones having no fuses the remaining 53T6 with nuclear warheads would create multiple nuclear explosions over the Russian territory which has long been unacceptable under the modern military and political situation. All the more so, such interceptors would be absolutely unimaginable in Europe. The US Senate made a decision back in 1976 to decommission the similar BMD system at the ICBM base in Grand Forks and dismantled all anti-missiles there.

So far, S-400 Triumph systems have been equipped with anti-aircraft surface to air interceptors, and there have been no confirmed successful tests when the system has been used to intercept actual ballistic targets.

There are still a lot of uncertainties regarding the development and testing of S-500 Vityaz system expected to be mission ready by 2015.

Igor Ashurbeyli, who supervised the development of air defence and missile defence systems at 'Almaz-Antey' until 2011, admitted that the systems concept design had not been yet completed and defence companies knowingly sign the contracts they cannot deliver just to get the access to the government funds<sup>25</sup>. The lack of targets imitating real ballistic missiles is another issue to consider. As far as we know, only Topol-E, imitating a mid-range missile, can serve as a tests target for S-500. A successful verification test programme would include at least ten Topol-E launches and have a substantial price tag. Only then the industry will be able to launch S-500 in mass production.

For the note, the US has been testing THAAD and Aegis for 10-15 years; however, some independent American experts doubt the systems' efficiency. Russia will need about the same time to complete the tests of the missile defence system with the account to a few standing issues. Therefore, there are no grounds for hoping that Russia will streamline the manufacturing of BMD systems

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<sup>25</sup> Interview with Igor Ashurbeyli,  
<<http://www.ria.ru/interview/20110815/417675459.html>>.



comparable to the existing US analogues before the end of this decade or will deploy them.

The absence in the foreseeable future of the interception instrument that Russia might contribute to the US/NATO-conceived European BMD does not put up any insurmountable obstacles to genuine cooperation. Considerable opportunities remain in the field of missile defence information tools. US independent experts surmise that the integration of the Russian and US early warning systems would raise the efficiency of tracking down missile launches by 30-70%.

The contribution on the part of the space echelons of Russia's early warning system will hardly be substantial in the short term due to the current problems. All the more so that the US early warning system has an expanded capability to forecast the trajectory of ballistic missiles whose launches have been spotted. However, the chances of spotting a missile launch and estimating the trajectory by space echelons depend on the cloud cover, hence cannot be 100% precise. The radars of the Russian and US early warning systems are the most reliable instruments for detecting launched missiles and computing their trajectories.

US specialists are well aware of the unique capabilities of the Russian early warning radars in Mingacevir (Gabala) and Armavir to detect missile launches from Iran. When Iran launches its missiles from the northern testing range south-eastwards, the Mingacevir radar spots them at approximately the 110th second of flight. And if a missile is launched north-westwards, the identification occurs even earlier. None of the US radars has a comparable capability.

Equally important is the fact that Russian cutting edge experience in the field of software for tracking down attacking missiles, the discrimination of warheads against the background of dummy targets and jams, and other research products can be utilized with much result in the field of missile interception. In addition, Russia has a well-developed chain of testing grounds with a network of radars, opsonic and telemetric stations which is non-existent in Europe.

## **The nature of cooperation**

Unification of the Russian and US early warning systems might be the first step to meet Russia's demands for equitable cooperation when there is a stalemate in the US-Russian debates on the principles and forms of cooperation on the European BMD system. A Joint Data Exchange Center might be set up for this purpose. Its creation was envisioned back in 1998 by a joint decision of the Russian and US presidents, but it was not put into practice for a variety of reasons. As we said earlier, the two parties reiterated the intention at the Moscow summit in 2009. In the future, it would be reasonable to transform the JDEC into a centre for missile launch global monitoring and early warning. It should operate in the real-time mode and have offices in Moscow and Brussels.

Therefore, the Russian proposal to create a so called 'sectorial' BMD system appears to be premature. The unified Russian and US early warning system grounded to the centre for missile launch global monitoring and early warning cannot be sectorial. It will be created to make the resolution of a common task more efficient. The information from any system that has tracked a missile launch will be transmitted to the centre that will process the entirety of data. The duplicate processing will only improve tracking efficiency.

When Russia gets the interception capabilities comparable to the American ones, the principle should remain unchanged – only the interceptors capable of destroying targets are eligible for launching. If both Russia and the US send their anti-missiles to intercept a target, this will only enhance the success of interception. One should bear in mind though, that the combined system must be fully automated, since every second is vital. Such a system will choose the best means of interception automatically. The command and control posts will not have time to clear out whose sector is engaged.

In this connection, one should point out the special treatment of sovereignty of Russia and NATO member states with regards to the BMD cooperation.

The West insists that each participating country will defend its own territory, although they allow for the operational protocols that would be coordinated in advance and would allow each side to intercept missiles crossing its territory if they were targeted at the other side's territory.

These suppositions (in particular, voiced by the NATO Secretary General and representatives of East European nations – new NATO members) refer to the Art. V of the North Atlantic Treaty on collective defence.

This could be true for an actual joint missile defence system, such as in Russian ‘sectorial’ system proposal. In fact, this proposal went even beyond Art. V, and assumed that the territories covered by one party will not be defended by the other (for example, Russian missile defence system defending Baltic states).

In other words, NATO would rely on Russian missile defence to protect their population, and vice versa. This assumes a close military alliance between Russia and NATO, or an integration of NATO and CSTO (the Tashkent Treaty has Art. IV, similar to Art. V of the North Atlantic Treaty). However, since this was not an item at the negotiations, NATO viewed the ‘sectorial’ proposal as an *ad lib* designed if anything to be rejected by the opponent<sup>26</sup>.

Nevertheless, Art. V should not be a ‘sacred cow’. It should not be used to impede any reasonable and feasible missile defence cooperation. While there is no military alliance between Russia and NATO, we should enforce the cooperation without making any side totally dependent on the other, but making it a mutually beneficial effort improving the common security. Such has been the nature of an expanding cooperation in the cargo transit for the Afghan mission.

In June 2011 Russian and NATO fighter jets participated in a joint antiterrorist exercise codenamed ‘Vigilant Skies 2011’. The joint exercise relied on two main coordination centres – in Moscow and Warsaw – and local coordination sites in Russia, Poland, Norway, and Turkey. Polish and Russian fighters engaged in the interception of ‘renegade planes’ and escorted them in a common airspace without tying their actions to proverbial sovereignty. One more similar exercise brought together Russian and Turkish fighter jets.

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<sup>26</sup> Editorial note: Washington is still undecided as to what sort of Russian contribution to the European BMD it expects to see. However, it looks like the United States intends to proceed alone. It should be emphasized, that although Euro BMD was declared an ‘adaptive’ programme, Washington was unwilling to allow for any future programme adjustments to respond to new threats and based on the type of cooperation with Moscow. In practical terms, Euro BMD has so far been deployed unilaterally, regardless of Russia’s views and concerns.

The provisions of Art. V do not hinder an exchange of operative information among secret services in the course of antiterrorist and anti-trafficking efforts, neither they hinder maintenance of hundreds of Russian weapons remaining in East European armies, joint development of new aircrafts or large armament contracts (such as Russia's purchase of French amphibious assault ships and technologies). In other words, with the Cold War over, NATO member states and Russia do not assure their security independently.

References to the principles embedded in NATO 60 years ago become devoid of relevance when the case in hand is the shaping up of architecture and combat employment of a combined missile defence system designed to counter new missile challenges. Such a system will function automatically without command and control posts and identify the optimal missile interception instruments regardless of their national identity.

### **Integration of BMD information systems**

As we have mentioned earlier, development and coordination of the layout of integrated information systems might be the first step to cooperation.

A considerable amount of research has been recently made by IMEMO together with the Nuclear Threat Initiative (NTI) and the Brookings Institution.

The Euro-Atlantic Security Initiative (EASI), which has drawn experts from Russia, the US and a number of European NATO nations, has also been involved in intensive targeted studies in the area. On the whole, the authors of the EASI project have formed a steady enough idea about the architecture of a joint European BMD system and the essential initial steps.

Apart from the Russian and US systems and means of early warning, they find it reasonable to augment the architecture with the up-to-date and efficient radars of the Russian A-135 BMD system – Dunai-3U, Dunai-3M and Don-2N which help track down ballistic missiles at a maximum range of 6000 km, as well as track the missiles and target antimissiles – and the radars that the US plans to deploy in Europe.

Another important issue is finding a compromise solution in response to Russia's demands to get legal guarantees that the European BMD will not be directed against Russian nuclear deterrence forces.

Such a compromise could involve a phased approach of building the European BMD agreed by Russian, American and European experts in the completed EASI study presented at the Munich Security Conference in February 2012<sup>27</sup>. See the architecture options in Diagrams 1 through 3.



**Diagram 1. Phase 1, 2011**

Russian sites are shown in red. The US/NATO sites are in blue.

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<sup>27</sup> *Missile Defense: Toward a New Paradigm*, EASI (Moscow, Brussels, Washington, Feb. 2012).



**Diagram 2. Phase 2, 2015**

Russian sites are shown in red. The US/NATO sites are in blue.



**Diagram 3. Phase 3, 2018**

Russian sites are shown in red. The US/NATO sites are in blue.

The BMD architecture suggested by the experts does not provide for the deployment of US ships equipped with BMD systems in the Baltic, Black and Barents seas.



The diagrams do not show any US ships carrying BMD systems deployed in the Baltic, Black and Barents seas which have raised a lot of concern in Russia. Official endorsement of the architecture would resolve the issue of the Russian concerns regarding the European BMD targeting Russian nuclear deterrence.

Such could be a potential joint BMD system. In the meantime, however, a compromise solution could involve building two separate BMD systems and coordinating their operation. That would require two new joint BMD facilities, one of which is a Data Integration Centre for Russian and NATO radars and satellites, and the other would be a Centre staffed with Russian and NATO officers working around the clock to plan and coordinate the operation of the two BMD systems.

The first Centre is essentially a revisited joint decision of Russian and US Presidents made back in 1998 to establish a JDEC, which fell a little short of full commissioning at the time for various minor reasons. One of the reasons, as far as we know, was the United States' intention to filter out some of the data from its national early warning systems.

The challenge of filtering out the data should be addressed under the new conditions. Certainly, the false alarms from the warning systems could be filtered out separately in the mission control centres. At the very least, the sides would need to coordinate the data filtration algorithms before the data is forwarded to the joint centre. However, it seems more reasonable to filter the data from the early warning systems at the joint centre, even though it would mean handling large volumes of false alarms. It is far more important to detect the actual missile launch than process massive amounts of false alarms.

The US considered establishing a 'virtual' JDEC as opposed to the initially agreed physical centre. Instead of joint Russian and American teams, the proposed procedure would involve data exchange between the national teams over a secured Internet link. Regarding such 'virtual' centres, there are certain cons and pros. Still, from the point of view of the information reliability and exclusion of any confusion, as well as from the political perspective, the reinvigorating the physical JDEC would still be the best option.

Another crucial area of cooperation would be resuming the suspended series of Russia–US and Russia–NATO computerized exercises on the theatre BMD with a subsequent expansion beyond

the boundaries of a theatre system. Nine training sessions were held in Russia–US and Russia–US–NATO formats. It is important now to breathe new life into the practice that helped achieve success in streamlining the definitions and the compatibility of information systems and interception instruments. Long breaks in these exercises and analytical work lead to a loss of the accumulated experience, as specialists start leaving, contacts are lost and new technologies appear. Along with this, it certainly makes sense to hold joint research to ensure a transition from the computer aided to full-fledged command staff exercises and a subsequent use of actual Russian and US BMD systems at Russian testing ranges.

Russia has a well-developed chain of testing grounds with a network of radars, opto-electronic and telemetric stations, which is non-existent in Europe. Such a programme should be pre-empted by a joint initial study involving the experts from Russia, the US and other NATO member states.

\* \* \*

To summarize:

1. None of the deployment phases of the planned European BMD jeopardizes the Russian nuclear deterrence. We should not discount an insignificant decline in the nuclear deterrence against European NATO member-states at the moment when ground- and sea-based European BMD units will develop information and interception capabilities to destroy ICBMs. Nevertheless, a Russian nuclear counter-strike at the European targets would be absolutely unacceptable for the United States and its allies.

2. Iran has been actively pursuing its national ballistic missile programme. Tehran made an unexpected breakthrough in the solid fuel missile technology, and simple improvement of the structural materials would extend the range of Sejil-2 to 3500 km. Even liquid fuel missile technologies available since 1950s and 1960s could produce 5000 km flight range missiles. The time Iran will need to develop a long range ballistic missile is comparable to the time to deploy the European BMD.

3. Considerable opportunities for the cooperation between Russia and the US/NATO remain in the field of missile defence information tools. The first step could be the integration of Russian



and American early warning radars and missile defence radars deployed in Russia and European NATO member states. Therefore, it would be reasonable to set up two joint centres in Moscow and Brussels to integrate the data from the Russian and NATO radars and satellites for global monitoring of missile launches and early warning of the missile attacks in real time. Another centre staffed with Russian and NATO officers would plan and coordinate the operation of both BMD systems.

4. A compromise solution to the issue of legally binding guarantees that the European BMD will not be directed against Russian nuclear deterrence can be made based on the proposed joint European BMD architecture agreed by the joint team of Russian, American and European experts within the framework of the EASI sponsored project. The proposed architecture features only Russian ships with BMD systems deployed to the Baltic and Black seas and the Arctic Ocean. Official endorsement of the architecture will resolve Russian concerns that the European BMD would be directed against Russian strategic nuclear deterrence.

5. The suspended series of joint computerized exercises with the US and NATO on the theatre BMD would be reasonable to expand beyond the boundaries of the theatre system and switch to physical joint exercises of actual Russian and US BMD systems. It is important now to breathe new life into the practice that helped achieve success in streamlining the definitions and the compatibility of information systems and interception instruments.

6. Russian fears that the agreement on the cooperation in the information exchange would essentially give the US and NATO a carte blanche to deploy the European BMD with no regard for Russian interests, are unsubstantiated. In fact, the alternative would be even worse: the US and NATO would deploy the European BMD and the global missile defence system completely defying Russian concerns. Russia's participation in the information exchange would enable it to coordinate and avoid any undesirable elements in the European BMD.

7. If Russia adopts a policy of cooperation in setting up a joint BMD system, it may become a breakthrough in the strategic partnership between the two nuclear superpowers and leading European NATO members, including the nuclear weapon states. The cooperation can expand to other aspects of security, contributing to the overall architecture of Euro-Atlantic security. Such cooperation

could be crucial in a constructive transformation of the mutual nuclear deterrence and potentially lead to its eventual eradication. The mutual nuclear deterrence is useless in the new system of military-political relationship between Russia and the US/NATO and does not meet security challenges arising in a new international environment, twenty years after the end of the Cold War.

### **3. EVOLUTION OF THE MTCR AND BMD: REGIONAL ASPECTS**

Sergey OZNOBISHCHEV

Missiles and missile technology proliferation poses a dynamically growing threat to the global stability. The facilitating factors include unresolved issues of regional and international security and the view of missile club membership as a sign of a higher international status. The threat of missile proliferation became especially acute when missiles became capable of delivering nuclear payload. The major way to acquire a missile arsenal for a state unable to engineer and domestically produce its own missiles is to purchase missile systems, ballistic and cruise missiles from importing states.

#### **Major trends in the development of missile capabilities**

There are a few fundamental factors encouraging a wide range of states to obtain missile systems. Sadly, we have to admit that such factors tend to grow in number and importance.

Recently, the major concerns have been deteriorating security at the regional and international levels, persistent interstate tensions and military and political environment that encourages procurement, development and upgrade of missile systems. National leaders view even a short-range missile system as an extra tool to ensure state sovereignty and, in certain circumstances, as a way to gain military superiority at the regional level.

Besides, nuclear-armed missiles would effectively mean a nuclear capability which some states unable to build their own modern military power, view as some sort of an 'equalizer' to op-

pose far more sophisticated military forces of advanced states. Various regimes have chosen this path also because those pursuing even limited nuclear capabilities or just being suspected of that receive special attention from leading world powers and can use it as a bargaining chip in political or other types of negotiations.

Nowadays governments can fairly easily obtain available missile systems and technologies, as well as get access to the information and skills to build a missile system. In addition, we would like to note that existing nuclear and missile non-proliferation regimes are not efficient enough and there are loopholes for those who want to create national missile systems.

These factors impede the efforts to curb capabilities of states to design and distribute missile systems and technology, make such non-proliferation regimes universal and turn them into legally binding multilateral agreements.

As a result, over a short period of time many states have got an opportunity not only to import missiles and missile technologies but also to advance further into building their own missile engineering and production bases. Various states joined lasting missile technology cooperation networks.

In addition to the five NPT-recognized nuclear weapon powers, Argentina, Egypt, India, South Korea and Turkey actively pursue national missile programs. Brazil, Iran and Israel which used imported missile technologies at the early stages of their pursuits, develop fairly independent programmes affecting other national programmes.

North Korea, in addition to significant progress in missile engineering, became an exporter of missile systems and technologies, offering so-called base programmes customized for other nations' needs. North Korean programme had been directly involved with the missile programmes in Iran, Libya, Syria and a few other states.

Spain and Taiwan pursue 'fairly independent' missile programs. They use mainly their own resources and export certain key missile technologies.

'Dependent' missile programmes have been pursued in Egypt, Libya (until 2011), Pakistan, South Africa and Syria. Successful deployment of missile systems in these countries entirely depends on the advances of other nations' missile programmes.

Neighbouring states are naturally concerned with the active creation and proliferation of missile capabilities. Regional and international communities are concerned with the combination of missile delivery capacity and nuclear weapon's possession or ambitions. Furthermore, when these two factors are enhanced by provocative and unpredictable carpet-beggary of the military and political elites, the international community views such states as a direct threat to international peace and security.

This is exactly the situation North Korea found itself in the 1990s with Iran following the suite in the early XXI century. Political turmoil over the North Korean and Iranian nuclear programmes became a persistent problem for the international stability with an imminent potential to grow into a military conflict with repercussions for the entire international community.

The situation over the Iranian case has been a recurrent stumbling block in the relations between Russia and the United States and other Western countries.

The expanding missile programmes – fast, fairly accurate and survivable delivery platforms – make the nuclear capacities of North Korea and Iran particularly horrifying. So far, the North Korean and Iranian missiles are limited to a 2000 km range. However, both Pyongyang and Teheran will be further developing their missile programmes. All the more so as the painfully created but fairly lax international non-proliferation regimes dealing with missile technologies cannot perform their main ‘restraining’, let alone ‘prohibitive’ mission.

### **Enforcement of the MTCR**

Massive development of missile systems and associated technologies in the last decade of the XX century led to collective efforts to restrain the process. The missile technology control regime (MTCR) was adopted in 1987 and currently includes 34 states<sup>28</sup>.

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<sup>28</sup> The MTCR is an informal and voluntary regime of military export controls. The purpose of the regime is to limit the proliferation of weapons of mass destruction through a set of controls of delivery systems, i.e. ballistic missiles (BM).

However, the states with political and military ambitions, which raise the most concerns, have not yet joined the regime. The MTCR is inefficient because it is not legally binding and is a purely voluntary observance of regime regulations by the states which share missile non-proliferation objectives.

The main goal of the MTCR Guidelines is ‘to limit the risks of proliferation of weapons of mass destruction... by controlling transfers’. The Guidelines ‘are also intended to limit the risk of controlled items and their technology falling into the hands of terrorist groups and individuals’<sup>29</sup>.

The restraints are applied to the items included in the Annex to the Guidelines, and all such transfers are considered on a case-by-case basis. National governments use these Guidelines according to the national legislation.

The MTCR logic of restraint is based on each state observing the lists of the nationally controlled items which are correlated to the agreed Annex regularly updated at the plenary meetings. In general, the MTCR is based on the states’ voluntary observance of the listed and non-listed export definitions. It is obvious though that other members of the MTCR may not necessarily share the same views on such definitions as assessments of the importer’s missile and space programmes. Consequently, actual implementation of MTCR restraints often causes sensitive conflicts over the exports nature and purpose.

Other deficiencies have also been identified over the quarter century while the regime has been in place. Thus, not all states provide the information on the national export restraining lists in complete and timely manner. The adjustment of these lists to the decisions made at MTCR meetings often takes too long. Besides, there are often tangible differences between how the states interpret and implement the decisions.

Eventually, the regime failed to prevent many states from getting the access to missile technologies, mostly the states whose policies cause a lot of international concern – Iran, Iraq (previously) and Syria. Moreover, there is a whole list of states that have repeat-

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<sup>29</sup> ‘Guidelines for Sensitive Missile-Relevant Transfers’, <[www.vertic.org/assets/nim\\_docs/MTCR%20Documents/Guidelines/MTCR%20Guidelines%20\(en\).pdf](http://www.vertic.org/assets/nim_docs/MTCR%20Documents/Guidelines/MTCR%20Guidelines%20(en).pdf)>.

edly violated the regime. However, the violators have not been punished in any way.

Only 34 states – less than the sixth of all states in the world, acceded to the MTCR in over two decades of the regime's existence, with the last state to accede – South Korea – joining the regime over ten years ago.

The efforts to improve the regime are fairly limited and superficial. They failed to prevent an 'explosive' proliferation of missiles and missile technologies. Prior to the 25th annual MTCR meeting in Buenos Aires (Argentina, 11-15 April 2011), experts and politicians criticized the inefficiency of the regime, and the final document just stated 'the intention to continue intensive efforts' to encourage more states to accede to the regime<sup>30</sup>.

The obviously unfavourable situation around missile proliferation became one of the reasons why MTCR members initiated a 'Hague Code of Conduct against Ballistic Missile Proliferation' in November 2002 in Hague. Over 120 states are signatories to the Code. Unlike the MTCR, the Code does not enforce any technical restraints and is more of a political document.

In spite of the international efforts, none of the existing international legal regimes is able to ensure efficient non-proliferation of missiles and missile technologies. The case in point is the expansion of missile capabilities of Iran and North Korea – a growing security threat in the respective regions and worldwide. The MTCR needs a substantial improvement, which can only be achieved with a considerable breakthrough in arms control and enhanced political cooperation between the leading states.

### **Regional BMD systems and their development**

The active expansion of regional BMD systems is directly linked to intensified efforts of various states to create and upgrade their national missile capacities (often those states already possess or aspire to obtain nuclear weapons) in combination with an evident inefficiency to restrain such efforts. This situation is further aggra-

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<sup>30</sup> 'Plenary Meeting of the Missile Technology Control Regime', 13-15 Apr. 2011, <<http://www.mtcr.info/english/Press%20Release%20April%202011.html>>.

vated by inefficiency of international and regional peace and security institutions.

This is especially relevant for the volatile regions. Thus, the situation forms a brand new adverse trend. Its elements are closely interrelated and become increasingly important for politicians and the military.

There are a few regions in the world where there is a clear link between the expansion of missile programmes and the efforts to build missile defence systems. Such links are the most evident in the following countries<sup>31</sup>:

- Iran's efforts to build (nuclear) missile capabilities spur Israel's as well as, recently, Gulf States' BMD programmes<sup>32</sup>;
- North Korea's nuclear missile developments force South Korea and Japan to build their missile defences;
- Traditional rivalry with China and latter's missiles and nuclear weapons force Taiwan to develop national BMD programme;
- Instability and uncertainty of missile capabilities worldwide make the states even outside conflict areas (such as Australia) build their missile defence potential.

India's BMD system could be a unique issue, because it would affect the regional strategic balance. India's missile defence plans are stimulated by Pakistani and Chinese nuclear and missile potentials.

Israel's Iron Dome missile defence system was created to defend against unguided missiles launched from neighbouring Arab states. This system was entirely engineered and manufactured in Israel (by Rafael Advanced Defense Systems), and is essentially a tactical BMD to defeat unguided missiles at the range between 4 to 70 km. Structurally, the Iron Dome is a multi-level system designed to intercept unguided Qassam missiles and missiles of multiple rocket launchers.

Standard Iron Dome battery consists of battle management and control unit and three launchers, each carrying 20 Tamir interceptors<sup>33</sup>. The interceptor destroys a missile at the apogee point,

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<sup>31</sup> Priorities in the list are based on the author's perception of how realistic is a scenario of latent tensions transforming into an armed conflict.

<sup>32</sup> The issues of the European BMD as a response to the growing Iranian missile threat are reviewed in detail in other chapters of the volume.

<sup>33</sup> <<http://lenta.ru/articles/2008/03/24/irondome>>.



thus mitigating potential contamination in event the missile has been armed with chemical or biological warhead.

The first two Iron Dome units were deployed in March–April 2011 near Ashkelon and Beersheba to intercept missiles launched from Gaza. During the barrages of Israel territory in April 2011, the Iron Dome intercepted and destroyed all of eight launched Grad missiles<sup>34</sup>. The third Iron Dome unit was deployed in September 2011 near Ashdod<sup>35</sup>.

Iran's efforts to expand and improve its missile capacities force Israel to upgrade its missile shield. Therefore, Israel has cooperated with Boeing to develop a project based on Israeli Arrow missiles.

This missile has a defence capability at a significant range (up to 90 km) and altitudes (50 km for Arrow-2). The more advanced and highly manoeuvrable Arrow-3 interceptor, which is still in the design stage (in July 2010 the USA and Israel signed an agreement on designing and deploying the system), will be able to reach twice the altitude of Arrow-2<sup>36</sup>.

The US Missile Defense Agency and Israel's Ministry of Defence jointly manage the project. Israel deployed the first Arrow-1 battery on 14 Mar. 2000 and the system has been continuously improved.

For 2011 the US Congress earmarked \$US 422.7 million to create Israel's BMD based on Arrow missiles – twice the 2010 spending. The Israel Missile Defence Organization and the US Missile Defense Agency conducted successful Arrow-3 tests which, according to experts, were based on a realistic combat scenario<sup>37</sup>.

Six Gulf nations (Saudi Arabia, the UAE, Qatar, Oman, Bahrain, and Kuwait) are in consultations with the USA to create a common BMD designed to send a 'strong message' to Iran. This statement was made by Sheikh Khalid ibn Ahmed Al Khalifa, Bahrain's foreign minister.

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<sup>34</sup> 'Statistics of Israel's rocket barrages from Gaza', 7 Apr. 2011, <<http://www.newsru.co.il/mideast/07apr2011/kipat510.html>>.

<sup>35</sup> 'Israel deployed third Iron Dome', <<http://lenta.ru/news/2011/09/01/pro>>.

<sup>36</sup> 'Israel's Arrow Theater Missile Defense', 22 Feb. 2011, <<http://www.defenseindustrydaily.com/israel-successfully-tests-arrow-theater-missile-defense-01571>>.

<sup>37</sup> Ibid.

Initially, the parties plan to deploy a common radar system and organize a data exchange system. Saudi Arabia and the UAE have already installed Patriot BMD systems. The common missile shield is primarily intended to defend oil fields and terminals against potential missile strikes. ‘We have no other threat but Iran, – stated Bahrain’s foreign minister. – Our agreement will be a strong message to Iran’<sup>38</sup>.

The North Korean nuclear programme and missile tests spur South Korean efforts to build its own missile defence system. Both South East Asia and the whole world have become hostages to Pyongyang’s missile and nuclear ambitions.

Major partners of South Korean BMD programme are the United States with its cutting edge technologies, and Japan. Certainly, recognizing North Korean missile challenge, Washington views Seoul as the key ally and confirms its commitment to maintain partnership to ‘strengthen South Korean BMD capabilities’<sup>39</sup>.

Proximity of the two countries and therefore a short flight time create a military and technical problem. This is the reason why in 2012 South Korea was expected to complete the unified monitoring, early warning and target detection system. Its purpose is round-the-clock surveillance of North Korean missile launching units, threat assessment and BMD early warning during the wartime.

The South Korean BMD is primarily based on the US PAC-3 missile systems. In 2011 the country purchased 48 more missile systems to adjust the existing national missile force.

The plans include a purchase of 46 Standard SM-2 Block 3A missile interceptors and 35 SM-2 Block 3B interceptors<sup>40</sup>. These missiles are deployed at KDX-II (Korean Destroyer Experimental) and KDX-III destroyers.

Consistent improvement of North Korean missile potential and ballistic missile tests are a powerful boost for Japan’s BMD. Tokyo expresses deep concerns every time Pyongyang test fires its missiles. Thus, following the North Korean missile test in 2006, Ja-

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<sup>38</sup> ‘USA and six Gulf nations will create a common missile defense system’, <<http://www.itar-tass.com/c1/384866.htm>>.

<sup>39</sup> <<http://iipdigital.usembassy.gov/st/russian/texttrans/2011/09/20110908160540x0.5669476.html#axzz1gqzEEtu6>>.

<sup>40</sup> ‘Raytheon’s Standard Missile Naval Defense Family (SM-1 to SM-6)’, 16 Nov. 2011 <<http://www.defenseindustrydaily.com/raytheons-standard-missile-naval-defense-family-updated-02919/>>.

pan immediately introduced economic sanctions against North Korea, banned North Korean officials from entering Japan and suspended the food aid. Japan alerted its Self-Defence Forces and enhanced MBD development.

From the inception phase the Japanese BMD programme was designed for a close cooperation with the United States. Washington views Tokyo as ‘a leader in BMD and one of the United States’ closest BMD partners’<sup>41</sup>.

The first stage of the Japan’s BMD was commissioned in March 2009<sup>42</sup>. It comprised of two Congo destroyers carrying Aegis BMD systems and Standard SM-2 Block 1A interceptors with a 300 km range and 70–250 km altitude<sup>43</sup>.

According to existing plans, in 2012 Japan’s missile defence will have four BMD-equipped Congo destroyers, as well as 16 Patriot PAC-3 missile batteries, and 11 aerospace radar units.

The joint US-Japan project will take nine years and total investments of \$2.1–2.7 billion.

Japan plans to deploy national BMD facilities based on enhanced interceptors in 2018. According to expert sources, Japan will have the capabilities to intercept intermediate-range missiles (IRBM).

As it was mentioned earlier, Taiwan is also working towards building a national BMD shield, which is primarily spurred by its historic rivalry with China. Taiwan’s current three PAC-2 and PAC-3 batteries are deployed around the capital. However, the experts have not reached yet the final agreement on the level of future missile defence for residential, industrial and military facilities.

In 2010, Taiwan purchased seven new PAC-3 batteries and upgraded the existing three batteries. Assuming that each battery carries 128 PAC-3 missiles, the total capabilities of Taiwan’s missile defence could be very impressive if we disregard potential standoff with China’s military potential.

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<sup>41</sup> <<http://iipdigital.usembassy.gov/st/russian/texttrans/2011/09/20110908160540x0.5669476.html#axzz1gqzEEtu6>>.

<sup>42</sup> Mikhaylov, A., ‘Missile shield of the land of the rising sun’, <<http://www.vko.ru/DesktopModules/Articles/ArticlesView.aspx?tabID=320&ItemID=470&mid=893&wversion= Staging>>.

<sup>43</sup> Esin, V., ‘Japan’s missile shield: current status and the outlook’, <[http://nvo.ng.ru/realty/2009-04-03/3\\_japan.html](http://nvo.ng.ru/realty/2009-04-03/3_japan.html)>.

Regarding the sale of Patriot missiles to Taipei, the US Defense Security and Cooperation Agency's press release emphasized that 'the recipient will use the enhanced capability as a deterrent to regional threats'<sup>44</sup>. The combination of a powerful US deterrent potential and the United States commitment to support Taiwan in event of a conflict, makes the development and modernization of Taiwan's missile defence a lot more convincing.

The growing missile threat in Southeast Asia made Australia consider pursuing its own national missile program. In 2009, the country's Navy tested the first of three planned air defence destroyers carrying Aegis interceptors, which could be potentially modernized and function as an element of national BMD system.

Australia became one of the first US BMD partners in the region after signing in 2004 a Framework Memorandum of Understanding on BMD cooperation. Washington and Canberra continued bilateral consultations on the future cooperation in BMD. During the Australia-United States Ministerial (AUSMIN) consultations held in September 2011 in San Francisco, Canberra reaffirmed the commitment to cooperate with the United States in creating the national BMD system.

Australian defence concerns explain the nature of the missile defence efforts on the fifth continent. As a contribution to the future BMD Australia modernized the radar near Jindalee capable of detecting air and sea objects at the range of 3000 km from the Australian coast and monitoring the area across 37 000 km<sup>2</sup>, which demonstrates, among others, the need to 'detect missile launches from Asia'<sup>45</sup>.

India's missile defence programme is worth special attention due to the current geopolitical situation in the region. The country first voiced its intentions to pursue a missile defence programme in early 2009.

Unlike other missile defence programmes and developments we reviewed earlier, Delhi has been developing its system in se-

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<sup>44</sup> 'Defense Security Cooperation Agency News Release. Transmittal No. 09-75' <[http://www.dsca.mil/PressReleases/36-b/2010/Taiwan\\_09-75.pdf](http://www.dsca.mil/PressReleases/36-b/2010/Taiwan_09-75.pdf)>.

<sup>45</sup> 'Missile Defense Advocacy Alliance', <<http://www.missiledefenseadvocacy.org/web/page/672/sectionid/557/pagelevel/3/interior.aspx>>.

crecy. Informed sources have to admit that Delhi does not publicly discuss the purpose and architecture of the future missile defence<sup>46</sup>.

According to the available information, India sourced some missile technologies and interceptors from Israel. However, Washington vetoed Tel-Aviv's request to sell Arrow missiles to India, arguing that they contained elements engineered in the United States. Recently there has been an extensive discussion regarding potential BMD cooperation with NATO.

Since November 2006, India has conducted a series of largely successful tests, including exo-atmospheric tests, which is viewed as an intention to intercept incoming ballistic missiles. This comes as no surprise, considering the India's potential opponents in the region.

However, the time of the deployment has been deferred, because not all of the tests were successful (some of the tests involved real targets). Despite the complications and uncertainties, the head of India's Defence Research and Development Organization (DRDO) maintained that the first Indian national missile defence units would be deployed in 2012, and the system was expected to be fully functional in 2016. The system is expected to include both ground and navy components<sup>47</sup>.

According to the DRDO, India set the goal to create a missile shield surpassing other BMD systems in the region and develop a capability close to a strategic BMD. Thus, the first stage is supposed to deploy a system capable of intercepting 2000 km range missiles.

In future, Delhi plans to obtain the capacity to intercept missiles having range up to 5000 km<sup>48</sup>. This will make Delhi capable of intercepting strategic targets.

The final architecture, nature and time of deployment of the Indian BMD are still not clear due to the aforementioned reasons and technical challenges. It is obvious that the future system will be largely designed for strategic nuclear deterrence, which has been confirmed by the statement of DRDO's V. Saraswat on the plans to

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<sup>46</sup> Cohn, N., 'India's Ballistic Missile Defense Options', *Pakistan Defence*, 17 Dec. 2010.

<sup>47</sup> Samson, V., 'India's missile defense/anti-satellite nexus', 10 May 2010, <<http://www.thespacereview.com/article/1621/1>>.

<sup>48</sup> Ibid.

create a BMD in the context of India's declared nuclear no-first-use policy<sup>49</sup>.

So far, China has not officially confirmed its intentions to build a missile defence system, but has already tested missile interceptors. Moreover, Beijing has consistently been supporting Russian stance on missile defence issues at the international level.

Essentially, there are two major points of such support: any plans to design and deploy new missile defence systems undermine stability and international security; the United States' withdrawal from the Anti-Ballistic Missile Treaty was a serious blow to strategic stability and new ABM restrictions would be very welcome.

China refrains from creating a theatre missile defence system feeling fairly confident from the military point of view.

The situation can change dramatically if the international community fails to prevent proliferation of nuclear weapons, delivery vehicles and missile defence systems. It is entirely possible that, as early as this decade, China will change its mind and will view a missile defence programme as an integral part of its national security.

There is a good reason to believe that a mere declaration on China's part of its intention to create a theatre missile defence will create a powerful negative impact at the strategic level, and the world will perceive it as a first step towards building a strategic missile defence programme. Beijing can potentially (and possibly simultaneously) upgrade its nuclear and missile potential. India's development of a more sophisticated missile defence can be an effective incentive for that course of action.

These examples illustrate a close link between the proliferation of missiles and missile technologies, inefficiency of the MTCR and expansion of regional missile defence programmes. The analysis of BMD development trends and potential restraints of regional missile potentials clearly shows the clear interdependence between regional missile defence programmes and the growing national missile potentials in some regions.

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<sup>49</sup> Zeenat, R., 'Indian Pursuit of Ballistic Missile Defence Programme – Analysis', Eurasia Review Newsletter, 31 Mar. 2011, <<http://www.eurasia-review.com/31032011-indian-pursuit-of-ballistic-missile-defence-program-analysis>>.

Such interdependence is evident both regionally and globally. As an example going beyond regional level, Russia plans to expand its missile and nuclear potential to respond to the European BMD deployed by NATO<sup>50</sup>.

Another significant factor encouraging the expansion of regional missile potentials and missile defence programmes were the actions of the United States and their allies in Iraq, Libya and Syria, undermining fundamental principles of international law, documented in the UN Charter, with regards to the respect of national sovereignty, territorial integrity and non-interference in domestic affairs.

Understanding of the aforementioned links, factors and trends is vital for reinforcement of the missile and nuclear non-proliferation regimes and prevention of an arms race at the regional and global levels.

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<sup>50</sup> For more detail, see Dvorkin, V., 'Key aspects of cooperation between Russia and USA/NATO over missile defiance: challenges and opportunities' in this volume.

#### 4. ANTI-MISSILE DEBATES: TWO TRENDS IN RUSSIAN EXPERT COMMUNITY

Alexandre KALIADINE

In recent years, the danger of the proliferation of missile and nuclear weapons and of the seizure of weapons of mass destruction (WMD) by terrorist networks has stimulated public interest in ballistic missile defence (BMD).

Defence against missile threats which may come from outside Europe was a huge subject of discussions at the summit of the Russia-NATO Council (RNC), held in Lisbon in November 2010. The summit adopted a Joint Statement, in which leaders of 29 states – members of the RNC endorsed the Joint Review of 21st Century Common Security Challenges. They agreed (among other things) ‘on a joint ballistic missile threat assessment and to continue dialogue in this area’, ‘to resume Theatre Missile Defence Cooperation’ and ‘to develop a comprehensive Joint Analysis of the future framework for missile defence cooperation’.

However, the USA and its allies dismissed the approach advanced by Moscow: to work together to create a missile defence system of the European continent<sup>51</sup>. This approach assumed, in particular, a full-fledged Russian participation in the European Phased Adaptive Approach (EPAA), worked out by the Obama administration and approved by the North Atlantic Treaty Organization (NATO)<sup>52</sup>.

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<sup>51</sup> Moscow proposed establishing a sector-based joint missile defence system in which each side (Russia and NATO) would be fully responsible for its own zone.

<sup>52</sup> The administration of President Obama has dropped the previous administration's plan, which envisaged the deployment of strategic BMD facilities



In 2011–2012 the discussions within the RNC framework on the issues of the European BMD continued against the background of the controversy between Russia and the USA over plans to develop and deploy new missile defence architecture.

### **Lingering strategic uncertainties**

At a meeting of the RNC, held in Brussels on 9 December 2011 and attended by foreign ministers, the diplomatic impasse over missile defence was not broken. The members of the RNC failed to agree on an agenda of cooperation on BMD in the work programme of the RNC for 2012.

Washington did not drop its objections to the Russian proposal to build a joint missile defence system of the European continent. Moreover, distrust between Russia and NATO states deepened as the USA carried forward the EPAA plan and implemented it with no regard for concerns of the Russian Federation<sup>53</sup>. These develop-

in the Czech Republic (ABM radars) and in Poland (10 interceptor missiles such as GBIs), in 2011–2012. Instead, in October 2009, the Obama administration decided on a new four-phased architecture of a ballistic missile defence shield in Europe to protect the USA and allied NATO ‘from the growing threat posed by the proliferation of ballistic missiles’. The emphasis was shifted to intercept intermediate-range and shorter-range missiles. The new missile defence architecture provides for the stationing of a number of facilities in Europe: a ground version of the SM-3 missiles, forming the basis of a BMD system, to be deployed by the USA in (and around) Europe; X-band radar (cm) and ships equipped with Aegis (a multi-purpose anti-missile system) in the seas and oceans. In accordance with ‘the four-phased adaptive approach’ it is planned to modernize interceptors and, in particular, to make them capable (during the fourth phase, around 2020), of hitting also intercontinental ballistic missiles (ICBM). Officially, the EPAA plan has been tasked to protect member states from ‘a small number of relatively simple missiles from the south’ (to provide protection for the US forces, allies and partners in Europe against ballistic missile threats from the Middle East, in particular from Iran). In November 2010, the NATO summit in Lisbon decided to pool the existing national ABM components of the member states and the US ABM facilities to be deployed in Europe. It is assumed that the NATO joint ABM system will reach a state of full operational readiness in 2018. The Russian leadership has expressed concerns about the direction and potential of the EPAA plan, in particular, of its fourth phase. Moscow argued that its implementation would be directed against the RF and threaten Russia’s nuclear deterrent.

<sup>53</sup> In this connection, it is worthwhile to mention a number of practical measures taken in 2011–2012. In March 2011 a warship equipped with the Eegis

ments were perceived in Moscow as creating for Russia a situation of considerable strategic uncertainty.

The EPAA plan is an open-ended project. Most likely it does not end up as the protection from Iranian missiles<sup>54</sup>. The EPAA developers and customers will surely seek to maximize efficiency by taking advantages of the budgetary and technical opportunities.

By moving forward the EPAA project, Washington, apparently, expects to gain additional leverage over the policies of its European allies and tie them more closely to US global strategy. From the US perspective this undertaking is an opportunity to breathe a new life into the Alliance and strengthen it by providing a concrete unifying project. In addition, it is implied that American military corporations will be privileged beneficiaries of contracts for building the EPAA BMD facilities.

ABM system was sent to the Mediterranean Sea. In September 2011 the USA signed an agreement with Rumania to host on its territory a base comprising SM-3 interceptors 'to protect the Southern Europe against intermediate-range and shorter-range missiles'. (It is assumed that the base will be operational in 2015). On 15 September 2011 an agreement between the USA and Poland entered into force. The agreement provides for the deployment of the ground-based version of the Standard-3 missile interceptors on the Polish territory. It is assumed that on the completion of their deployment by 2018 the base would provide 'protection for all the European NATO states'. In 2020 these anti-ballistic missiles are to be replaced by more advanced interceptors. In September 2011 the USA concluded an agreement with Turkey on the stationing of an early warning radar on the Turkish soil near the city of Malatya. In October 2011 the USA agreed with Spain to base its four warships equipped with Eegis ABM system in the Spanish port Rota. The stationing of the American warships equipped with Eegis ABM system in the seas adjacent to the European continent was perceived in Moscow as moves directed against Russia's Strategic Nuclear Forces (SNF). After 2018 the EPAA plan provides for the deployment in Rumania and Poland of 48 advanced missile-interceptors SM-3Block 2B, possessing 'limited capability' of intercepting Iranian ICBMs. An undetermined number of such interceptors are to be deployed on cruisers and destroyers in the US Navy. In the opinion of some experts the deployment of 48 missile interceptors in Poland and Rumania would not change the situation of mutual assured destruction. See: Rogov, S., 'Russia and the United States: is new confrontation inevitable?', *Nezavisimoye Voennoye Obozrenie*, 17-23 Feb. 2012, pp. 4-5.

<sup>54</sup> From Moscow's perspective, the scale of European BMD planned by 2020 significantly exceeds the anticipated Iranian missile challenge. However, in the opinion of some authoritative specialists, the Iranian potential for the production of long-range missiles is developing sufficiently dynamically and an estimated time Iran needs to produce a long-range BM is consistent with the timeline of the European BMD deployment.

The EPAA scheme may have an additional mission – to increase the degree of uncertainty for Russian military planners.

One can observe a curious coincidence: at a time when the United States and its European allies entered a phase of considerable financial troubles<sup>55</sup>, steps were taken which may provoke Russia (with its largely balanced federal budget) to undertake considerable wasteful expenses.

It looks as if Russia encountered a remake of the information and strategic bluff associated with the Strategic Defense Initiative (SDI) advanced by the Reagan administration in the 1980s<sup>56</sup>.

It is true that the EPAA implementation, unlike the past, has not been accompanied by overt intimidations and sabre-rattling. Moreover, NATO documents indicate that the deployment of the ABM facilities under the EPAA plan in the European countries is not directed against Russia's nuclear deterrent capability. Willingness is expressed to cooperate with Russia, (although only in the field of limited information exchange).

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<sup>55</sup> For the last four years, the US federal budget deficit has exceeded the mark of \$900 billion. In 2012 it came to amount to \$1.33 trillion. In 2011 the Obama administration revealed its plans of managing the budget deficit and, in particular, of cutting the US military expenditure by \$400 billion up to 2023, including by \$300 billion - through the reduction and closure of various military programmes. The updated US military strategy, made public in early January 2012, aims to reduce the expenditure on programmes related to the presence of US forces in Europe and nuclear arms. See: *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, January 2012). In 2012 US expenditures on BMD amounted to 1.5% of the Pentagon budget and to 5.5% of the expenditures on development and procurement of new weapons and military equipment. According to experts, these figures represent the maximum volume of resources that the nation can afford to spend for these purposes under the condition of the budget crisis. European allies burdened with huge public debt had also been forced to review and curtail their military programmes.

<sup>56</sup> On 21 March 1983 President Ronald Reagan announced the SDI, aimed at creating an impenetrable missile shield with space-based elements, providing for 'a fist strike' capability. At that time the Soviet leadership unwisely dismissed statements of American politicians and experts corroborating the conclusion that the SDI was primarily a ploy to exhaust and undermine the Soviet economy, by trapping the country into back-breaking expenditures. Indeed, the Soviet leaders were scared and increased military spending. The Soviet economy was bled white by a senseless arms race which incidentally was one of the causes of the Soviet Union's disintegration. As far as the US administration is concerned, it discontinued the works under the SDI programme as strategically inappropriate and economically wasteful.

Uneasiness in Russian expert community is fuelled rather by understatements, misleading omissions, ambiguous moves. Thus, Washington has been unwilling to fix firmly the quantitative and qualitative parameters of the EPAA project and make them consistent with the officially proclaimed mission of managing ‘the threat posed by the proliferation of ballistic missiles’ and to fasten the link between the solution of the Iranian nuclear-missile problem and the implementation of the fourth phase of the EPAA plan.

Incidentally, it would not have been extremely difficult for the USA to address Russian concerns about the EPAA plan. Suggestions have been advanced by experts both in Russia and the West on such configurations of the European BMD that effectively cope with the missile threat from ‘the third countries’ without giving ground for conflicting interpretations of the officially professed mission of the EPAA plan. (For example, by assuring that the number of new missile interceptors, their speed and locations are compatible with the declared EPAA objectives).

Refraining from provocative deployments of ABM facilities on the warships operating in the Arctic Ocean, Baltic and the Black seas could also helped to assuage Moscow’s preoccupation with the EPAA project. Although this project contains in its title the word ‘adaptive’, Washington has demonstrated unwillingness to provide for any change of the original scheme in the future (For example, to anticipate modifications in responding to the evolution of the missile threat or to the development of cooperation with Moscow).

Alternative proposals have been elaborated by the EASI Working Group on Missile Defence, WGMD (an expert group drawn from the Euro-Atlantic Security Initiative’s membership and a wider circle of former senior policymakers and defence specialists). The proposals were presented at the Munich Security Conference (3–4 February 2012)<sup>57</sup>.

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<sup>57</sup> The Euro-Atlantic Security Initiative (EASI) is a new high-level commission, seeking ‘to create a Euro-Atlantic Security Community: an inclusive, undivided security space free of opposing blocs and grey areas’. As an independent organization it is co-chaired by Igor Ivanov, former minister of foreign affairs of Russia; Wolfgang Ischinger, former deputy minister of foreign affairs of Germany; Sam Nunn, former senator from the state of Georgia (the USA). The implementation of the Russian part of the EASI project is carried out by the Institute of World Economy and International Relations of the Russian Academy of Sciences.

The WGMD sees no need to deploy US warships equipped with missile interceptors either in the Arctic, or in the Baltic and Black seas. On the other side, the variant of the BMD architecture, proposed by the WGMD, provides for the deployment of Russian ships equipped with missile defence systems in the Baltic and Black seas<sup>58</sup>.

How to distinguish the challenge to Russia of the NATO BMD activities from the bluff and myths injected into the information space? Is it realistic under such circumstances to continue to pursue an ambitious (although basically utopian) objective of building a joint missile defence system of the European continent? Should one rather concentrate efforts on resolving pragmatic, achievable and essential tasks in this area? For example, to try to persuade the partners to modify the NATO BMD programme to accommodate Russian concerns in the interests of warding off missile strikes from ‘third countries’.

Should Moscow take a break in its search for compromises and focus instead on retaliatory ‘measures of a military-technical nature’?

Two distinct positions on responding to the evolving NATO BMD activities have taken shape in Russian expert community.

### **The most negative scenario**

Advocates of the first standpoint perceive the aforementioned stationing of four US warships equipped with Eegis ABM systems in the Mediterranean Sea and anticipated deployments of other warships equipped with missile interceptors in the seas of the Arctic Ocean as just the beginning of the implementation of a broader secret project – to build a global layered strategic missile defence architecture, with an European BMD as its segment, for the purposes of undercutting Russian Strategic Nuclear Forces (SNF) and creating a potential for stiff confrontation with the RF.

They take at their face value the statements indicating potential deployment of ‘hundreds and thousands missile interceptors’ under the EPAA project and question the wisdom of negotiating

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<sup>58</sup> See: *Missile Defense: Toward a New Paradigm*. EASI. Moscow. Brussels. Washington DC. February 2012.

with the USA/NATO on the issues of developing a joint BMD of the European continent. In their view, the EPAA implementation would most likely eventually lead to the creation of a potential of inflicting a disarming strike and the US administration is bent on acquiring such a capability.

This interpretation of the EPAA project is set forth in a number of articles published in the weekly supplement to the *Nezavisimaya Gazeta* newspaper – *Nezavisimoye Voennoye Obozrenie* (*Independent Military Review*)<sup>59</sup>.

Alexander Khranchikhin, Deputy Director of the Institute of Political and Military Analysis, construes in all seriousness a scenario based on the assumption that Washington is planning to deliver a massive disarming strike against Russia with SLCMs and ALCMs armed with conventional warheads and deployed on cruisers, destroyers and submarines. Khranchikhin argues that Russian Navy should play a primary role in addressing this threat. He urges Russian authorities to build quickly ‘a surface shield’ including BMD and Aerospace Defence (*Vozdushno-kosmicheskaya Oborona*, VKO) in order to be able to maximally weaken the first strike by shooting down incoming Tomahawks (land attack cruise missiles) before they reach Russian territory<sup>60</sup>. This scenario would be an extremely dubious option. The massive deployment of ABM facilities within the reach of the Strategic Nuclear Forces (SNF) of Russia would require lengthy preparations and involve a risk of provoking a pre-emptive strike since such deployments would serve as a signal of alarm.

In addition, an attack with conventional weapons against numerous, geographically dispersed ICBMs will be virtually impossible to synchronize<sup>61</sup>.

Igor Korotchenko, Director of the Centre for Analysis of Global Arms Trade and Chairman of the Public Council under

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<sup>59</sup> *Nezavisimoye Voennoye Obozrenie* is an authoritative professional periodical, which regularly highlights BMD problems. This periodical (Editor-in-chief is Litovkin V.) is providing a valuable service to its readers by offering an opportunity to debate different points of view on this critical strategic issue.

<sup>60</sup> Khranchikhin, A., ‘Exposed maritime boundaries’, *Nezavisimoye Voennoye Obozrenie*, 2–8 Dec. 2011, p. 5.

<sup>61</sup> Arbatov, A., ‘Mathematics and strategy’, *Nezavisimoye Voennoye Obozrenie*, 2–18 Mar. 2012, p. 13; Oznobishchev, S., ‘Myths and phobias regarding the BMD’, *Nezavisimoye Voennoye Obozrenie*, 23 Mar. 2012, p. 4.

Russian Ministry of Defence, advocates the adoption of a broad range of retaliatory ‘military-technical measures’, including: expansion of the production of new solid-fuel RS-24 Yars ICBM complexes as well as of a sea-based Bulava ICBM; putting on alert new S-500 air defence complexes and a wide deployment of Iskander operational-tactical missile systems in the Kaliningrad region and the south-western borders of Russia, etc.<sup>62</sup>.

The abovementioned measures are feasible, but their implementation would require additional resources. However their appropriateness and timelines (at least, of some of them) are not evident from a strategic point of view. For example, the deployment of Iskander missile complexes (focused on NATO BMD bases in Poland and Rumania) would have serious negative consequences as such moves would lead to the placement of US air-strike systems in the Baltic states, Poland and Rumania, from where they will be able to shoot through the Russian territory up to the Urals and beyond.

Another strategically dubious recommendation is to exceed the ceilings of strategic offensive arms (SOA) established by Prague Treaty between the RF and the USA on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START). Advocates of such a move do not explain its benefits to Russia, which cannot presently fill even the Treaty quotas on missiles and nuclear warheads. The situation for Russia would only worsen if it chooses to withdraw from the Treaty; as such an act would allow Washington to realize the US superior reconstruction (reloading) potential by returning all stockpiled warheads on its SLBMs and ICBMs. In this case, the USA could (by increasing the warhead loading of each missile) mount about 4000 nuclear warheads on deployed Trident-2 SLBMs and Minuteman-3 ICBMs (instead of 1550 warheads under the counting rules of Prague Treaty).

In recent years Russia has been decommissioning more SOA that it has been putting into service. The levels of SOA in the SNF have been lowering as Soviet-era missiles and bombers have been reaching the end of their service life and been decommissioned.

For objective reasons, the Russian SRF will be reduced in the coming decade regardless of Prague Treaty, although the SRF are being reequipped at an accelerated pace. It is supposed that by

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<sup>62</sup> Korotchenko, I., ‘How to respond to the European BMD’, *Argumenti i fakti*, 9–10 Dec. 2011.

2020 Russia will have approximately 300 strategic delivery vehicles and 1000–1100 nuclear warheads (under Prague Treaty attribution rules). Russian Ministry of Defence hopes to come up the SOA ceilings established by the Treaty (delivery vehicles and warheads, respectively 800 and 1550 units) only by 2028<sup>63</sup>.

Some publications contain categorical statements that the NATO BMD plan assumes ‘a guideline for a first nuclear strike’. In the view of their authors, the planned BMD systems are designed to ensure success of such a strike. They warn that the more missile interceptors Washington will have the greater will be its temptation to initiate ‘disarming strikes’ against Russia. Hence the conclusion: Russia needs to reinforce its Strategic Nuclear Forces; develop and deploy new weapon systems at an accelerated rate, increase military expenditure.

The supporters of this view are obsessed with NATO military threats. They resort to the rhetoric of mobilization and fantasize on the inevitability of the creation of ‘an absolute first strike weapon’ and of an ‘impenetrable’ NATO BMD shield’, the rising probability of ‘delivering a first strike against Russia’ (without attempting to explain the motivations for such obviously irresponsible and criminal conduct)<sup>64</sup>.

What will be the consequences for the USA/NATO of ‘a successful disarming attack’ against Russia? Let us imagine a fantastic scenario: Pentagon managed by some mysterious ways to ‘cheat’ Russian early warning systems and destroyed by massive nuclear strikes 650 of 700 operationally deployed strategic launchers which Russia is allowed to possess under Prague Treaty, while the NATO BMD was able to hit nearly all remaining ICBMs. To obtain these results (that is to destroy all Russian SRF facilities located at the SRF bases, including in the European regions of the country), Washington would have to bring into play, at a minimum, all operationally deployed delivery vehicles permitted by Prague

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<sup>63</sup> Litovkin, V., Deriabin, A., ‘Iskanders are targeted against the European BMD’, *Nezavisimoye Voennoye Obozrenie*, 2-9 Dec. 2011, p. 3.

<sup>64</sup> Kosin, V., ‘The European BMD: to be or not to be’, *Nezavisimoye Voennoye Obozrenie*, 14-20 Oct. 2011; Kosin, V., ‘The European BMD – a first strike mission’, *Nezavisimoye Voennoye Obozrenie*, 27 Jan.- 8 Feb. 2012, pp. 1, 11; Kozlov, S., ‘Mathematical games around BMD’, *Nezavisimoye Voennoye Obozrenie*, 2012, 17-23 Feb. 2012, p. 10; Vashenko, A., ‘BMD, Russia and Europe’, *Zavtra*, 11 Jan. 2012.



Treaty: 700 units with 1550 warheads on them. In other words, nuclear warheads with their total explosive capacity amounting to well over 150 megatons (the equivalent of over 12 300 atomic bombs that had been dropped on the Japanese city of Hiroshima in 1945) will be exploded on the Russian territory, including on the European part of the country.

According to the calculations made in the mid-1980s, 100 Mt is the point triggering irreversible catastrophic changes of the atmosphere of the biosphere and the climate ('nuclear threshold')<sup>65</sup>.

New environmental studies conducted in 2007–2009 demonstrated that even limited use of hundreds of nuclear warheads would cause the depletion of the ozone layer and the smokescreen of the upper atmosphere for years, which would entail disastrous consequences for the climate, agriculture and human health. There will be a sharp, extremely strong and long-term cooling of the air caused by the emission of huge amounts of dust and the spread of clouds consisting of small particles of substance<sup>66</sup>.

Nuclear strikes against Russia will involve an avalanche of consequences for other European countries even if no nuclear warhead exploded on their soil.

Large areas covering thousands of kilometres will be subjected to radioactive contamination that is far beyond the sites of nuclear explosions. Soil and water in Eastern, Central, Southern and Western Europe will be contaminated with long-lived radioactive isotopes, Strontium-90 and Cesium-137. Key components of human environment (including agro ecosystems) will be fatally affected.

Tens of millions of people in the western part of the European continent will be subjected to radiation damage. They will receive radiation doses that significantly upset functions of the immune system and cause the development of immunodeficiency in humans. In addition, people will be left without clean, uncontaminated drinking water and food, under the conditions of maximum psychological stress and degradation<sup>67</sup>.

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<sup>65</sup> *Climatic and Biological Consequences of Nuclear War*. Editor-in-chief: Academician Velikhov, E.P., (Nauka: Moscow, 1986), pp.21–22, 131.

<sup>66</sup> Arbatov, A., and Dvorkin, V., (ed.), *Nuclear reset: reduction and non-proliferation of weapons* (ROSSPEN: Moscow, 2011), p.15. Further on: *Nuclear reset*.

<sup>67</sup> *Climatic and Biological Consequences of Nuclear War*, pp. 46–48, 63–64.

Thus, by delivering 'successful' massive nuclear strikes against Russia, the USA would knock out ... 'its principal allies'. These nations would find themselves in a desperately grave situation. The degrading European states would hardly be inclined (and able) to defend American interests on the world arena (for example, to be of any help to the USA in anticipated confrontation with its chief competitor China)<sup>68</sup>. China could try to take advantage of a unique situation to obtain important geopolitical and economic concessions.

Having exhausted its operationally deployed strategic delivery vehicles, and, possibly, also - a considerable part of the stored carriers, the USA might find itself for some time without sufficiently effective means of nuclear deterrence and be subjected to pressures.

Perhaps, unanticipated force majeure circumstances for US security might emerge: provocative nuclear strikes, nuclear terrorist acts, use of non-traditional delivery vehicles of nuclear weapons, such as civilian vessels and aircraft, etc. Unfriendly states, 'offended' by the USA at some time, might be tempted to settle accounts with 'the offender'. The country's vulnerability will increase. Washington may face Islamist terrorist entities which have managed to acquire nuclear explosive devices.

Thus, the global geopolitical situation will undergo radical changes to the US disadvantage. The international environment will become a lot more hostile.

The country's authorities that initiated such transformations would be discredited. The voters would turn away from them.

Such course of action is very difficult to expect from an American administration guided by common sense and healthy instincts of national egoism. Although high ranking officials that de-

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<sup>68</sup> China is the only recognized nuclear power, conducting large-scale build-up of its nuclear-missile forces. China possesses a large arsenal of strategic offensive arms, capable of striking targets on the US territory (40–50 of about 130–180 Chinese nuclear warheads can be delivered on the American continent). A new Dongfeng-41 ICBM with multiple re-entry vehicles (each ICBM armed with 6–10 nuclear charges) is being developed. An experimental Ksia class SSBN equipped with 12 Julian SLBMs is periodically patrolling the seas. China is constructing five nuclear submarines, which will be armed with 36–60 long-range missiles equipped with MIRVs. China has great potential for a rapid build-up of SOA. If a political decision is taken, it is able to deploy 200–300 ICBMs and 1200–1500 nuclear warheads within 19 years. *The Guardian*, 30 Oct. 2011.

fine American foreign and military policies are not without weaknesses (some are hostile toward Russia), but they are not afflicted with dementia and inclination for the collective suicide.

To give credibility to their 'horror stories' about the NATO BMD and the growing likelihood of American 'first nuclear strikes with impunity' against the RF, some authors usually refer to the US nuclear strategy.

The new American nuclear doctrine (Nuclear Posture Review Report, published in April 2010) retains the concept of a first use of nuclear weapons. According to this document, the USA will consider using nuclear weapons only under extreme circumstances to protect the vital interests of the United States, its allies and partners.

It is pertinent to compare this wording with the reference on this theme contained in the Military Doctrine of the Russian Federation, published in February 2010: Russia reserves the right to use nuclear weapons in response to the use of nuclear weapons against it and its allies as well as in the case of aggression against the Russian Federation with the use of conventional weapons 'when the very existence of the state is threatened'. The Military Doctrine does not contain any provision regarding delivering 'a disarming strike'. It says that the mission of the SNF is to inflict 'specified damage' to an aggressor<sup>69</sup>.

It goes without saying that in a competitive environment of the XXI century Russia is facing attempts on the international arena to push it, weaken its positions in world affairs. Russia and the USA differ on a range of international and domestic issues (NATO eastward expansion; differences on a number of regional conflicts; the US moves on the BMD; the EPAA programme; clashes of interests in the CIS space, issues of democracy and human rights, etc.).

But areas of common interests also exist (strengthening the WMD non-proliferation regime, prevention of 'black market' in nuclear materials, the fight against international terrorism, Afghanistan, etc.) This is reflected in the relevant doctrinal documents of both countries.

The USA (by virtue of its objective situation and military capacity) has no serious incentive to resort to a first use of nuclear weapon. The new US nuclear doctrine has reduced the emphasis on

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<sup>69</sup> <<http://www.rg.ru/2010/02/doctrina-doc.html>>.

the importance of nuclear weapons in international affairs. It states that the USA in its relations with Russia intends to strengthen strategic stability, transparency and mutual trust<sup>70</sup>.

The updated US military strategy, released in January 2012, provides for the possibility of achieving deterrence goals with smaller nuclear forces and for reducing the number of nuclear warheads in the arsenal, and their role in national security strategy of the United States.

Russia is not included in the list of US potential adversaries. According to the document, the USA introduced important innovation to its military strategy (shifting the centre of the US military presence to the Asia-Pacific region, reducing the number of land forces and military infrastructure built in Europe, including the withdrawal of two of the four army brigades from the European continent).

Referring to the US–Russian relations, the document indicates that US cooperation with Russia remains important and the USA will maintain closer relations with this nation in the areas of common interests and invite Russia to contribute to this cooperation on a broad range of issues<sup>71</sup>.

In the opinion of Alexander Konovalov, President of the Institute of Strategic Studies, the announced innovations in the US security strategy ‘mean a lot to Russia’. Noting the fact that ‘the USA does not view itself as Russia’s military opponent’, Konovalov warns about ‘the danger of a maniacal obsession with the BMD, which can be very expensive’. ‘If resources are directed to fend off a non-existent peril, Konovalov argues, the likelihood is great to overlook the genuine ones’<sup>72</sup>.

By the way, the financial costs of the implementation of a broad range of ‘retaliatory military-technical measures’ can be very substantial.

Due to the fact that Russia has launched a large-scale re-equipment of its Armed Forces as well as of law enforcement agencies managing the state security, the federal expenditure on defence and security is already to be increased by almost one and a half

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<sup>70</sup> *Nuclear Posture Review Report*: April 2010. Washington DC, 2010.

<sup>71</sup> *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, 3 Jan. 2012).

<sup>72</sup> Konovalov, A., ‘There is no need to be afraid’, *Ogonek*, 6 Feb. 2012, pp. 26–27.

times over the next three years.

In accordance with the State Armaments Programme–2020 (Gosudarstvennaya Programma Vooruzheniy, GPV–2020) approved in early 2011, Russia is to spend about 20 trillion roubles plus 3 trillion roubles on the re-equipment of the defence-industrial complex (DIC) during the ten-year period.

Military analysts estimate that this programme will allow patching only the most obvious gaps in the technical equipment of the Armed Forces<sup>73</sup>.

Some Russian experts believe that even the planned increase of the military expenditure for 2012–2014 is hard to sustain financially. It could be reviewed in the coming two years<sup>74</sup>. In January 2012, Anton Siluanov, Finance Minister, acknowledged that new spending commitments of the Federal Budget would increase the risks for the Russian financial system<sup>75</sup>.

If Russia would be drawn into a stiff standoff with NATO over the European BMD, the strategic uncertainty will obviously increase. Obsession with the BMD issue would require significant changes to the federal budget for 2012–2014 and GPV–2020, as well as continuing reorientation of the budgetary resources and increasing non-productive expenditure to the detriment of urgent needs of the country under conditions of the anticipated slowdown in the world economy.

Such a course would have entailed increases in the tax burden, the depletion of the state reserves, rising inflation, and other negative consequences for the economy and social sphere. Only the lobbyists seeking to take advantage of the GPV programme might benefit from a stiffening confrontation. At the same time the underfunding of vital (and not fanciful) defence needs as well as of education, science and health service would have doomed the nation to underdevelopment, undermined its competitiveness and weakened the overall Russian deterrence potential.

The proponents of the worst-case scenario regarding the

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<sup>73</sup> On this subject see in this volume: Pankova, L., ‘Russia: defence spending in the years 2012–2014 and GPV–2020’.

<sup>74</sup> Dmitry Gudkov, one of the leaders of the parliamentary faction ‘The Fair Russia’, argued that even the 2012 Federal Budget would undergo the sequestration. Similar concerns were voiced by former Finance Minister Alexei Kudrin. See: *Nezavisimaya Gazeta*, 10 Nov. 2011.

<sup>75</sup> *Rossiiskaya Gazeta*, 19 Jan. 2012.

European BMD have not yet been able to offer convincing strategic arguments in support of their positions.

### **Quest for a non-confrontational alternative**

Many authoritative experts (among them senior figures – former military officials, weapon designers, financiers, political scientists) criticize the exaggerated assessments of the challenge of the planned NATO BMD system to the Russian strategic potential.

In their view, by 2020 this system will include almost 1200 Patriot PAC-3 missile interceptors, 500 THAAD ABMs and around 400 SM-3 interceptors (if its funding is not reduced, which appears to be probable). Of the latter, only 50 units of SM-3 Bloc 2A, 2B interceptors can acquire a theoretical ability of hitting ICBM by the end of the decade. The remaining missile interceptors belong to the non-strategic ABM and are incapable of posing any threat to Russian SNF<sup>76</sup>.

In their studies, they contest the alarmists' thesis about the impending menace of a nuclear attack on Russia in the context of the developments in the BMD area and argue that an inadequate response to the NATO BMD challenge would divert resources away from actual vital defence needs and interfere with the overall modernization of the country. They offer specific proposals for reaching mutually acceptable solutions of the European BMD issues.

After the end of the Cold War the RF and USA carried out substantial reductions of their SOA, improved stability of the nuclear balance and established a bilateral treaty regime, constraining quantitative parameters of their SOA.

New START has established, as the main constraints, the limits on nuclear warheads and deployed carriers, respectively, 1550 and 700 units for each side, and the total number of deployed and non-deployed carriers – ICBMs, SLBMs and heavy bombers (800 units for each side). Prague Treaty ensures strategic stability and predictability, at least, until the end of the current decade.

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<sup>76</sup> Dvorkin, V., 'It is difficult to live without an enemy', *Nezavisimaya Gazeta*, 6 Feb.2012, p. 3. Currently, the USA has on its territory 36 ground-based strategic missile interceptors GBI: 30 in Alaska and 6 in California. They cover the territory of the country from individual missile launches. There are no signs that the USA is planning to build up BMD on its territory.

The maintaining of the solidity of strategic stability at lower SOA levels is ensured by weapons systems with increased survival ability: land and sea components of the strategic nuclear forces (missile submarines, mobile ICBMs equipped with MIRVs<sup>77</sup>).

According to experts, under the conditions of the operation of Prague Treaty, Russian nuclear deterrence potential has increased due to the fact that new Russian ICBMs and SLBMs are equipped with high-performance means of overcoming the BMD.

Even the unilateral deployment by the USA of the BMD facilities planned under the EPAA plan would not have a practical impact on the ability of Russian SNF to inflict unacceptable damage in a retaliatory strike<sup>78</sup>.

In recent years this ability was strengthened due to the introduction of new missile warning systems<sup>79</sup>.

Under the Prague Treaty regime and at lowering levels of US and Russian SOA, the planning of disarming strikes has become vividly irrational as the attacked side would retain sufficient number of missiles and nuclear warheads for delivering an unacceptable retaliatory strike<sup>80</sup>. Only a massive build-up of land, air and space echelons of the interception of missiles in all the phases of the trajectory of their flight under the model of 'Star wars' could have theoretically posed a threat to Russia. However, this scenario in-

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<sup>77</sup> For example, RS-24 Yars ground-based strategic missile complex is equipped with MIRV. A distinctive feature of the Yars MIRVed ICBM is the fact that, after having separated from the last stage, the re-entry vehicles can fly at hypersonic speeds on unpredictable trajectories. Having detected an interceptor, each re-entry vehicle starts to maneuver to avoid it. Sineva and Bulava sea-based ICBMs possess increased capacity of overcoming BMD. Neither the existing American system Eegis SM-3 nor its modified future (2020) versions (nor global GBI systems) will be unable to intercept them.

<sup>78</sup> Arbatov, A., and Dvorkin, V., (eds) *Nuclear reset: reduction and non-proliferation of weapons*, p. 15.

<sup>79</sup> Voronezh-DM Radar can detect missiles and other objects at the distance of up to 6000 km and is capable of monitoring simultaneously up to 500 objects. In recent years tracking stations have been put into operation in the Leningrad and Kaliningrad regions as well as in Armavir. Tests of a similar facility have been carried in Irkutsk. The construction of a new generation Radar has been also planned in other Russian regions to provide continuous radar monitoring of all directions vulnerable to a missile attack.

<sup>80</sup> See: *Nuclear reset: reduction and non-proliferation of weapons*, pp. 41-42.

volves a return to the era of nuclear confrontation and new arms race.

Professor Vladimir Dvorkin believes that even under this scenario an aggressor could not escape a retaliatory devastating strike<sup>81</sup>. According to the expert assessments, the number of casualties could amount to 50–100 millions. Since the missile silos would be empty, the retaliatory strike, (under the logic of mutual assured destruction), would be delivered against population centres<sup>82</sup>.

Would the EPAA implementation in any meaningful way affect Russian nuclear deterrence capability?

Academician Yuri Solomonov, MIT Corporation's general designer and general designer of Topol M, Bulava and Yars ICBMs, is convinced: the NATO European missile defence system in principle cannot solve the mission of intercepting missiles of intercontinental class. (As all Eegis systems with their modifications are battlefield interceptor missiles, which are designed, at best, to intercept the objects of operational and tactical class)<sup>83</sup>. The planned BMD architecture in Europe (including the fourth phase of the EPAA plan would not practically affect Russian nuclear deterrence potential in relation to the USA.

This conviction is shared by Victor Esin, a former Chief of Staff of Russian Strategic Rocket Forces (SRF). According to Esin, the SRF means of overcoming BMD will be able of defeating any BMD in the coming 20–30 years.

Academician Alexei Arbatov, Director of the IMEMO Centre for International Security, argues that the BMD which is being erected in Europe will not pose a threat to Russia, even the one that will be created by 2020. The Russian SRF (according to their modernization plans) will be capable of defeating a BMD of an order of magnitude more powerful and sophisticated. Therefore there is no need to resort to any additional measures<sup>84</sup>.

Of course, this does not mean that unilateral deployments of US ABM facilities in Europe is a process that is compatible with the task of creating a common space of peace, security and stability in the Euro-Atlantic region. These actions serve to worsen Russian-

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<sup>81</sup> Dvorkin, V., 'Time has come to forget about BMD threats', *Nezavisimoye Voennoye Obozrenie*, 2011, no. 37, pp. 1, 4–5.

<sup>82</sup> *Nezavisimoye Voennoye Obozrenie*, 2011, no. 3, p. 5.

<sup>83</sup> *Natsionalnaya Oborona*, 2011, no. 6 (63) June, p. 86.

<sup>84</sup> *Nezavisimoye Voennoye Obozrenie*, 2–4 Dec. 2011, p. 3.



American relations, undermine strategic stability and hinder coordination of international efforts to combat common threats, including proliferation of missiles and nuclear weapons.

Nevertheless, in the opinion of authoritative Russian experts there still exists a significant potential for practical positive interaction between the RF, on the one side, and the USA and NATO, on the other, on the issues of the European BMD, first of all, in the field of integration of information systems<sup>85</sup>.

They propose to change the course of the discussion and focus on adjusting the phased NATO BMD and Russian Airspace Defence Forces (VKO) to make them compatible in order to counter missile threats from the third countries. For example, through pairing (coupling) their missiles attack warning systems and other mutually beneficial measures (joint testing of interceptors, moving forward to the development and deployment of BMD components and coordination of their operational functions) which would increase the total efficiency of countering missile threats from the third countries<sup>86</sup>. On this basis, they consider it possible to give a strong impetus to the ABM debates and achieve mutually acceptable compromises.

The experts have advanced a number of specific suggestions, including the option for providing the possibility of lessening the role of SOA and increasing the emphasis on defensive systems in the context of strengthening international strategic stability<sup>87</sup>.

Such adjustments will help Russia to avoid the need to take additional costly measures damaging to national defence and security. The country could also direct more resources to increasing its 'soft power' (modernization of the economy, greater expenditure on

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<sup>85</sup> See note 7.

<sup>86</sup> Arbatov, A., 'Strategic asymmetries and the BMD system', *Nezavisimoye Voennoye Obozrenie*, 2012, no.1, p. 5.); On possible contribution of Russia to the BMD of the European continent see also Arbatov A. (pp. 41–42) and Dvorkin V. (pp.58–63) in this volume.

<sup>87</sup> For example, the proposals to reinvigorate the Joint Data Exchange Centre (JDEC) on missile and delivery vehicles' launches of the two states, the United States and Russia agreed upon earlier; to conduct serial joint computer exercises involving theatre missile defence; the expansion of these exercises to the field format; joint development and deployment of the theatre BMD and later on – of a global strategic missile defence system, involving Russian and US allies, China and other responsible states. See: Arbatov, A., and Dvorkin, V., (eds) *Nuclear reset: reduction and non-proliferation of weapons*, p.53.

science, education and culture, stronger social and demographic policy; raising the standard of living). This course will raise Russia's status and increase its influence in world affairs.

At the same time one should not dismiss the processes, which in the XXI century could undermine the stability of the existing global balance of power: the possibility of a qualitatively new stage in the militarization of outer space, for example, the stationing of weapons in this environment; a massive build-up of land, sea and space tiers of BMD facilities; the expansion of nuclear armaments of the third states, cascade-type spread of nuclear-missile armaments resulting in the general destabilization of worldwide military-political situation.

It would be imprudent to dismiss the probability of the following contingency: the USA and NATO will choose to prefer confrontation with the RF. In this case Russia will be forced to resort to costly defence measures to prevent the destabilization of the military balance. The nation should be prepared to respond adequately to this contingency<sup>88</sup>.

However, under the conditions of the existing global strategic balance, still relatively favourable to our country, it would be premature to move hastily and carelessly forward exorbitant military-technical measures to respond to the current plans of creating a limited missile defence system in Europe.

It is still feasible to avoid additional non-productive expenditures (without damaging national security) and make great strides forward in the political, economic and technological modernization of the country, by taking advantage of the existing strategic balance. This time should not be wasted in countering false menaces.

Responding to the unilateral deployment of American military facilities near Russian borders, Moscow took a number of precautionary measures, including some of a military-technical nature<sup>89</sup>. Simultaneously, the Russian leadership (at the highest level)

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<sup>88</sup> Russian military and security analysts agree that Russia should carry out sensible modernization of its SNF (Yars ICBM, Bulava-30 SLBM), including the development of technical means of defeating any BMD system and equip the SRF with reliable defensive systems.

<sup>89</sup> On 23 November 2011 President Dmitry Medvedev announced of measures of military-technical nature. Among them: putting an early warning radar into service in the Kaliningrad region. Incidentally, this radar can be used as an element of a BMD of the European continent. President Medvedev indicated

reaffirmed its readiness to engage the USA and NATO in a productive dialogue on the BMD issues on the basis of mutual respect for legitimate interests of all participating parties.

The evolvement of the European BMD has vividly demonstrated that building such a partnership is a tough, time-consuming process, which involves resolute overcoming of the stereotypes and phobias inherited from the Cold War and, most importantly, a qualitatively higher level of mutual trust and a steady transformation of the system of mutual nuclear deterrence and the lessening of its role in security policies of the states. Adequate reaction to the myths and phobias, including the bluff of 'first disarming strikes' and other similar myths, is an important task in this process. Otherwise, our country risks finding itself in a strategic trap: it can be sucked into a swamp of a futile arms race depriving the economy of its vital development resources. Russia does not need excessive armaments which would weaken its competitiveness. It needs transition of the economy on an innovation track in an environment of strengthening general security.

The European BMD theme is linked to the multifaceted Russian–NATO relations and broader geopolitical and strategic stability considerations. Mutually beneficial compromises in the BMD field could open the prospect of building a qualitatively new model of cooperation in many other sensitive areas.

Proceeding along these lines, Russia will preserve chances to strengthen its influence in world affairs and keep open the prospect of managing effectively important military-political issues (limitations on strategic BMD systems and long-range conventional strike weapons, prevention of an arms race in outer space, etc.). This approach serves the security interests both of Russia and the international community.

Russian readiness to employ the unique capabilities of this station in cooperation with the partners to counter possible missile threats.

## **5. BTWC: OUTCOMES OF THE SEVENTH REVIEW CONFERENCE**

Natalia KALININA

### **Introduction**

Biological weapons are amongst the most formidable military inventions capable of causing unpredictable consequences. Although there were only a few cases of actual military use of biological agents, this weaponry remains a valid threat to international stability in the 21st century. The end of the Cold War did not eliminate the risk of global proliferation of weapons of mass destruction, including biological weapons (BW) and bioterrorism.

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BTWC) was opened for signature in 1972 and entered into force in 1975 when twenty-two governments ratified it, including the USSR (Russian Federation). Three powers became the Convention depositories: the UK, the US and the Russian Federation.

The BTWC, compared to the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, although containing well defined articles limiting the potential use of BW, is more of a joint political statement of the state parties than a full-fledged treaty. This statement is supported by the following facts:

First, the BTWC does not prohibit the use of BW, but rather appeals to the nations in the Preamble to observe the Geneva Protocol<sup>90</sup>;

Second, the BTWC does not contain any articles defining the compliance control mechanisms with regards to development, production, stockpiling and disposal of BW, and does not make any direct references to development of such measures;

Third, the BTWC does not contain any specific list of bio-pathogens, toxins or critical technologies applicable to the Convention, and the prohibition to ‘develop, produce, stockpile or otherwise acquire or retain microbial or other biological agents, or toxins, whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes’, could be interpreted at the party discretion (one state can believe that it needs one tonne of plague bacilli to ensure the national security, whereas another state would view this quantity as a preparation for biological warfare);

Fourth, the BTWC does not prohibit the defence and security programmes which allow states to stockpile any quantities of biological agents under the pretext of national security needs.

The BTWC does not prevent the creation of new types of BW through scientific and technological developments. All the more so that Art. X of BTWC authorizes an extensive exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes.

However, the BTWC is the first legally binding agreement that requires the state parties to abandon the development of an entire type of WMD. One of the benefits of the BTWC is that after it came into force, parties started to withdraw the reservations to the Geneva Protocol, including the states with a significant military potential<sup>91</sup>.

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<sup>90</sup> The Protocol was signed in Geneva on 17 June 1925 and entered into force on 8 February 1928. There are 137 state parties to the Protocol. A number of countries submitted reservations when becoming parties to the Geneva Protocol, declaring that they reserved the right to use chemical and biological weapons against non-parties to the Protocol, coalitions which include non-parties to the Protocol or against states violating the Protocol’s obligations.

<sup>91</sup> Russia authorized the withdrawal of its reservations to the Geneva Protocol by the Federal Law #143-FZ as of 6 December 2000.

By early 2012, 165 states were the BTWC participants.

Although the Convention, unlike other disarmament treaties, does not require any regular review conferences, state parties decided to hold such conferences every five years. The Seventh Review Conference took place in December 2011.

The conference was preceded by four years of inter-sessional preparations: annual meetings of government experts (usually in August) and meetings of states parties (usually in December).

The Sixth Review Conference<sup>92</sup> decided to convene for the Seventh Review Conference and review the operation of the Convention, taking into account, among other things: new scientific and technological developments relevant to the Convention; the progress made by state parties on the implementation of the obligations under the Convention; progress on the implementation of the decisions and recommendations agreed upon at the Sixth Review Conference.

104 state parties to the BTWC participated in the Seventh Review Conference, as well as five states which signed but were yet to accede (Haiti, Egypt, Côte d'Ivoire, Myanmar and Tanzania). Two non-signatory states (Israel and Cameroon) participated as observers.

Representatives of the UN system (UNIDIR, UNICRI) also attended the Conference. The African Union, WHO, OIE, European Union, INTERPOL, ICRC, OPCW and NATO were granted observer agency status. In addition, the Conference was attended by 47 NGOs and research institutes.

The Conference held general debate meetings, in which 54 states parties, one signatory, and representatives of WHO, European Union, INTERPOL, ICRC, OIE, NATO, OPCW and UNICRI made statements<sup>93</sup>.

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<sup>92</sup> BWC/CONF.VI/6, Item 61 of the Final Document.

<sup>93</sup> Summary records of the Conference progress: BWC/CONF.VII/SR.1 (Summary record (partial) of the 1st meeting), BWC/CONF.VII/SR.2 (Summary record (partial) of the 2nd meeting), BWC/CONF.VII/SR.3 (Summary record of the final meeting). See also: Daily Reports from Conference meetings on the web-site 'The BioWeapons Prevention Project', <<http://www.bwpp.org/reports.html>>.

## Scientific-technological developments relevant to the BTWC

Several reports on these subjects have been presented at the Conference (see references to the main reports in the footnote below<sup>94</sup>). The reports contain recommendations on the development of new and improvement of existing oversight mechanisms for scientific research.

The following should be noted in particular:

Enhance the state activities directed at scientific community's awareness of the BTWC and provisions therein;

Appeal to the scientific community, biological safety associations and international organizations to develop global and certified biological risk management standards and select the topic of biorisk management standards and their role in the BTWC implementation as an inter-sessional agenda;

The inter-sessional process of 2012–2015 and the time before the Eighth Review Conference will include annual reviews of developments in the field of science and technology (it has been proposed to review synthetic biology in 2012);

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<sup>94</sup> New scientific and technological developments and biosecurity: BWC/CONF.VII/INF.3 and Corr.1, Corr.2, Add.1 and Corr.1 and Add.2–Add.3 (New scientific and technological developments relevant to the Convention. Background information document submitted by the Implementation Support Unit); BWC/CONF.VII/WP.3 (Proposal for structured and systematic review of science and technology developments under the Convention. Submitted by India); BWC/CONF.VII/WP.13 (Proposal for the annual review of advances in science and technology relevant to the Biological Weapons Convention. Submitted by Australia, Japan and New Zealand); BWC/CONF.VII/WP.20 and Rev.1 (Possible approaches to education and awareness-raising among life scientists. Submitted by Australia, Canada, Japan, New Zealand, the Republic of Korea, Switzerland, Kenya, Pakistan, Sweden, Ukraine, the United Kingdom of Great Britain and Northern Ireland and the United States of America); BWC/CONF.VII/PC/INF.4 (Possible approaches to education and awareness-raising among life scientists. Document submitted by Australia, Japan, Switzerland and Sweden); BWC/CONF.VII/WP.4 (Strengthening biosafety and security while the convergence of biology and chemistry has increased: building joint responses between the BTWC and CWC regimes against misuse of biological and chemical agents. Document submitted by Poland); BWC/CONF.VII/WP.7 (Bio-risk management standards and their role in the BTWC implementation. Document submitted by Belgium); BWC/CONF.VII/WP.8 (Finnish biothreat preparedness. Document submitted by Finland). See full reports at <[http://www.unog.ch/80256EE600585943/\(httpPages\)/F1CD974A1FDE4794C125731A0037D96D?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/F1CD974A1FDE4794C125731A0037D96D?OpenDocument)>.

Build joint responses between the BTWC and CWC regimes against misuse of biological and chemical agents in the ever increasing convergence of biology and chemistry.

### **Compliance of the BTWC**

It should be noted that none of the state parties has reported non-compliance with the BTWC, although only a few states report this data. Thus, according to the Implementation Support Unit, fewer Convention compliance reports are presented at the review conferences<sup>95</sup>. Only 13% of state parties reported compliance at the Sixth Review Conference, although the volume of the reported information has been expanding<sup>96</sup>.

By the time of the Sixth Review Conference, each report contained at least some relevant information. 70% of reports included references to specific laws and regulations, whereas 60% - included summaries and references<sup>97</sup>.

Since the compliance reports are purely voluntary, the report submission format is optional. For instance, just over a third of the states (36%) submit the information breakdown by individual BTWC articles, and almost two thirds of the state parties (61%) applied the topical approach. These reports inform of specific types of activity or make statements on various aspects of national implementation of the obligations under the Convention (for instance, national export controls or international cooperation).

Alternatively, reports include data on national compliance with certain obligations under the Convention. Such statements usually refer to Art. I, III and X. Over three quarters of the previous submissions (78%) included either a statement confirming the implementation of the national obligations under the BTWC, or a statement confirming that the state does not produce or stockpile

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<sup>95</sup> BWC/CONF.VII/PC/INF.1 of 4 April, 2011, <<http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G11/607/75/PDF/G1160775.pdf?OpenElement>>.

<sup>96</sup> The BTWC compliance data in 2006 was submitted by: Australia, Argentina, Hungary, Germany, Italy, Canada, China, Cuba, Nigeria, Portugal, the Russian Federation, Serbia, the United Kingdom, the USA, Ukraine, Finland, France, Czech Republic, Switzerland, Estonia and Japan.

<sup>97</sup> Only three countries submitted compliance information at all review conferences: Canada, the United Kingdom and Russia.



BW (Art. I). Just over a third of the state parties (35%) made similar statements about non-transfer of BW or non-assistance to third parties in BW development (Art. III) and 37% of parties reported progress in assisting the use of biological science for peaceful purpose (Art. X).

Russian reports at the Seventh Review Conference presented, just as at any previous conference, information on the BTWC compliance, which included general statements on the implementation, as well as some facts on the Russian Federation's function as a depositary state. In particular, the Russian Federation confirmed that, in the period between 2007 and 2011, it did not receive any statements of concerns from the state parties regarding non-compliance with the BTWC provisions.

The document states that the Russian Federation is open to collaborate in any investigations of the UN Security Council according to Art. VI of the BTWC and assist any state party, if the UN Security Council decides that such party was exposed to a threat due to violation of the Convention provisions.

The second document submitted by the Russian Federation contains the information on national implementation in line with Art. X of BTWC (cooperation in biological and biotechnological development). It reviews some aspects of cooperation (mostly with the nations of the former Soviet Union) on sanitary security and enhanced epidemiological surveillance.

Russian programmes, as part of an international effort to build global capacity to combat infectious diseases, are strategic due to an increased global threat of outbreaks of infectious disease.

The Russian Federation views implementation of Art. X as an important factor of cooperation between state parties in combating infectious diseases of natural or deliberate origin.

Some other nations also submitted reports on the compliance or implementation of Art. X<sup>98</sup>.

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<sup>98</sup> Documents on BTWC compliance and implementation of Art. X: BWC/CONF.VII/INF.2 and Add.1 (Compliance by States Parties with their obligations under the Convention. Background information document submitted by the Implementation Support Unit); BWC/CONF.VII/WP.5/Rev.1 (Implementation of the Biological Weapons Convention. Submitted by Iraq); BWC/CONF.VII/WP.11 (Proposal for a working group to address compliance issues. Document Submitted by Australia, Japan and New Zealand); BWC/CONF.VII/INF.8 and Corr.1, Add.1 and Corr.1 (Implementation of Art. X

General understandings and agreements reached by the state parties at the meetings during the inter-sessional period between 2007 and 2010 have been stated in background information documents, submitted by the Implementation Support Unit (ISU).<sup>99</sup> Essentially, these documents review the implementation of the inter-sessional programme.

### **Promotion of universality of BTWC**

The accession to the BTWC proceeds very slowly. There were no new accessions in 2008-2010. Two states acceded in 2011: Burundi and Mozambique. Only 10 states joined the BTWC in the last five years.

In general, state parties have not implemented any specifically coordinated actions to encourage the accession to the BTWC, in spite of the fact that the annual UNGA resolutions encouraged the states that have not yet signed or signed but had not yet ratified the Convention, to immediately become parties to the Convention.

The Review Conferences did not discuss plans to promote the universalization. Encouragement to universal accession of the

of the Convention. Background information document submitted by the Implementation Support Unit); BWC/CONF.VII/INF.10 (Implementation of Art. X of the BTWC – some illustrative contributions. Submitted by European Union); BWC/CONF.VII/WP.16 (Mechanism for advancing the implementation of Art. X. Document submitted by South Africa); BWC/CONF.VII/WP. 26 and Corr.1 (the establishment of a mechanism to promote the full effective and non-discriminatory implementation of Art. X of the Convention. Document submitted by Cuba on behalf of the Group of the Non-aligned Movement and other States Parties to the BWC); BWC/CONF.VII/WP. 29 (the full, effective and non-discriminatory implementation of Art. X. Document submitted by the Islamic Republic of Iran).

<sup>99</sup> Documents: BWC/CONF.VII/INF.4 (Developments since the last Review Conference in other international organizations which may be relevant to the Convention. Background information document submitted by the Implementation Support Unit), BWC/CONF.VII/INF.5 (Additional understandings and agreements reached by previous Review Conferences relating to each article of the Convention. Background information document submitted by the Implementation Support Unit), BWC/CONF.VII/INF.6 (Common understandings reached by the Meetings of States Parties during the inter-sessional programme held from 2007 to 2010. Background information document submitted by the Implementation Support Unit).

Convention was, and still is, a voluntary provision for individual states or regional groups.

As of December 2011, 12 states signed but not yet ratified the BTWC: the Central African Republic, Côte d'Ivoire, Egypt, Guyana, Haiti, Liberia, Malawi, Myanmar, Nepal, Somalia, Syria and Tanzania.

19 states that have neither signed nor ratified the BTWC: Andorra, Angola, Cameroon, Chad, Comoros, Djibouti, Eritrea, Guinea, Israel, Kiribati, Marshall Islands, Mauritania, Micronesia, Namibia, Nauru, Niue, Samoa, South Sudan and Tuvalu).

Since the ISU was established and launched its operation in 2007, the organization has been providing a way to work with the 'non-signatories' hosting various awareness seminars, distributing submission letters, and sending invitations to various activities related to the BTWC. However, it is yet too early to discuss the results.

12 states signed the Convention almost 40 years ago, but have yet to ratify it, and 19 states have not even signed it and there is little hope to expect ratification by such states as Egypt, Syria and Israel, which tend to view their BTWC related policies in connection with the nuclear security and general political environment in the Middle East. However, a majority of the 'non-signatories' participate in various meetings relevant to the BTWC. Thus, Israel, Egypt, Angola and a few other states are regular participants at all meetings and Review Conferences of the Convention. It would be wrong to argue that refusal of states to join and/or ratify the Convention is related to the weakness of such states or their ignorance of the importance of the Convention for disarmament.

The root cause involves not so much economics, as politics. However, the process has not been without mishaps. Thus, Burundi signed the BTWC in 1972 and submitted an application for ratification in 2000. However, it has been declined by the depositary state for technical reasons (the application was not signed by the head of the state or the foreign minister). Later the ratification was lost and was recovered only in October 2011, which was followed by the state's full accession to the BTWC.

The ISU has been in constant communication with the states that have not completed the signature process since 2007.

Head of the Russian delegation at the Seventh Review Conference<sup>100</sup> identified three major points of focus. First is the universalization of the BTWC based on the idea that universal membership in the BTWC is the major prerequisite of the global biosecurity. The second point refers to the implementation of the BTWC, because any international disarmament or non-proliferation treaty is based on the universal national implementation of all treaty obligations. This prevents non-state actors from acquiring hazardous biological agents. The third point involves an effective international control and verification to ensure the Convention compliance and efficient prohibition of the biological and toxin weaponry. Regular transparency measures, though important and useful, cannot ensure such confidence alone. Hence, the Russian Federation again confirmed its adherence to the idea of a universal legally binding BTWC verification mechanism.

### **Confidence-building measures (CBMs)**

A voluntary national implementation report constitutes at present the only mechanism overseeing the BTWC compliance. Such reports are submitted to the UN and contain reviews of the states parties of their bio-pathogens management programmes and national Convention compliance programmes, facilitating, to a certain extent, better transparency and predictability.

Confidence-building measures (CBMs) in the BW area were first agreed on at the Second Review Conference in 1986. They were further expanded at the Third Review Conference in 1991.

The current format of the CBMs system involves seven declarations to be submitted annually before April 15:

1) Declaration in the format of ‘nothing to declare’ or ‘nothing new to declare’ answers.

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<sup>100</sup> Statement of Gennady Gatilov, Deputy Minister of Foreign Affairs of the Russian Federation at the Seventh Review Conference for Biological and Toxin Weapons Convention. See full text of the Statement at [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/1320B623DA211B86C125795E002FF953/\\$file/Russia.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/1320B623DA211B86C125795E002FF953/$file/Russia.pdf) and <http://www.mid.ru/bdomp/nsdvbr.nsf/8f29680344080938432569ea00361529/c32577ca00173dc04425795e0054ead2!OpenDocument>.

2) CBMs 'A'. a) Part 1. Exchange of data, including name, location, scope and general description of activities and on research centres and laboratories that meet very high national or international safety standards established for handling, for permitted purposes, biological materials that pose a high individual and community risk or specialize in permitted biological activities directly related to the Convention.

b) Part 2. Exchange of information on national biological defence research and development programs, including objective and summary of the research and development activities and a detailed multi-parameter description of the activities.

3) CBMs 'B'. Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins, and on all such events that seem to deviate from the normal pattern as regards type, development, place, or time of occurrence; in particular, in cases when the causative agent is exotic to a given geographical region, when the disease follows an unusual pattern of development; when the disease occurs in the vicinity of research centres and laboratories subject to exchange of data under item "A"; when suspicions arise of the possible occurrence of a new disease.

4) CBMs 'C'. Encouragement of the publication of results and promotion of use of knowledge relevant to the Convention.

5) CBMs 'D'. Active promotion of contacts between scientists, other experts and facilities engaged in biological research directly related to the Convention, including exchanges and visits for joint research on a mutually agreed basis.

6) CBMs 'E'. Declaration of legislation, regulations and other measures prohibiting the BW specified in Art. I of the BTWC, export or import of micro-organisms pathogenic to man, animals and plants or of toxins.

7) CBMs 'F'. Declaration of past activities in offensive and/or defensive biological research and development programmes since 1 January 1946.

8) CBMs 'G'. Declaration of vaccine production facilities (both governmental and non-governmental) for the protection of humans, within its territory or under its jurisdiction or control anywhere.

As evident from the above, the states are required to submit massive volumes of data on CBMs that would allow assessing na-

tional biotechnological potentials in offensive or defensive BW research programmes.

Because of the sensitivity of such data to the national security, access to it is very restricted (accessible exclusively for state parties<sup>101</sup>). All relevant analytical reports contain mostly statistical assessments.

Many experts are concerned that such programmes could serve as a cover for the outlawed activities. That is why proposals to make such information exchange legally binding, as well as to review and expand CBMs formats, have been repeatedly voiced at various BTWC forums. However, such proposals failed to find support.

Participation in the CBMs area is still very low, and many states do not report on a regular basis. On average, around 60-70 states submit data annually.

About 60% of state parties choose to report in 'nothing to declare' or 'nothing new to declare' format. In fact, only 20-30 states report the data on their defence programmes, vaccine production in publications and other formats approved by the CBMs system, which is about 15-20% of total parties to BTWC<sup>102</sup>.

Very little is known to the wide public about how the state parties use CBMs declarations when they access them. Access to such information allows a party to benchmark its national compliance against other parties. For instance, if a state reviews all submitted CBMs annually to check for any new maximum containment facilities (BL4) and biodefence programmes, and compares it against the previous reports and other resources, it can definitely track the changes in the biotechnological potential of the nations which submit data on a regular basis.

Technically, restricting the access to CBMs declarations can potentially raise suspicions about the national BW programs. This concept apparently influenced some states to submit their CBMs declarations in general access. First statements have been in open access since 2006.

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<sup>101</sup> Restricted access network: <<http://www.unog.ch/bwc/restricted>>.

<sup>102</sup> See detail statistical data and the list of reporting states in ISU reports. See documents: BWC/MSP/2007/3 of 27 November 2007, BWC/MSP/2008/3 of 28 November 2008, BWC/MSP/2009/2 of 10 November 2009, BWC/MSP/2010/2 of 28 November 2010, BWC/CONF.VII/INF.1 of 28 September 2011.

Russia does not publish data on national CBMs, unlike the US, Canada, the United Kingdom, Germany and a few other European NATO states. It is perceived that Russia is too secretive, which creates potential reasons for concerns (do they have anything to hide?).

The discussions on the confidence building measures at the Seventh Review Conference were focused on approaches to streamline the existing CBMs in order to boost the number of annual submissions.

Although the expansion of membership and the amount of data reported on each type of the CBMs, according to parties to the BTWC, cannot alleviate the compliance concerns, it can still improve transparency and confidence in the submitted data<sup>103</sup>.

The value of the CBMs will increase in combination with continuously updated national compliance data<sup>104</sup>.

It has been proposed that the ISU, in addition to CBMs statistics, would also analyse the trends, reflecting the qualitative and quantitative aspects of submissions without making any specific references to individual states.

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<sup>103</sup> Background information materials on the CBMs have been submitted in the following documents: BWC/CONF.VII/INF.1 (History and operation of the confidence-building measures. Background information document submitted by the Implementation Support Unit); BWC/CONF.VII/WP.6 (Confidence-Building Measures: proposal for modification of Form D. Document submitted by Belgium); BWC/CONF.VII/WP.9 (Review and update of the Confidence-Building Measures. Document submitted by Germany, Norway and Switzerland); BWC/CONF.VII/WP.14 (Confidence Building and Compliance: two different approaches. Document submitted by Germany); BWC/CONF.VII/WP.19 (Confidence-Building Measures. Documents submitted by South Africa); BWC/CONF.VII/WP.21 (Working Paper on the Confidence Building Measures. Document submitted by Norway, Switzerland and New Zealand); BWC/CONF.VII/WP.25 (Strengthening the existing Confidence-Building Measures: submission and review process. Document submitted by Canada); BWC/CONF.VII/WP.28 (A peer review mechanism for the Biological Weapons Convention: enhancing confidence in national implementation and international cooperation. Document submitted by France).

<sup>104</sup> The ISU maintains and updates an online database of national implementation. The database stores information on national programs relevant to the Convention. Where possible, the ISU summarizes the activities and reference to the full text of the tool. As of end of 2011, database held the information on 131 state parties, which is 80.3% of the BTWC membership. Find database at the ISU web-page. See: <<http://www.unog.ch/bwc/NID>>.

Despite a wide range of the CBMs discussions, decision has been made only on one subject – revision of submission formats. In particular: form 'D', dealing with the scientific information exchange between scientists and facilities operating in bioresearch relevant to the Convention, has been removed<sup>105</sup>. Apparently, it happened because this information can be also submitted under CBMs 'C' (Encouragement of publication of results and promotion of use of knowledge relevant to the Convention).

## Results and plans

The Final Document of the Seventh Review Conference was adopted on 22 December 2011<sup>106</sup>. It represents essentially an advanced version of the Final Document adopted by the previous Review Conference in 2006.

The Conference reaffirmed the integrity and relevance of the BTWC provisions. The parties succeeded in formulating common vision of the implementation of the Convention and focusing on priority issues in the next five year inter-sessional programme.

The Conference reaffirmed the importance of regular information exchange in the area of national biological activities.

For the first time in the last twenty years the technical modifications have been agreed which involved the forms (the same for all states parties) of the submission of relevant information. This agreement will help to extend CBMs to all states parties and improve the quality of the information exchange.

State parties agreed to establish a database in order to improve the efficiency of the cooperation and assistance in getting an access to modern biotechnology.

The database is expected to accumulate information on the assistance any individual state party needs and identify which of the technologically advanced states could volunteer to offer such help.

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<sup>105</sup> See: The Final Document of the Seventh Review Conference. Annex I. Revised forms for the submission of the Confidence-Building Measures. Document BWC/CONF.VII/7 of 13 January 2012.

<sup>106</sup> The Final Document of the Seventh Review Conference. Document BWC/CONF.VII/7 of 13 January 2012. See all Conference documents at <[http://www.unog.ch/80256EE600585943/\(httpPages\)/F1CD974A1FDE4794C125731A0037D96D?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/F1CD974A1FDE4794C125731A0037D96D?OpenDocument)>.



However, the fact that over 30 states are still outside the BTWC regime raises a lot of concern. Universalization of the BTWC remains a high priority.

It is extremely unlikely that Middle East nations – Egypt, Israel and Syria – will be joining the Convention anytime soon, since they tend to view the BWTC membership as a process closely associated with the general political settlement in the region.

The lack of efficient international control under the Convention stands out as a serious deficiency of the BTWC regime.

Back in 2001 the US unilaterally decided to withdraw from the process of elaborating the relevant protocol to the BTWC. Washington remained firm in its position, which Ms. Hillary Clinton, the US State Secretary, confirmed in her statement at the Review Conference.

Along with acknowledging the importance of the BTWC among other international disarmament treaties, she also voiced her concern because ‘even as it becomes easier to develop these weapons, it remains extremely difficult ... to detect them, because almost any biological research can serve dual purposes. The same equipment and technical knowledge used for legitimate research to save lives can also be used to manufacture deadly diseases. So, of course, we must continue our work to prevent states from acquiring biological weapons’<sup>107</sup>.

The US believes the following steps will bolster the BTWC:

First, we need to develop a system to ensure that all states meet their obligations under the Convention. However, that could not be achieved through inspections, which the US believes are inefficient, but rather through revisions to the annual reporting system and the list of questions each party needs to answer, especially re-

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<sup>107</sup> According to Clinton, ‘less than a year ago, al-Qaida in the Arabian Peninsula made a call to arms for ... ‘brothers with degrees in microbiology or chemistry to develop a weapon of mass destruction’. She reminded about the 2001 bio-terrorist attacks in the US that killed 5 people, 17 got sick and over 10 000 were required to take antibiotics. US Department of State, ‘Secretary

Clinton’s Remarks at the 7th Biological and Toxin Weapons Convention Review Conference’, <<http://www.state.gov/secretary/rm/2011/12/178409.htm>>.

garding measures to prevent BW development and transparency of bio-research programmes;<sup>108</sup>

Second, we need to strengthen each state's ability to detect and respond to bio-threats through expansion of international cooperation and strict adherence to international health care and sanitary standards developed by the WHO;

Third, we need to build an international dialogue to improve the efficiency and mitigate the risk of bio-research programs and balance the freedom of scientific research and innovation and the risk of misuse.

Basically, the US proposals designed to strengthen the BTWC received a wide support by many countries, and are in line with the Russian policies, with an exception of the position on verification program under the BTWC.

Russia has been repeatedly proposing at the BTWC fora to resume the negotiations on the Verification Protocol suspended in 2001.

There is a feeling that the work on the Verification Protocol will not be resumed in the near future, although many state parties of the BTWC support the idea of a control mechanism.

The approval of the next inter-sessional programme has been an important outcome of the Seventh Review Conference. Annual meetings of experts and state parties of the BTWC will continue to serve as the format of the inter-sessional programme.

However, there has also been an amendment – three groups of topics will be discussed on a regular basis in the inter-sessional period, which means that there will be relevant discussions both at the meetings of experts and at the meetings of state parties in the period of 2012-2015. The topics include: the cooperation and assistance in the implementation of peaceful bio-technologies (especially strengthening the cooperation and assistance under Art. X); the review of scientific and technological developments relevant to the Convention and the strengthening of national implementation under the Convention.

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<sup>108</sup> Under this initiative, the US plans to host an international forum on health and security to exchange views on bio-terrorism threats and discuss the US biological research programs – as a step to implement the US National Strategy for Countering Biological Threats developed in 2009.

Besides, the Conference stated that, in addition to these standing topics in 2012-13, there will be continuing discussions of the ways to enhance the states' participation in confidence-building measures.

The Conference decided to discuss in 2014-15 the methods of assistance (including the working out of detailed procedures and mechanisms) in the event a state was put in danger as a result of the violation of the Convention obligations (the implementation of Art. VII of the BTWC).

The Conference decided that the following topics will be addressed as a standing agenda item on cooperation and assistance:

- Reports by the state parties on their implementation of Art. X of the BTWC and reports by the ISU on the operation of the database system to facilitate assistance requests and offers;
- Education, training, exchange and twinning programmes and other means of developing human resources in biological sciences and technology relevant to the implementation of the Convention, particularly in developing countries;
- Capacity-building, through international cooperation, in biosafety and biosecurity, and for detecting, reporting, and responding to outbreaks of infectious disease or biological weapons attacks and others.

The Conference moved to establish a database system to facilitate requests for and offers of exchange of assistance and cooperation among the state parties and establish sponsorship program, funded by voluntary contributions from the state parties.

As part of the second standing agenda item on review of developments in the field of science and technology related to the Convention, the Conference decided to address the following topics: new science and technology developments that have potential for uses contrary to the provisions of the BTWC; new science and technology developments that have potential benefits for the BTWC; voluntary codes of conduct and other measures to encourage responsible conduct by scientists, academia and industry; science- and technology-related developments relevant to the activities of multilateral organizations such as the WHO, OIE, FAO, IPPC and OPCW and a few other topics.

The special focus during the discussions of the second standing agenda item should be made on:

- Advances in technologies for surveillance, detection, diagnosis and mitigation of infectious diseases, and similar occurrences caused by toxins in humans, animals and plants (to be considered in 2013);
- Advances in the understanding of pathogenicity, virulence, toxicology, immunology and related issues (to be considered in 2014);
- Advances in production, dispersal and delivery technologies of biological agents and toxins (to be considered in 2015).

The Conference decided that the following topics will be addressed under the third standing agenda item on strengthening national implementation: a range of specific measures for the full and comprehensive implementation of the Convention, especially Art. III and IV; ways and means to enhance national implementation, sharing best practices and experiences, including the voluntary exchange of information among state parties on their national implementation; national, regional and international measures to improve laboratory biosafety and security of pathogens and toxins.

The approved agenda for the next inter-sessional program demonstrated that the BTWC conferences have become an important international scientific forum. However, there are still some doubts concerning its ability to resolve the fundamental issues of BTWC universalization, prevention of new types of BW as well as their potential use, including in the regional armed conflicts or acts of bioterrorism.

The Eighth Review Conference is planned for 2016.

## **6. DEVELOPING THE ARCTIC: SECURITY ISSUES**

Andrei ZAGORSKI

The consequences of climate change are the major cause for the growing interest in the Arctic. Due to progressing warming, the multi-year ice cover is retreating. Ever larger parts of the Arctic waters are ice free in the summer. The Arctic Ocean becomes more accessible for the exploration and the development of mineral resources, fishery and navigation. Due to high energy prices, the region which is supposed to be rich in oil and gas attracts growing interest.

The attention extended to the Arctic has triggered projections of mounting inter-state competition primarily for the access to its hydrocarbon resources.

Will governments manage to agree on cooperative solutions to problems rising in the Arctic within the existing institutions and on the basis of the international law, or will they pursue unilateral strategies seeking to maximize their benefits?

A comprehensive analysis of the contemporary Arctic agenda suggests that there is no ground to dramatize the problems of the region. They all can be resolved in a rational and cooperative manner within the framework of existing international regimes and institutions which may be complemented, as necessary, by new arrangements.

The risk of an inter-state armed conflict in the Arctic is negligibly low.

There is no ground for such a conflict in form of irresolvable disputes between states regarding the delimitation of maritime boundaries in the Arctic Ocean. The legal status and legal regimes of the maritime areas are not disputed. Most of the disputes that

have arisen over the past decades as a consequence of the extension of the exclusive economic zones of the littoral states have been settled. The few issues which have remained open can be resolved in negotiations or within international institutions.

In this respect, the Russian Federation finds itself in a benevolent situation since it is not involved into any disputes concerning the delimitation of the maritime boundaries with its neighbours in the Arctic.

Due to the clearly defined boundaries of the sovereign rights and of the jurisdiction of the littoral states in the Arctic Ocean, the access to mineral resources of the continental shelf or to biological resources of the ocean can hardly become an issue of inter-state contest.

The Arctic is not at risk of becoming an arena of inter-state military hostilities or of an arms race. Except for the remaining military-strategic activities of Russia and the USA inherited from the Cold War times, the littoral states have no deployed armed forces in the Arctic. Nor do they plan to deploy such forces there.

Instead, they build the capabilities to respond to emergencies of different sorts, the probability of which significantly increases as the economic activities in the region grow. The issues at stake include, first and foremost, the environmental security, maritime safety, transnational threats as well as, most importantly, the appropriate adaptation of the population of the region and particularly of the indigenous population, as well as of the relevant economic activities to the increasingly acute consequences of the continuous climate change.

### **Delimitation of the maritime boundaries**

The limits of the sovereignty and of the jurisdiction of the five littoral states of the Arctic Ocean – Canada, Denmark (with respect to Greenland), Norway, the Russian Federation and the USA – are defined in accordance with the provisions of the international law of the sea, first and foremost of the 1982 United Nations Convention on the Law of the Sea<sup>109</sup> (UNCLOS). The respective rights

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<sup>109</sup> United Nations Convention on the Law of the Sea, <[http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf)>

of the Arctic states are not contested. The few exceptions are discussed below.

The *sovereignty of the coastal states* extends beyond the internal waters to the territorial sea (12 nautical miles). Apart from this, the *jurisdiction of the coastal states* extends to the economic activities in their exclusive economic zones (200 miles). They also exercise *sovereign rights* for the purpose of exploring and exploiting the natural resources of the continental shelf. The latter usually coincides with that of the exclusive economic zone but can be extended to a maximum of 350 nautical miles if the coastal state proves that its shelf extends beyond the 200 mile zone. These provisions are particularly important for the purpose of the definition of the limits of the sovereign rights of states for the purpose of exploring and exploiting the oil and natural gas deposits, as well as of other mineral resources on the shelf of the Arctic seas.

At the same time, foreign vessels (not only those of the littoral states) are granted the rights for *innocent passage in the territorial seas of coastal states*, for *transit passage through the straits used for international navigation*. In the 200 mile zone, all states enjoy the *freedom of navigation and overflight*. They also enjoy the right to lay submarine cables and pipelines, erect artificial islands and other installations, fish, and carry out marine scientific research with the consent of the coastal nation and in compliance with the laws and regulations it has adopted.

Neither the sovereign rights nor the jurisdiction of the coastal states extend to the high seas beyond the exclusive economic zones. Here applies the *freedom of the high seas* – freedom of navigation and overflight; to lay submarine cables and pipelines; to construct artificial islands and other installations; of fishing and of scientific research. The seabed in this area is considered the ‘common heritage of mankind’ with the International Seabed Authority being responsible for regulating and managing the exploration and exploitation of resources in this area.

The extension of the exclusive economic zones by the coastal states from 12 to 200 nautical miles in the last quarter of the XX century resulted in the emergence of competing claims wherever those zones overlapped. Overlapping claims occurred practically between all littoral Arctic states. In each individual case, this required from them to reach an agreement on the *delimitation of the boundaries of the economic zones and of the continental shelf*. By

now, *most of the issues related the delimitation of the maritime boundaries, of the exclusive economic zones and of the continental shelf of the Arctic states are settled by bilateral agreements.*

In 1990, the Soviet Union signed an agreement on the delimitation of the maritime boundaries with the USA in the Bering and the Chukchi seas. It is not yet ratified by the Russian parliament but is provisionally applied. However, the boundary itself is not disputed. The delayed ratification is mainly due to the yet unsettled question of compensation for the losses incurred by Russian fishermen. The issue is expected to be resolved by a bilateral fisheries agreement<sup>110</sup>.

In September 2010, the Russo–Norwegian Treaty on the delimitation of maritime boundaries and cooperation in the Barents Sea and the Arctic Ocean was signed<sup>111</sup>.

As a result of the agreements reached over the past forty years, *only few maritime boundaries in the Arctic remain unsettled.* These concern primarily a few disputed boundaries of Canada with Denmark and the USA.

The fisheries protection (not an exclusive economic) zone introduced by Norway around Spitsbergen (Svalbard) in order to prevent uncontrolled fishing is not recognised.

### **The outer limits of the continental shelf**

The application of the UNCLOS provisions has raised other issues. They are resolved by states on the basis of the norms of and the mechanisms established by the Convention, including the procedures for the peaceful settlement of disputes. It was particularly the intention of the coastal states to extend the outer limits of their continental shelf in the Arctic beyond the exclusive economic zones which, during the past decade, triggered concerns of eventual interstate conflicts.

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<sup>110</sup> On this see: Glubokov, A., Glubokobskii, M., ‘International Legal Regulation of Fisheries in the Arctic Seas’, ed. A. Zagorski, *The Arctic: an Area of Peace and Cooperation* (IMEMO RAS: Moscow, 2011), pp. 111–116.

<sup>111</sup> For more on the Russo–Norwegian delimitation see: Konyshev, V., Sergunin, A., *The Arctic in International Politics: Cooperation or Competition?* (RISI: Moscow, 2011), pp. 47–52; Glubokov, A., Glubokobskii, M., ‘International Legal Regulation of Fisheries in the Arctic Seas’, pp. 111–116.



Claiming an extension of the breadth of the continental shelf is not unusual. This is a right of the coastal states under Art. 76 of UNCLOS<sup>112</sup>. The Convention defines the procedure of exercising this right as well as of resolving eventual disputes. It is not surprising that the issue caused many debates particularly during the past decade and a half.

In accordance with the rules of procedure of the Commission on the Limits of the Continental Shelf, the respective submissions, including the evidence supporting the claims that the continental shelf of a country extends beyond its exclusive economic zone, shall be made within ten years of the entry into force of the Convention for that state<sup>113</sup>.

Russia<sup>114</sup> and Norway submitted to the Commission the claims for extending their continental shelf in 2001 and 2006. Upon the examination of the Russian submission, the Commission requested in 2002<sup>115</sup>, additional data providing evidence that the underwater Lomonosov and Mendeleev ridges represent extensions of the Russian landmass.

The submission of Norway related to the establishment of the outer limits of its continental shelf in three separate areas including the Loop Hole in the Barents Sea. Evidence submitted by Oslo was accepted by the Commission in 2009. However, the Commission recommended Norway to proceed with the delimitation of the continental shelf in the Loop Hole by agreement with the Russian Federation since the shelf in the area was the extension of not only the Norwegian but, also, of the Russian landmass<sup>116</sup>. The delimitation was concluded in 2010 by the Russo–Norwegian treaty.

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<sup>112</sup> Corell, H., ‘The Arctic. An Opportunity to Cooperate and to Demonstrate Statesmanship’, *Vanderbilt Journal of Transnational Law*, vol. 42 (2009), p. 1068.

<sup>113</sup> ‘Rule 45, Submission by a Coastal State’, *Rules of Procedure of the Commission on the Limits of the Continental Shelf*, p. 16.

<sup>114</sup> Russia claimed the extension of its continental shelf not only in the Arctic Ocean but also in the Okhotsk Sea.

<sup>115</sup> CLCS/34, 02-45293 (R).

<sup>116</sup> ‘Summary of the Recommendations of the Commission on the Limits of the Continental Shelf in regard to the submission made by Norway in respect of areas in the Arctic Ocean, the Barents Sea, and the Norwegian Sea on 27 November 2006’, p. 9.

Canada and Denmark (with respect to Greenland) gather data to submit their claims for the extension of the outer limits of their shelf in the Arctic Ocean. For Canada, the deadline for making the submission expires in November 2013, while for Denmark – in December 2014<sup>117</sup>. Denmark has already announced that it will make a submission with regard to three separate areas of the shelf. One of them is located to the north of Greenland, extends to the North Pole and overlaps with claims by other states<sup>118</sup>.

The United States, which has not ratified UNCLOS, is also collecting data to support its claims.

It is exactly the possibility of overlapping claims by states for extending their sovereign rights for exploring and developing the resources of the seabed in the area of the North Pole which is considered by policy-makers and experts in different countries as an eventual cause for a potential conflict in the Arctic. It is important to note, however, that *there is no race between the states for being the first to assert their right to extend the outer limits of their continental shelf through the North Pole*.

As a matter of practice, overlapping claims can long remain unresolved without jeopardizing inter-state relations if the dispute does not affect practical decisions concerning, for instance, the exploration on the shelf. Since the central area of the Arctic Ocean is not considered promising from the perspective of discovering significant reserves of hydrocarbons<sup>119</sup>, any settlement of any potential dispute would be rather of a symbolic nature.

In May 2008, in the Declaration adopted in Ilulissat, Greenland, the foreign ministers of the five Arctic coastal states confirmed the commitment to the international maritime law. They recalled that ‘an extensive international legal framework’ applied to the Arctic Ocean and that ‘notably, the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea’.

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<sup>117</sup> Denmark already has submitted claims with regard to two areas of the shelf of Faroe Islands.

<sup>118</sup> *Kingdom of Denmark Strategy for the Arctic 2011–2020* (Ministry of Foreign Affairs: Copenhagen, 2011), pp. 14–15.

<sup>119</sup> Telegina, E., ‘Developing natural resources’, eds A. Dynkin and N. Ivanova, *Russia in a Polycentric World* (Ves’ Mir: Moscow, 2011), p. 481.

The Ilulissat Declaration reconfirmed the commitment of the five littoral states 'to this legal framework and to the orderly settlement of any possible overlapping claims'<sup>120</sup>. The five Arctic states agreed to develop scientific and technical cooperation in preparing and promoting their submissions regarding the extension of the outer limits of their continental shelf<sup>121</sup>.

There is no direct mention of UNCLOS in the Declaration for the single reason: the US has not yet ratified it. At the same time, it is entitled to the rights spelled out in the Convention and applies most of its provisions having declared the abidance by the norms of customary international maritime law<sup>122</sup> codified in UNCLOS, and being party to the 1958 Geneva Conventions on the Law of the Sea.

### **International navigation**

The issue of the regulation of the navigation gradually moves on the Arctic agenda thus raising the question of the limits of the jurisdiction of the coastal states particularly in the Canadian Northwest Passage and the Russian Northern Sea Route.

Whereas Canada regards the Northwest Passage as part of its internal waters, the US and other countries uphold the right to transit passage through the straits used for international navigation between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone. The

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<sup>120</sup> 'The Ilulissat Declaration, Arctic Ocean Conference', Ilulissat, Greenland, 27–29 May 2008, <[http://www.oceanlaw.org/downloads/arctic/Ilulissat\\_Declaration.pdf](http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf)>.

<sup>121</sup> Statement by Ambassador A. Vasiliev, representative of the Russian Federation in the Committee of Senior Officials in the Arctic Council, at the International Arctic Forum 'The Arctic, a Territory for Dialogue', Moscow, 22–23 Sep. 2010, <<http://www.mid.ru/bdcomp/ns-dos.nsf/45682f63b9f5b253432569e7004278c8/c85bcbec54d02d89c32575bc00243e13!OpenDocument>>.

<sup>122</sup> Corell, H., 'The Arctic. An Opportunity to Cooperate and to Demonstrate Statesmanship', pp. 1076–1077. At the same time, non-participation in UNCLOS defines several differences in the US' obligations under international maritime law. These differences particularly apply to delineation of the outer limits of the continental shelf, the breadth of which, according to the 1958 Convention, each state can establish by itself on the basis of the principle of exploitability.

rules of transit passage do not apply only if there exists another route through the high seas or through an exclusive economic zone of similar convenience. This issue also applies to the Russian Northern Sea Route.

Since, at present, navigation through the Northern Sea Route and Northwest Passage is restricted or impossible due to the ice conditions, this question is not yet acute.

Canada and Russia rely on Art. 234 of UNCLOS which gives them 'the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering in such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.'

By referring to this article, Canada and Russia used to legitimize special navigation rules in the Northwest Passage and the Northern Sea Route. However, it is legitimate to raise the question of the applicability of Art. 234 if the respective routes become ice free longer than six months a year as a result of climate change. After all, the anticipation of significant intensification of vessels traffic in the Arctic is related precisely to this prospect.

When discussing the issue of the national and international regulation of the navigation, it is important to consider that *the existing differences in the positions of individual states do not represent a dispute of any coastal states over sovereignty or jurisdiction in the respective waters. Neither the sovereign rights nor the jurisdiction of the coastal states are questioned.*

What is disputed is the limit on their jurisdiction in accordance with UNCLOS when other states seek to exercise their right to innocent or transit passage.

Issues of the regulation of international navigation are subject to deliberations within the International Maritime Organization (IMO). Its competence includes rules of navigation, prevention of the marine pollution from ships, and maritime safety.

### Access to mineral resources

The continental shelf of the Arctic seas is expected to contain large deposits of mineral and, in the first instance, of hydrocarbon resources, although a large part of the expected resources of the region still needs to be explored and assessed. Anyway, the *probability of a conflict over the access to the Arctic energy resources is very low*.

The coastal continental shelf area of the Arctic Ocean is considered the most promising from the viewpoint of the exploration and development of hydrocarbon resources. This is the area of exclusive economic zones in which sovereign rights of the coastal states for the purpose of exploring and developing the resources of the seabed are not disputed. Russia is no exception in this sense. The deposits located in Russia's economic zone account for 98% of the explored and preliminarily estimated reserves of natural gas on the Russian shelf.

Sovereign rights of Russia are not disputed in this area. The Russian Arctic shelf (as the Arctic region in general) is rich primarily in gas, less so in oil. 98% of the explored and preliminarily assessed reserves of the Russian Arctic shelf are located in 27 unique or large deposits within the 200 mile exclusive economic zone<sup>123</sup>. The Russian Federation exercises sovereign rights for exploring and developing of respective deposits there.

As far as the resources of the seabed in the area beyond the exclusive economic zones and of the outer limit of the continental shelf of the coastal states are concerned, the prerogative of regulating and managing their exploration and development belongs, according to UNCLOS and the 1994 follow-up agreement, to the International Seabed Authority.

Admittedly, this provision was most controversial during the negotiation of the Convention and, therefore, required many compromises which were complemented by the 1994 accord. However, one important consequence flows from the UNCLOS provisions as well as from the customary international maritime law as it was shaped before 1982: coastal states cannot pretend to exercise sovereign rights in this area of the seabed or limit the freedom of other

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<sup>123</sup> Telegina, E., 'Developing natural resources', p. 484.

states (both Arctic and non-Arctic) to explore and develop mineral resources of the area.

### Demilitarization of the Arctic

The above analysis suggests that, in the contemporary Arctic, there are no unresolved disputes which can lead to an inter-state conflict. Nevertheless, concerns over an eventual militarization of the region<sup>124</sup> were repeatedly voiced in the past years. More often military activities and exercises in the Arctic region – in Canada, Norway or Alaska, – as well as programmes of modernizing and upgrading armed forces and military infrastructure usually serve as evidence for this conclusion.

The analysis of the military potential of the Arctic states as well as of programmes for its modernization, however, does not support these concerns. *It is not the tendency towards militarization but, rather, the one towards a gradual demilitarization of the Arctic that can be established.* Littoral states do not prepare for an eventual armed conflict in the region. Except for the Russian Northern Fleet, there are virtually no deployed armed forces in the marine Arctic. Nor does any state plan to deploy them there.

The Russian Northern Fleet is not only the largest but the single naval force permanently deployed in the Arctic<sup>125</sup>. However, it was deployed during the Cold War years as one of the components of the strategic confrontation between the Soviet Union and the USA, and not for the purpose of specific Arctic operations<sup>126</sup>.

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<sup>124</sup> Konyshov, V., Sergunin, A., *The Arctic in International Politics: Cooperation or Competition?*, pp.134–141; Apanasenko, V., Oznobishchev, S., ‘Conventional Security Issues in the Arctic’, *The Arctic: an Area of Peace and Cooperation*, p. 98. The latter authors refer to ‘prerequisites for increasing military-political tensions’ between the Arctic states.

<sup>125</sup> Permanently deployed Russian naval forces in the Arctic count nearly 100 surface ships. See: Apanasenko, V., Oznobishchev, S., ‘Conventional Security Issues in the Arctic’, p. 97.

<sup>126</sup> For more on the strategic activities in the Arctic see: Arbatov, A., Dvorkin, V., ‘Military-Strategic Activities of Russia and the U.S.’, *Russia in a Polycentric World*, pp. 473–480; Arbatov, A., ‘The Arctic and the Strategic Stability’, *The Arctic: an Area of Peace and Cooperation*, pp. 59–74; Dvorkin, V., ‘BMD and Security in the Arctic’, *The Arctic: an Area of Peace and Cooperation*, pp. 75–86.

The primary mission of its warships, submarines as well as anti-submarine and air defence systems was to protect Russian strategic ballistic missile submarines as well as to obstruct the maritime communications of the US and NATO in the North-Eastern Atlantic. Admitting the strategic mission of the Northern Fleet as opposed to the regional one, Russian experts usually exempt it from any calculations of the military balance in the region. However, this implies that similar forces of other states should be exempted too.

It was exactly strategic considerations that, since the Cold War, have determined the military importance of the Arctic in the postures of Russia, the USA and its allies. The flight trajectories of Russian and US ballistic missiles pass through the region. Their strategic bombers were based in Alaska and on the Chukchi Peninsula (in 2008 Russian strategic bombers resumed circumpolar flights).

American, French and British submarines occasionally visit the Arctic Ocean although they are not permanently deployed there. In the Arctic area (in the Russian Federation, the US, Canada, Norway and Greenland), air defence and anti-submarine systems as well as BMD radars are deployed.

During the past twenty years Russia, the USA and other NATO countries have substantially scaled down their strategic military activities in the Arctic. Particularly, the number of warships in the Northern Fleet of the Russian Federation shrank by seven times. The average number of annual naval exercises has been reduced six times and their scale – by almost five times<sup>127</sup>.

The region, which used to be a restricted area due to its strategic importance, started opening for cooperation, including for implementing programmes of improving the safety of storage and disposal of nuclear munitions and of decommissioned nuclear submarines.

***The shrinking Russian and US military strategic activities in the Arctic determine the scale of a gradual, although by far not yet completed demilitarization of the region.*** At the same time, the shrinking of the military strategic activities was not replaced by increased conventional naval activity of the Arctic states.

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<sup>127</sup> Apanasenko, V., Oznobishchev, S., 'Conventional Security Issues in the Arctic', pp. 96–97.

The *regular naval activities in the Arctic* are practically limited to those which are strategically relevant<sup>128</sup>. Neither the US nor Canada maintain there permanently deployed naval forces and reduce their presence to coastguard patrols. Royal Danish Navy maintains limited presence in the region (two frigates operating off Greenland). It is Norway which maintains a relatively large naval presence in the Arctic (except for the Russian Northern Fleet) including five Fridtjof Nansen class frigates, six Ula class submarines and support ships.

Due to the limited naval presence by the littoral states in the Arctic, when comparing their conventional (non-strategic) capabilities experts tend to take into account not only the forces deployed in the region but their overall naval capabilities. By doing so they presume that the Arctic states can redeploy to the region additional forces from other fleets. They admit that most of the warships of Arctic states which eventually can be redeployed to the Arctic 'are not capable to fulfil combat missions in the High North taking into account the contemporary (2011) ice and climatic conditions'. Their comparison is based, however, on the assumption that the redeployment option will become feasible in the foreseeable future which they link to the anticipating melting of the Arctic Ocean's ice cover<sup>129</sup>.

Apart from the absence of any reasonable motives for interstate conflict in the Arctic, the above method of comparing the overall instead of the Arctic military capabilities of the littoral states reveals the weakness of the projections of a forthcoming militarization of the Arctic. The outcome of the research by Russian experts referred to above as well as the first comprehensive study of the proper Arctic capabilities of the littoral states published by the Stockholm International Peace Research Institute (SIPRI) in March 2012<sup>130</sup> reveal that there is neither a risk of, nor any planning for arms race by the coastal states.

***The Arctic littoral states currently do not have ice strengthened warships, either surface or submarines.*** The only ex-

<sup>128</sup> Apanasenko, V., Oznobishchev, S., 'Conventional Security Issues in the Arctic', pp. 101–102.

<sup>129</sup> Apanasenko, V., Oznobishchev, S., 'Conventional Security Issues in the Arctic', p. 102.

<sup>130</sup> Wezeman, S.T., 'Military Capabilities in the Arctic', *SIPRI Background Paper*, Mar. 2012.



ception is the Russia Northern Fleet as well as the American, French and British submarines designed for strategic and not regional missions.

The USA, Canada, Norway and Denmark have surface ships suited for northern operations. But they do not have ice strengthened ships for combat missions in the Arctic. Only four Thetis class Danish offshore patrol frigates are ice capable up to 1 meter. But even this does not enable them to be deployed in the Davis Strait in winter.

The assumption that the ice situation in the Arctic will dramatically change in the coming decades as a result of the warming thus making redeployment of naval forces from other fleets to the Arctic possible represents an impermissible simplification.

It is the permanent ice which melts away as a result of the warming in the Arctic. However, the Arctic waters are covered by seasonal ice for the longer part of the year. Even the most far reaching projections of the climate change admit that the Arctic ice conditions are going to remain extremely difficult for navigation during the longer part of the year with the climatic conditions remaining extremely harsh<sup>131</sup>. This is why redeploying ships from the Atlantic and the Pacific fleets of the littoral states, which are neither constructed nor equipped for operating in the Arctic ice, is not a viable option.

A review of the military programmes of the Arctic states for the period between 2015 and 2025 reveals that ***they do not plan for the formation and deployment of naval potential capable of operating in the Arctic.***

The Canadian Navy plans to commission by 2017 six to eight patrol frigates for patrolling Arctic waters. Norway plans to commission two frigates. However, none of these ships is ice strengthened<sup>132</sup>. This is a reason why, particularly in Canada, the procurement of new ships remains controversial. Members of the

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<sup>131</sup> See, for instance: Konovalov, A., 'Transport Infrastructure of the Russian Arctic: Problems and Solutions', *The Arctic: an Area of Peace and Co-operation*, pp. 138–139.

<sup>132</sup> On the limits for the operation of the Canadian Halifax class frigates see: Forget, P., 'Bridging the Gap: The Limitations of Pre-AOPS Operations in Arctic Waters', *Canadian Naval Review*, vol. 7, no. 4 (Winter 2012), pp. 16–20.

relevant Senate committees assert that the Canadian northern waters should be patrolled not by the Navy but by the coastguard<sup>133</sup>.

The option of patrolling Arctic waters by the Navy as far as the permanent ice retreats was considered by the US. However, there are no particular plans for deploying naval forces in the region. After a short intensification of the interest to the military-political aspects of Arctic developments in 2008, regional issues lost their proficiency in the American politics in the years thereafter.

There is no reason to dramatize other declared plans for the modernization of the forces of the Arctic states either<sup>134</sup>.

The US mechanized infantry and airborne troops deployed at the bases near Anchorage and Fairbanks, Alaska, are not specifically earmarked for Arctic operations. In Norway, there are considerations of reducing by half the 'Northern Brigade', country's largest combat ready unit<sup>135</sup>.

The main programmes for the modernization of the Arctic capabilities by the littoral states (primarily by Canada and, to some extent, by Denmark with regard to Greenland) include:

- developing surveillance capabilities in the Arctic including a limited capability of off-shore patrolling of Arctic waters;
- developing the capabilities for rapid reaction to emergencies in the Arctic and, for this purpose,
- Training personnel for emergency operations in the Arctic.

<sup>133</sup> Pugliese, D., 'Use Coast Guard, not Navy. Senators want Navy to take backseat to Coast Guard in the Arctic', *Defence Watch*, 19 Jan. 2010.

<sup>134</sup> Canada has plans to replace 80 F/A-18 combat aircraft with 65 new F-35 fighters after 2020. However, these aircraft based not on the Arctic but on the Atlantic coast and in the centre of the country are destined not for Arctic missions but for the protection of the Canadian airspace from illegal penetration. The major plans for the modernization of the Canadian Arctic air capabilities include the replacement of the 18 anti-submarine aircraft CP-140, which are capable to patrol in the Arctic, with ten to twelve new aircraft after 2020. Canada also plans to replace transport aircraft C-130 with new search and rescue aircraft as well as to procure 6 unmanned aerial vehicles for maritime, including the Arctic patrol.

Norway plans to replace 60 F-16 combat aircraft with 56 F-35 fighters. However, the country does not have any tanker aircraft which significantly reduces the range of the fighters. Apart from this, the Norwegian defence authorities consider closing the main airbase in the north (in Bodø) and move it to the south of the country. See: Wezeman, S. T., 'Military Capabilities in the Arctic', pp. 3, 7.

<sup>135</sup> Wezeman, S.T., 'Military Capabilities in the Arctic', pp. 12, 8.

With regard to the Russian policy, the major attention has been drawn in the past years to the news implying the forthcoming formation of Arctic forces and particularly of two airborne brigades on the Kola Peninsula in addition to an army brigade already deployed there. However, the Russian policy in the region<sup>136</sup> has essentially developed in the same direction as the policies of other Arctic states. In 2008, the Security Council of the Russian Federation endorsed decisions to form Arctic coastguard, to reintroduce border guard forces, and to develop comprehensive surveillance capabilities in the Arctic. By 2015, 10 rescue centres of the Ministry for emergency situations shall be established along the Russian Northern Sea Route.

***Arctic states prepare not for a traditional inter-state armed conflict but, rather, to counter new risks and threats which they anticipate as a result of the climate change, the growing economic activities and the developing of the marine Arctic.***

This justifies the conclusion that there is no objective danger of a militarization of the region. It would not be fair, however, to neglect the current debates which do not dismiss such an option. These debates reveal a clear case of ‘securitization’ of the Arctic agenda while the littoral states suspiciously watch the activities of their neighbours and the modernization of their military forces.

This trend in the Arctic debate makes it reasonable for the littoral states to consider appropriate confidence-building measures and to develop closer security cooperation in order to minimize the effect of the exaggerated concerns expressed with regard to an eventual ‘militarization’ of the region.

### **New security challenges in the Arctic**

New security challenges are generated primarily as a consequence of the observed and anticipated climatic changes, as well as of the growing economic activities in the Arctic Ocean following the melting of its multi-year ice cover. These developments urge the Arctic states to improve cooperation.

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<sup>136</sup> Konyshov, V., Sergunin, A., *The Arctic in International Politics: Cooperation or Competition?*, pp. 58–61.

The anticipation of the growing economic activity in the marine Arctic is associated primarily with the prospects of developing mineral resources on the shelf, growing vessel traffic, as well as with extending fisheries to the Arctic seas in which no industrial fishing activities were pursued until recently.

The changing Arctic climate itself – the warming effects, the retreating multi-year ice cover as well as the degradation of the permafrost – significantly affects the region:

- unique Arctic ecosystems degrade;
- some species disappear and are replaced by others;
- substantial social and economic consequences result from the erosion of the coastal line and the rise of the sea level, disruption of the traditional economic environment and of the way of life of the indigenous population, degradation of the engineering constructions and of other infrastructure (i.e. coastal facilities, roads, electricity lines, pipelines etc.).

***All these developments transform the Arctic into an area of increased risk<sup>137</sup> and raise the whole range of issues related to human security.***

The growth of economic activities on shore and in the marine Arctic, which is anticipated due to the continuous warming of the climate, results in the increased anthropogenic impact on the ecosystems. It also generates new security challenges, including in the increasingly accessible Arctic waters. ***The expansion of the economic activities generates new security challenges and exacerbates the existing ones.*** Those challenges, however, are unlikely to increase the likelihood of inter-state conflict or hostilities.

The Arctic security agenda will be increasingly dominated by such issues as maritime safety, as vessel traffic in the Arctic seas increases; the danger of pollution of the marine environment from ships and from land grows; the danger of oil spills and other damage to the environment as the exploration and development of the shelf's natural resources increases; the scope of transnational threats, particularly of illegal migration, transnational organized crime or terrorist activities grows.

These developments demand an adequate response from the littoral states to which they are hardly prepared now. In particular,

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<sup>137</sup> Konovalov, A., 'Transport Infrastructure of the Russian Arctic: Problems and Solutions', pp. 139–140.

they demand higher standards of maritime safety in the Arctic seas, including the prevention of the marine pollution from ships.

The growing vessel traffic in the hard conditions of the Arctic increases the probability of the occurrence of hazardous situations. This requires from states to augment their capacity for search and rescue operations. The development of the mineral resources of the Arctic shelf raises the importance of the preparedness for reacting to eventual emergencies. The risks related to eventual illegal transnational activities in the increasingly accessible Arctic area demand for improving the capabilities of the coastguards of the Arctic states.

An adequate response to those challenges presumes the enlargement, not a reduction of the ice-breaking fleets of the coastal states; the strengthening and modernization of coastguard forces; the development of modern surveillance systems, including space surveillance. The effectiveness of most if not of all responses by individual states would be increased by expanding bilateral and multi-lateral cooperation.

In the recent years, *steps were taken in order to improve security cooperation by the Arctic states*.

Issues related to the regulation of the vessels operations are subject to deliberations within the IMO. The 2002 facultative IMO Guidelines for ships operating in the Arctic ice-covered waters were amended in 2009. The new Guidelines for ships operating in Polar waters, in effect from 2011<sup>138</sup>, cover both the Arctic and the Antarctic. Those guidelines provide recommendations for vessels operating in ice-covered waters, such as requirements for ships construction and equipment, qualifications of ice navigators, environmental protection etc. Since 2010, the IMO began considering the drafting of a Polar Code which, in contrast to the current guidelines, should be mandatory.

In 2008, member states of the Barents Euro-Arctic Council (BEAC) signed an intergovernmental Agreement on emergency prevention, preparedness and response in the Barents Region. The BEAC countries, including the Russian Federation, hold joint emergency prevention exercises.

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<sup>138</sup> Resolution A.1024 (26) 'Guidelines for ships operating in Polar waters', adopted by International Maritime Organization, 2 Dec. 2009.

In May 2011, an Agreement on cooperation on aeronautical and maritime search and rescue in the Arctic was signed within the Arctic Council. The agreement defines individual and common areas of responsibility by the eight member states as regards rescue operations. Also in May 2011, the foreign ministers of the Arctic Council member states agreed to draft a pan-Arctic agreement on cooperation in preparedness and response to oil spills. Other decisions have been taken in order to enhance cooperation of the Arctic Council member states including in the areas of the preservation of the marine environment as well as of the unique ecosystems in the Arctic region.

The evolving situation requires to further increase bilateral and to develop multilateral cooperation by coastguard forces. The littoral states gradually move to recognize the importance of holding joint exercises of those forces in the Arctic.

Military and particularly naval exercises represent a regrettable exemption from the practice of expanding cooperation by the Arctic states. Western countries (four out of the five littoral Arctic states are members of NATO, so are five out of the eight members of the Arctic Council) regularly hold exercises, particularly in Canada and Norway. Russia remains exempted from these activities except for common exercises, including naval, with Norway.

Establishing a practice of inviting all Arctic states to participate in and to observe exercises held in the region could become an important measure not only to improve cooperation between the coastal states but also to build confidence among them, thus minimizing the development of the negative trends.

## **7. TACTICAL NUCLEAR WEAPONS AND THE NATO-RUSSIA DIALOGUE**

Marianna EVDOTYEVA, Dmitry CHIZHOV

On 12 March 2012, IMEMO RAN hosted an international conference ‘Tactical Nuclear Weapons and the NATO-Russia dialogue’. The Conference was organized jointly by the Institute of World Economy and International Relations of Russian Academy of Sciences, Institute for Peace Research and Security Policy of University of Hamburg, British American Security Information Council, Arms Control Association and Moscow office of the Friedrich Ebert Foundation and supported by William and Flora Hewlett Foundation.

The Conference discussions engaged scientists and experts from various Russian and international research centers, as well as the Ministry of Foreign Affairs and Ministry of Defence of the Russian Federation, the US Department of State, the Ministry of Foreign Affairs of Germany, the Ministry of Foreign Affairs of Poland, Bundestag of Germany, and the NATO Information Office in Moscow.

The Conference organizers – Alexander Dynkin, Director of IMEMO, member of the Russian Academy of Sciences, Reinhard Krumm, Head of Moscow office of the Friedrich Ebert Foundation, Oliver Meyer, representative of the Arms Control Association and Institute for Peace Research and Security Policy of University of Hamburg welcomed the participants. They emphasized the importance of further dialogue between Russia and NATO on contemporary factors of international security, including the issue of tactical nuclear weapons (TNW).

Because the Conference discussions were based on the Chatham House rule, this summary does not identify the names of the speakers.

The participants focused on resetting the relations between Russia and the US/NATO, and positive effects of the Treaty between the Russian Federation and the United States of America on Measures for Further Reduction and Limitation of Strategic Offensive Arms (New START) signed in Prague in 2010. The speakers noted that it largely meets strategic interests of the Russian Federation and the United States of America and both parties successfully observe their obligations.

The participants highlighted the close relation between various aspects of the military component in the international security, including the role of conventional forces, BMD, high precision weapons, space and strategic conventional weapons.

Experts presented key points of the official nuclear arms control policies of the Russian Federation, the USA and NATO.

Essentially, the US has formulated its current policy the following way: the United States supports multilateral nuclear arms control concept involving the reduction of all types of nuclear weapons – strategic and non-strategic, as well as deployed and non-deployed weapons. Following the signing of New START, the US approached Russia with the proposal to begin negotiations on the reduction of tactical nuclear weapons, largely a politically motivated move. (After the US Senate amended the resolution on New START ratification, President Obama promised in February 2011 to initiate, no later than one year after the ratification, negotiations with the Russian Federation to address the TNW stockpiles).

The following key points of the US strategic interests shaped this position.

A range of conditions affected the US stance on further reduction of nuclear arms.

Firstly, declining significance of nuclear weapons in the overall US military posture in favor of high-precision conventional weapons; long-range unmanned aerial vehicles (drones), as well as increasing importance of cruise missiles equipped with conventional warheads.

Secondly, Washington's objective is to strengthen the nuclear non-proliferation regime. To achieve the progress in the re-



gime compliance, the major nuclear powers would have to reduce their nuclear arsenals.

Since New START limits, along with the deployed and un-deployed delivery vehicles, only the number of *deployed warheads*, the United States is concerned with the uncertainty of their own and Russian non-strategic nuclear forces.

The United States offered the following arguments in favor of combining the negotiations on strategic and non-strategic nuclear weapons:

1. Russian superiority in the TNW area, as well as the fact that the majority of non-strategic nuclear warheads are stockpiled in storage sites impedes the progress in separate negotiations on different types of armaments;

2. Blurring distinctions between strategic and non-strategic nuclear weapons – which are distinguished primarily by the range of delivery vehicles;

3. Reduction of nuclear weapons should be made multilateral. The third countries, which should be involved in the multilateral negotiations, possess mostly non-strategic nuclear weapons.

In the meantime, some US officials acknowledged that the negotiations with Russia on further reductions in strategic and tactical nuclear weapons are hardly possible without expanding the general arms control agenda. It should include themes of interest to Moscow.

Interestingly, the debaters did not object the idea that the configuration of the European BMD could be later restructured to respond to new challenges (such as the anticipated Iranian nuclear-missile capability) or a new political environment.

Russian experts emphasized that Moscow views the implementation of New START, reinforcement of the NPT regime, progress in relations with the United States and NATO, including in the BMD and TNW areas, within the general strategic context.

Several speakers argued that the deployment of the European BMD without a due account of Russian interests undermines such strategic context. Such course of events, considering the link between strategic offensive and defensive weapons, could lead to consequences damaging Russian national security.

Russian participants expressed concern that the United States still kept their TNW in Europe. (Such tactical weapons are strategically important because of their immediate proximity to

Russian borders). Another concern is the conventional arms control stalemate in Europe (due to the United States and NATO attempts to link the conventional arms control with the local conflicts in Transcaucasia)<sup>139</sup>.

Some speakers referred to the very modest successes of Russia (comparing with the USA and NATO) in equipping its Armed Forces with modern weapons (including long-range drones) as well as to its insecure environment. Russia borders on nuclear-armed countries or the countries with significant ground forces seeking nuclear weapons and means of their delivery.

All these conditions increased the importance of tactical nuclear weapons for Russia's national security. The reverse is characteristic for the armies of the United States and European NATO countries, where the TNW lost its significance because of the inability to use them at the early stages of potential military conflicts.

Hence the fundamental difference between Russia's vision of non-strategic nuclear weapons and that of the United States and other NATO member states, as well as conflicting views on the limitation (reduction) of nuclear weapons.

The US views its tactical nuclear weapons as a critical element of nuclear deterrence, yet mostly supplementary to strategic nuclear weapons and modern conventional armaments.

According to the foreign participants, the United States and NATO assign TNW in Europe a 'political role'; in other words, they view TNW as assurance of a 'transatlantic link' in security sphere, as well as the material content of NATO's nuclear capability.

Russia, on the other hand, primarily uses its TNW to offset the neighbors' superiority (including NATO's) in conventional weapons and forces, as well as an instrument of control in the event of escalated military conflicts.

Having assigned such an important role to its TNW, Russia fundamentally opposes the format of further negotiations on the re-

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<sup>139</sup> Among other Russia's concerns which could potentially affect negotiations on nuclear arms reduction, Russian speakers stated the uncertainty of preventing the deployment of arms in outer space. The US does not support the draft treaty, submitted by Russia and China, and currently under review at the Conference on Disarmament in Geneva. Among the negative factors mentioned in the discussion were the United States' efforts to pursue the conception of the Prompt Global Strike or Conventional Prompt Global Strike (CPGS).

duction of nuclear weapons proposed by the United States, where such reductions would cover both strategic and tactical nuclear weapons.

Another key point of the Russian position on TNW is that Russia believes that any negotiation would be useless unless the United States removes its TNW (about 200 B61 nuclear bombs stored at six locations in five European states) from Europe and return them to its national territory, (as the Russian Federation did with its tactical nuclear weapons earlier)<sup>140</sup>.

Russian experts responded to NATO concerns regarding Russian TNW. They reminded their colleagues that, back in 1991-92, Russia reduced its non-strategic nuclear arsenal by three quarters, changed its status to non-deployed and consolidated it at the central locations within the national territory. Any concerns that Russia might want to use its TNW at the early stage of a military conflict are resolved by the Russian doctrinal documents on the nuclear weapons, which say that the nuclear weapons can only be used as a last resort against an aggressor (when it 'threatens the very existence of the state').

In response to the concerns that TNW could fall into terrorists' hands, the Russian experts noted that all nuclear munitions of the RF are protected by reliable interlocking systems against unauthorized use. (There are no confirmed cases of nuclear weapons lost or stolen).

Foreign participants presented the details of Washington's proposals on nuclear arms reduction and control.

The speakers emphasized two key points: 1. In order to advance the reduction of nuclear weapons, the United States would like to count the TNW warheads unaccounted since the 1990s in Russian and American nuclear arsenals; 2. This would involve, with due account of all associated challenges, exchanging the data on national arsenals, developing and approving a solid control and verification system with regards to tactical nuclear weapons and, most probably, conducting numerous bilateral inspections.

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<sup>140</sup> Russia's attitude towards the negotiations on TNW can also be explained by the specifics of the US proposals. Thus, some experts believe that the US prefers to work on the aspects where Russia still maintains parity, such as strategic and tactical nuclear weapons, but it avoids dealing with the aspects of arms control and reduction where the US has superiority, like the BMD, high-precision conventional weapons and outer space weapons.

Today, neither party has a clear definition of non-strategic nuclear weapons, nor there is an understanding of the technology and other means involved to ensure an efficient control of tactical nuclear weapons.

The United States would like to start the initial discussions with Russia on the issues, and determine how to include the non-strategic systems in the overall arms control process.

The US also proposes to discuss the Russian concerns of strategic stability (for example, the 'breakout potential' of the United States and the BMD configuration in Europe).

One of the proposals was to set a general limit for deployed and non-deployed strategic and non-strategic nuclear weapons for the Russian Federation and the United States. (Thus, it was proposed to set the overall limit of 2500 warheads and sublimit of 1000 strategic warheads and let both the Russian Federation and the United States choose any combination of strategic and non-strategic weapons based on national military needs and strategic interests).

Russian speakers, referring to the technical aspects of TNW reduction, commented that the reductions would need, in addition to significant investments, a sophisticated system of verification and control. In this case, inspecting the destruction of warheads at various storage locations would not be sufficient. On top of that, there should be a solid assurance that no new warheads are manufactured or stored elsewhere. (The solution would involve negotiating the quotas for manufacturing nuclear warheads and control of overall nuclear arsenals of the parties).

This system of nuclear arms control would be a lot more complicated and cumbersome than the one approved by New START. Specialists believe that this system would not be cost-effective either. Therefore, they recommend that the complex technical discussions should be preceded by confidence-building measures in the nuclear sphere. At the same time, efforts should be directed at creating a conducive environment for the dialogue on the key issues of security and arms control.

Potential confidence-building measures could involve improved transparency, including the exchange of information on the types and quantities of destroyed non-strategic nuclear weapons earmarked for destruction; and the types, quantities and locations of the nuclear weapons awaiting dismantlement. One should also mention the following suggestions (based on the joint Russian-US ex-

perience in the Cooperative Threat Reduction programme): organizing joint assessments of terrorists' capability to access the nuclear weapons storage sites; improving security at storage locations, as well as maintaining good practices of joint drills designed to prevent theft of nuclear weapons or fissile materials.

In general, both Russian and American experts acknowledged that any treaty limitations on TNW would inevitably involve considerable verifications problems.

One should also mention the theme of NATO-Russia relations in the context of common security problems and arms control, which was addressed at the Conference, as well as the difficulties in arriving at a compromise among NATO states in 2010 on the question of the Alliance nuclear strategy<sup>141</sup>.

The discussions covered the changes in the nuclear posture formulated in NATO's New Strategic Concept, including items concerning the TNW in Europe.

Foreign participants while indicating shortcomings in the activities of the Russia-NATO Council (RNC) noted that the dialogue on nuclear weapons, including TNW could be carried in this framework.

In general, the discussion demonstrated a significant disagreement between Russian and Western postures and views on nuclear weapons<sup>142</sup>. This was especially obvious from the discussions

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<sup>141</sup> In 2010, five NATO member states – Germany, Belgium, the Netherlands, Luxembourg and Norway, three of which still host the US tactical nuclear weapons – made a joint declaration urging to remove those weapons from Europe. However, NATO's new Strategic Concept adopted the approach which re-confirmed NATO as a nuclear alliance, proposed by the United States and supported by the NATO majority. According to the Concept, NATO 'will remain a nuclear alliance' (Paragraph 17 of the document), 'maintain an appropriate mix of nuclear and conventional forces' (Paragraph 19), and the 'supreme guarantee of the security' of the NATO members will be provided by the 'strategic nuclear forces of the Alliance, particularly those of the United States' (Paragraph 18).

<sup>142</sup> International speakers mainly emphasized the importance of the nuclear weapons reductions that NATO made back in mid-2000s and declared that NATO nuclear forces currently play a 'political role' (based on paragraph 17 of NATO's new Strategic Concept, emphasizing that 'the circumstances in which any use of nuclear weapons might have to be contemplated are extremely remote'). Some Russian experts, on the contrary, noted that the new Strategic Concept stresses an increased role of the nuclear weapons in Europe, referring to NATO's maintaining nuclear forces on high alert and conducting regular military exercises involving nuclear weapons.

regarding the relocation of Russian non-strategic nuclear weapons deeper into the Russian interior. (Paragraph 26 of NATO's new Strategic Concept states that 'the aim of the allies should be to seek Russian agreement to relocate its TNW 'away from the territory of NATO members').

Russian experts consider this request unrealistic. Such relocation would require considerable investments to build new storage sites and purchase and install associated equipment, but would still be practically useless from the strategic point of view, as modern fighter aircrafts – the key delivery vehicles for TNW – are capable of covering thousand kilometers in less than an hour.

The Conference demonstrated that, regardless of the complexities in Russia's relations with the USA and NATO, there is a common interest in handling challenges posed by strategic offensive arms and TNW as well as in moving forward discussions of on most crucial themes which can arise in the relevant negotiations in the area.

Further dialogue between the Russian Federation, on the one side, and the United States and NATO, on the other, can help to work out mutually acceptable solutions of a wide range of arms control and international security issues, including strategic and tactical nuclear weapons.



## **PART II. EXPERT INSIGHTS**

8. Russia: defence spending and armaments programmes
9. Local conflicts on the CIS territory
10. High-precision conventional weapons and international security
11. Trends in modern space activities





## 8. RUSSIA: DEFENCE SPENDING AND ARMAMENTS PROGRAMMES

Lyudmila PANKOVA

Russia is planning to boost its national defence and national security spending in the current decade. Around 20 trillion roubles have been earmarked for the State Armaments Programme (Gosudarstvennaya Programma Vooruzheniy, GPV–2020) to be spent by 2020. Additionally, three trillion roubles will be spent on modernization of Russia’s defence industry<sup>143</sup>.

### Defence spending in 2012–2014

The ‘National Defence’ chapter of the Federal Budget, which is the source of funding for the Armed Forces, is one of the largest spending items (after the social programmes) in the Russian budget in 2012<sup>144</sup>. Over **1.8 trillion roubles** have been earmarked for this purpose, which is 315.9 billion roubles or 20.5% up from the 2011 spending (Table 1). The budget assigned for the defence in 2013 and 2014 (versus the previous year) was 476.1 billion roubles (25.7%) and 408.0 billion roubles (17.5%), respectively.

The Ministry of Defence earmarked over 880 billion roubles in 2012 for R&D (research and development), procurement and

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<sup>143</sup> See: Putin, V., ‘To Be Strong: Security Guarantees for Russia’, *Rossiiskaya Gazeta*, 12 Feb. 2012.

<sup>144</sup> Federal Law of the Russian Federation no. FZ 371 ‘On the Federal Budget in 2012 and the Planning Periods of 2013 and 2014’, signed into law on 30 November 2011.

maintenance of arms and equipment, i.e. the State Defence Order (Gosudarstvennyi oboronnyi zakaz, GOZ). This figure includes 176 billion roubles in sovereign loans to the contractors. The 2011 spending was 750 billion roubles and 170 billion roubles respectively.

The budget allocated for GOZ in 2012 is 21% over the 2011 spending. In the three-year period, the government plans to invest almost three times the budget of 2008–2011 in the development of the Russian defence industry and delivery of GOZ's State Armaments Programme.

In 2012, Russia plans to spend on the procurement of new military equipment 15% more than it spent last year.

The defence spending in the Federal Budget of 2012 and 2013–2014 will meet three major targets.

First, the reform of the military personnel pay and the promised permanent housing to the military personnel<sup>145</sup>.

Second, a profound re-equipment of the Armed Forces with modern arms and military hardware.

Third, modernization of the defence-industrial complex (DIC), which includes 1300 enterprises and organizations in 64 federal subjects, and employs roughly two million people<sup>146</sup>.

An ambitious target was set to boost the share of the less than 10 years old military hardware to 80%<sup>147</sup>. Many experts believe that the GPV–2020 targets are unattainable without a profound modernization of the DIC.

It is worth noting the following high priority targets of the defence budget in 2012–2014: combat readiness of the Armed Forces; creation of a professional mobile army; increase of the contract service personnel to 425 thousand within next five years<sup>148</sup> with the further incremental increase by 50 thousand people each year<sup>149</sup>; and the reform of military training.

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<sup>145</sup> Since the early 2012, the Russian government has almost tripled compensation for the military personnel and increased military pensions almost 1.6 times, <[www.ria.ru/defense\\_safety/20120313/593823739.html](http://www.ria.ru/defense_safety/20120313/593823739.html)>.

<sup>146</sup> See: Rogozin, D., 'Quality of weapons as the foundation of many victories', *Voенно-promishlennii Kurier*, 7–13 Mar. 2012, p. 2.

<sup>147</sup> *Rossiiskaya Gazeta*, 24 Feb. 2012.

<sup>148</sup> *Nezavisimoye Voенnoye Obozrenie*, 17 Feb. 2012, p. 3.

<sup>149</sup> As early as 2012 the plan is to start a new system of contract military service for sergeants and privates.

Growing national defence spending will increase its share in the national GDP (from 3.1% in 2012 to 3.8% in 2014)<sup>150</sup> and in the Federal Budget (from 14.6% in 2012 to 18.8% in 2014).

As evident from Table 1, the share of national defence spending in the 2013 GDP can expand to 3.6%.

President Dmitry Medvedev's speech at the expanded meeting of the Defence Ministry Board on 20 March 2012 refers to the plans to assign at least 2.8% GDP to fund the national defence through to 2020<sup>151</sup>.

**Table 1. National defence spending in the Russian Federal Budget, b. roubles (draft)**

	2011	Draft		
		2012	2013	2014
National defence spending	1537.4	1853.3	2329.4	2737.5
% of the GDP	2.88	3.1	3.6	3.8
% of the total budget	13.9	14.6	17.0	18.8

*Sources:* The Defence Committee of the State Duma, the Council of the Federation Committee on Defence and Security; the Accounts Chamber of the Russian Federation, <[www.ach.gov.ru/userfiles/tree/resolution2012-tree\\_files/fl555.pdf](http://www.ach.gov.ru/userfiles/tree/resolution2012-tree_files/fl555.pdf)>; <[www.finmarket.ru](http://www.finmarket.ru)>, 2 Nov. 2011.

For the sake of comparison, the national defence spending in 2000 was, according to various sources, 16.5-17.3% of the Federal Budget and 2.6% of the national GDP.

The total national defence spending in 2012–2014 will amount to about 7 trillion roubles.

The aggregated spending under chapters 'National Defence' and 'National Security and Law Enforcement' in the Federal Budget will increase from 25.1% in 2011 to a record 33.0% in 2014<sup>152</sup>.

<sup>150</sup> The total size of the Russian GDP is expected to grow: 53 471.5 billion roubles (2011); 58 683.0 billion roubles (2012); 64 803.0 (2013) and 72 493.0 (2014).

<sup>151</sup> *Voенно-promishlennii Kurier*, no. 12, 2012, p. 2.

<sup>152</sup> Stepashin, S., 'Resolutions of the Audit Chamber of Russian Federation on draft Federal Law 'On the Federal Budget in 2012 and the Planning Periods of 2013 and 2014'', <[www.ach.gov.ru/userfiles/tree/resolution\\_2012-tree\\_files-fl555.pdf](http://www.ach.gov.ru/userfiles/tree/resolution_2012-tree_files-fl555.pdf)>.

Most of the spending under the ‘National Defence’ chapter has been earmarked for the Ministry of Defence (88.9%), Ministry of Industry and Trade (10.5%) and State Corporation ‘ROSATOM’ (5.0%).

The analysis of the national defence spending structure in the Federal Budget of 2012-2014 confirms that the new budget has largely retained the proportion between the sub-chapters (Table 2).

Table 2 shows that the largest line item in the ‘National Defence’ chapter (02) is sub-chapter 0201 ‘Armed Forces of the Russian Federation’, which constitutes between 76.6% and 78.9% of the expenses in 2012-2014.

Such significant increases of spending under item 0201 ‘Armed Forces of the Russian Federation’ are linked, first of all, to the President’s Budget Message to the Federal Assembly of the Russian Federation ‘On the budgetary policy in 2012-2014’ in the part related to the 2012 reforms of the compensation and pensions for military personnel and equated individuals. The funds earmarked in 2012 for the military personnel compensation are 36.5% more than the budget allocated for the purpose in 2011.

Second, sub-chapter 0201 ‘Armed Forces of the Russian Federation’ and sub-chapter 0208 ‘Applied R&D field of national defence’ include significant expenses on the hardware: R&D, procurement and overhauls of the arms, military and specialized equipment.

**Table 2. Structural breakdown of the ‘National Defence’ chapter of the Russian Federal Budget, b. roubles**

No	Description	2011	2012	2013	2014
	National Defense, including:	1537.4	1853.3	2329.5	2737.5
01	Armed Forces	1140.9	1424.0	1846.5	2151.2
02	Modernization of Armed Forces and military units (a)	—	—	—	—
03	Mobilization and Training (ex forces)	6.7	7.3	7.3	7.4

04	Mobilization preparation of economy	4.9	4.9	4.9	4.9
05	Collective security/ Peacekeeping	0.4	0.4	0.4	0.4
06	Nuclear weapons complex	26.9	27.5	30.3	33.3
07	International obligations in mil-tech cooperation (b)	4.5	4.5	4.6	4.8
08	Applied R&D field of national defence	161.3	163.1	201.7	240.5
09	Other, national defence field	191.8	221.7	233.7	294.9

a) This plan, just as all plans before, does not show budget distribution in subchapter 02;

b) Military-technical cooperation.

*Sources:* The Defence Committee of the State Duma, the Council of the Federation Committee on Defence and Security; the Audit Chamber of the Russian Federation, <[www.ach.gov.ru/userfiles/tree/resolution2012-tree\\_files-fl555.pdf](http://www.ach.gov.ru/userfiles/tree/resolution2012-tree_files-fl555.pdf)>; <<http://top.rbc.ru/economics/01/12/2011/627843.shtml>>.

730.8 billion roubles are planned to be spent on ‘hardware’ (20% up from 2011 spending) in 2012, 1156.3 billion roubles in 2013, and 1463.6 billion roubles in 2014.

The military ‘hardware’ spending plans factored in a complex combination of GPV–2020, federal target programs, various decisions of the President and the government, as well as the need to compensate for the growing prices of armaments and military and specialized hardware.

The structure and dynamics of the military hardware procurement (Table 3) indicates a tendency towards the growing procurement spending against a drop in the R&D and maintenance which experts believe would eventually backfire in terms of new advanced weapons projects and maintenance of the existing weapons.

**Table 3. Structure of Russia's military 'hardware spending', %**

	R&D	Procurement	Maintenance	Total
2010	22	65	13	100
2011	20	65	15	100
2012	23	59	18	100
2013	20	64	16	100
2014	19	66	15	100

Source: The Defence Committee of the State Duma, <<http://asozd.duma.gov.ru/>>.

In December 2011, the Security Council of the Russian Federation decided to change the proportion of the maintenance and equipment expenses to ensure a 40:60 ratio by 2015, and further 30:70 ratio by 2020 in favour of equipment, mostly spending more on procurement.

Within the category of 'Military Equipment' (or 'potential for development'), the proportion between the military R&D and funds allocated for the military hardware procurement is 39% in 2012 for the Russian Federation. (For reference, the index in the US was 70% in the early XXI century).

The share of R&D in the overall Russian R&D and procurement spending in 2012 is 28% and it was just over 41% in the US in the mid-2000s (Table 4). The aforementioned figures, with account to the share of R&D in the overall military spending describe a significant scientific innovation component in the military budget and the 'Military Equipment' budget line item and, therefore, of the GOZ in general.

**Table 4. R&D component in the 'National Defence' and 'Military Equipment' budget of Russian Armed Forces versus other countries, %**

	Russia	USA	EU	Great Britain	France	Germany
R&D	8.8	15.0				
R&D/R&D+proc	28.0	41.1	25.0	34.8	37.4	21.9
R&D/proc	39.0	70.0	33.0	53.0	60.0	27.0

Russia – data for 2012. Other countries: data for the mid 2000s.

R&D – R&D spending in the military budget; R&D/R&D+proc–military R&D against overall R&D and procurement spending; R&D/proc – military R&D spending against military procurement spending.

*Sources:* Data provided by the State Duma of the Russian Federation, the Council of the Federation, and Bellais, R., ‘Defense innovation at any (out of control) cost? The stalemate of today’s R&D policy and an alternative model’, *The Economics of Peace and Security Journal*, vol. 4, no. 1 (2009), p. 6.

The total spending earmarked under sub-chapter 0208 ‘Applied R&D field of national defence’ for three years (2012–2014) amounts to 605.3 billion roubles. Of this, the funds allocated for this sub-chapter in 2012 will be 163.1 billion roubles (up 1.1%), 201.7 billion roubles (up 23.7%) in 2013 and 240.5 billion roubles in 2014 (up 19.1%). The plan is to spend the funds to deliver GPV – 2020.

As evident from Table 2, the budget allocates 4.9 billion roubles for sub-chapter 0204 ‘Mobilization preparation of economy’ at the 2010 level to be spent annually to ensure mobilization capacity and other special tasks.

The budget spending for sub-chapter 0206 ‘Nuclear weapons complex’ in 2012–2014 will be 27.5 billion, 30.3 billion and 33.4 billion annually, respectively. All spending is managed by the Russian Federal Atomic Energy Agency (Rosatom) based on the targets and parameters of GPV.

The following spending is planned under sub-chapter 0209 ‘Other, national defence field’:

The operation of the government agencies, public institutions will need 5.6 billion roubles in 2012, 6.8 billion roubles in 2013 and 5.4 billion roubles in 2014;

The implementation of Federal Target Programmes (FTPs) will receive 34.770 billion roubles in 2012, 34.789 billion roubles in 2013 and 20.471 billion roubles in 2014.

The budget will invest in the capital construction (not included in FTPs) 67.5 billion roubles in 2012, 68.1 billion roubles in 2013 and 64.2 billion roubles in 2014.

In addition to the aforementioned funds allocated for FTP under sub-chapter 0209, sub-chapters 0208 and 0201 also allocate funds for FTPs.



Sub-chapter 0208 earmarks budget assets for a few FTPs, such as ‘Destruction of the chemical weapons stockpiles in the Russian Federation’, ‘National system of chemical and biological security of the Russian Federation’, ‘Industrial utilization of weapons and military equipment in 2011-2015 and through 2020’, ‘Development, reconstruction and organization of production of strategic deficient and import substitution materials and light duty chemicals for weaponry, military and special equipment for 2009-2011 and through 2015’, ‘Flight safety of the state aviation of the Russian Federation’, ‘Development of Russian cosmodromes in 2006-2015’ (4.7 billion roubles in 2012, 5.9 billion roubles in 2013, 6.1 billion roubles in 2014).

General reduction of funds allocated for the FTPs from 2011 is due to the adjustment of goals and less spending for R&D in weaponry, military and special equipment as part of GOZ.

It is well known that the defence budget planning is an integral element of both the macroeconomic policy and military strategy. A wide range of diverse factors affect budgeting decisions: GPV-2020, the FTPs, individual resolutions of the President and government, as well as priorities of the military strategy, economic and military policies, and other factors.

The major challenge is to coordinate the needs and limited capacities in the context of the territorial integrity of the state.

The main question of the national military budget discussion – ‘is it too much or too little?’

In the modern world, Russia cannot ‘do without’ substantial defence spending. Such spending, as President Medvedev noted, should be ‘worthy of the Russian Federation: a very large country, permanent member of the UN Security Council and a nuclear-weapon state’<sup>153</sup>.

Russia’s planned military spending is *the maximum potentially possible*, although even such spending is generally insufficient to bridge the gap with the industrialized nations.

We believe the expected growth in defence spending *does not indicate a step up of the arms race and national militarization*. According to many Russian experts, the efforts primarily target the

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<sup>153</sup> D. Medvedev at the meeting on 27 September 2011 with commanders of military units that took part in ‘Center-2011’ military exercises, <<http://www.vesti.ru/doc.html?id=581563>>.

negative effects of the catastrophic underfunding of the Russian defence in the 1990s, which led to a gap between the needs of the national defence and adequate modernization of arms and military equipment, on the one hand, and the military-industrial potential, on the other.

It is also worth noting that the Russian Federation is well within reasonable defence spending and does not conflict with the principles of ‘reasonable sufficiency and effectiveness’ according to item 27 of Russia’s National Security Strategy up to 2020<sup>154</sup>.

This statement is confirmed by a comparison of the Russian military spending against those of the leading industrial nations. Even with the significant rise in military spending (as mentioned above), Russia is only the fifth among the top world military spenders following the US, China, France and the UK, with only a slight lead over such countries as Japan and Germany.

Russia’s absolute military spending is far below the US spending (\$662 billion in 2012). China’s military spending in 2012 is estimated to be \$100 billion.

Some Russian experts believe that the rising military spending creates a lot of issues for the budget and economic development. Former Russian Minister of Finance Alexey Kudrin stated, that ‘the growing military spending in the mid-term hinders the investments in education and health care’<sup>155</sup>.

The argument in favour of a 4% GDP boost in education and healthcare spending as a ‘budgetary manoeuvre’ in the mid-term along with the reduction of ‘other’ expenses equivalent to 2% GDP also featured in the conclusions of the experts that developed ‘Strategy 2020’ in July 2011<sup>156</sup>.

Authors of the revised ‘Strategy 2020’ recommend a 0.9% GDP reduction in ‘National Defence’ and ‘National Security and Law Enforcement’ in 2014-2020.

The final report of the expert group on the revisions to ‘Strategy 2020’ notes that the share of defence spending can grow

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<sup>154</sup> Authorized by the President of the Russian Federation on 12 May 2009 (Presidential Decree no. 537).

<sup>155</sup> ‘Human asset against military potential’, *Kommersant*, 11 Oct. 2011, p. 6.

<sup>156</sup> *Ibid.*

to 5.5% GDP if the government goes ahead with the 20 trillion roubles rearmament plans by 2020<sup>157</sup>.

Among the money saving measures, the experts mention potential reduction of the Armed Forces, transfer of some military personnel to the civilian service, prevention of growing expenses due to the reform of the Ministry of the Interior, reduction of the government security agencies, elimination of overlapping divisions and agencies<sup>158</sup>.

According to Evgeny Gurvich, Head of the Economic Expert Group, following 2012, Russia will 'need to upgrade spending on infrastructure, education and healthcare by reducing the defence spending and bureaucracy expenses'<sup>159</sup>.

'Budget masterminds' justify the growing military spending, arguing that 'now it is the army's turn, all the rest got what they need earlier'. This is the logic behind essentially the whole Federal Budget of 2012-2014. Thus, the growing military and military R&D spending is associated with the reduction in civil R&D expenses. The Federal Budget will spend 255 billion roubles in 2012, 245 billion roubles in 2013, and 199 billion roubles in 2014<sup>160</sup>.

Such logic indicates the lack of scientific approach to justification of military spending and raises certain doubts in the quality of the budget planning.

This, combined with the lack of budgetary transparency, gives a lot of ground to certain experts to refer to a 'runaway arms race'<sup>161</sup>.

In order to improve the spending efficiency, Russia needs to improve the budgetary control, and here is when the Military-Industrial Commission should play the decisive role.

Secondly, Russia needs to improve the budget transparency. Valentina Matvienko, Chair of the Council of the Federation, noted at the parliamentary hearings on 16 February 2012, that the existing budgetary classification of defence expenses lacks transparency. Matvienko also emphasized that 'the situation is aggravated by the

<sup>157</sup> <[www.ria.ru/defense\\_safety/20120313/593823739.html](http://www.ria.ru/defense_safety/20120313/593823739.html)>.

<sup>158</sup> <[www.ria.ru/defense\\_safety/20120313/593823739.html](http://www.ria.ru/defense_safety/20120313/593823739.html)>.

<sup>159</sup> <[www.ria.ru/analytics/2011117/491091425/htm](http://www.ria.ru/analytics/2011117/491091425/htm)>.

<sup>160</sup> Netreba, P., Butrin, D., 'Wartime gets a military budget', *Kommersant*, 7 July 2011.

<sup>161</sup> Zatsepin, V., 'Defense budget: runaway arms race', 30 Nov. 2010, <[www.iep.ru/ru/oboronnyi-byudzhet-beskontrolnoe-vooruzhenie.html](http://www.iep.ru/ru/oboronnyi-byudzhet-beskontrolnoe-vooruzhenie.html)>.

fact that we have no contract law, but departmental needs. It complicates the oversight of the government spending'<sup>162</sup>.

It should be noted though, that the increased military spending, including the spending on equipment, will lead to indirect investments in the 'human capital', including the upgrade of the quality and prestige of the higher technical education, employment growth and skills development of the production personnel, upgrade of the engineering and manufacturing base.

Moreover, efficient defence spending through the government demand for innovative high-tech products, design of new materials, alloys, modern communication, navigation systems, sensor technologies, etc. can create a 'ripple effect' and advance the civilian economy and facilitate the modernization and innovation of national economy in general, and, finally, facilitate the national innovation breakthrough. The 'reserve' transfer of technologies will also be happening from the civilian to military sector. It will help the defence industry to integrate into the national economy improving its innovativeness and efficiency.

### **GPV-2020<sup>163</sup>**

GPV-2020 is directed at the radical re-equipment of the entire Armed Forces with modern arms and military equipment and the creation of a fundamentally new Russian Army of the XXI century, capable of responding to global challenges and threats. The Programme is highly complex and ambitious.

This fifth (since the start of the Russian reforms) armament programme has been in effect since 2011 when the relevant items have been included in the State Defence Order. The 'National Defence' chapter spending in 2011-2020 is 40% up from the 2001-2010 budgets (at 2010 prices)<sup>164</sup>.

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<sup>162</sup> <<http://council.gov.ru/print/infps/chronicle/2012/02/item18841.html>>.

<sup>163</sup> President Dmitry Medvedev endorsed GPV-2020 on 31 December 2010. GPV-2020 replaced the previous State Armaments Programme (GPV 2007-2015). Earlier, on 19 April 2010, Russian President adopted the Concept of Armed Forces structure development (National Government's Military and Political Strategy).

<sup>164</sup> Spending in 2001-2010 amounted to 12 059.7 billion roubles at 2010 prices.

Top priorities of the Armed Forces modernization under GPV–2020 include the development of the Strategic Nuclear Forces (SNF), Aerospace Defence, aviation (including the serial production of fifth-generation fighter aircraft), space systems and complexes, reconnaissance systems, radio and electronic security systems, communication and computerized control systems of the Armed Forces. Additionally, the plans include development of drones, robotic strike systems, individual battle armour, high-precision weapons and counter-weapons, design of new battleships, etc.

By 2020, Russia plans to procure 1.5 thousand units of modern weaponry and military equipment. These are expected to ensure a staged boost of the modern military equipment from 16% in 2011<sup>165</sup> to 30-40% in 2016<sup>166</sup>.

By 2020 Russia plans to increase the share of modern arms and equipment up to 60-70% for the conventional armed forces and up to 70-90% for the Strategic Nuclear Forces, and up to 100% for such services as the Air Defence, Communication, and army aviation.

Since the early stages of GPV–2020, the programme has been facing many challenges caused by the fact that the changes in arms and military equipment were happening simultaneously and the actors in charge of the programme were not ready to meet the targets.

First, this situation was largely caused by the profound reorganization of the GOZ procedure and lack of clarity over the pricing which resulted in major disputes between the Ministry of Defence and arms industry and, consequently, held up contract signing.

Second, there is a general unpreparedness for management of cash disbursements in the context of rapid increase in funding and, at the same time, lack or, to be more precise, inadequacy of the regulatory system for GPV (lack of the law regulating the federal contract system and unclear GOZ procedures).

The FTP ‘Development of the Defence Industrial Complex’ has not been approved yet, although there is a pressing need to modernize the defence industry to get it ready for the cash spending.

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<sup>165</sup> See: Medvedev, D., ‘Russia’s military power’, *Voenno-Promishlennii Kurier*, no. 12, 2012. p. 2.

<sup>166</sup> ‘The cash is allocated. Looking forward to the product quality’ (Interview with A.P. Sukhorukov, First Deputy Minister of Defence of the Russian Federation), *Voenno-Promishlennii Kurier*, no. 44, 2011. p. 3.

In addition, the customer – the Russian Ministry of Defence – is currently also being reorganized<sup>167</sup>.

Experts believe that all that led to an ‘organizational over-heat’ and ‘failures’ in the GPV–2020 implementation in 2011.

The failures of the previous GPVs point to inadequate funding and capacities and deadlines. These failures, typical occurring on the second stage of an armament programme, threw the programme ‘off-balance’ and led to an almost 30% underfunding<sup>168</sup>. Consequently, the situation required a new armament programme to be adopted.

GPVs are non-binding. Essentially, they constitute an armaments development strategy. Moreover, they are not budget commitments either, unlike GOZ. Hence, there is an urgent need to adopt a Federal Law ‘On the State Armaments Programme’ to ensure the programme is promoted to a federal law level.

A clear structure of the Armed Forces and force development plan should be in line with the development strategy. Besides, the force development planning should come hand in hand with the budgeting. Russia urgently needs strategic military and economic planning, as well as efficient forecasting centres dealing with Armed Forces development strategies.

Despite serious challenges facing the first year of GPV–2020, the defence industry has been gradually launching serial production. In particular, in 2011 the military received 30 Topol-M and Yars missiles, 21 aircrafts, 82 helicopters, over 8.5 thousand multi-purpose vehicles, as well as two special space vehicles and one Project 22380 surface battleship<sup>169</sup>.

The creation of the Aerospace Defence Forces (VKO) in December 2011 was another landmark event.

In general, ‘in the upcoming decade, Russia will deploy more than 400 advanced ground and sea-based intercontinental ballistic missiles, 8 ballistic missile submarines, some 20 multi-

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<sup>167</sup> In particular, the government established a Federal Procurement Agency, which took over 10-15% of orders in 2011. The Agency is expected to lead up to 70% of orders in 2012, and 100% in 2013. Pricing Department has been formed within the Federal Procurement Agency.

<sup>168</sup> ‘Interview with V. Popovkin’, *Rossiiskaya Gazeta*, 12 July 2010.

<sup>169</sup> Litovkin, V., ‘Defence Procurement and Acquisition’s Bottleneck’ (Interview with A. Sukhorukov, Deputy Minister of Defence of the Russian Federation), *Nezavisimoye Voennoye Obozrenie*, 13 July, 2012, pp. 1, 3.

purpose submarines<sup>170</sup>, more than 50 surface combat ships, some 100 military spacecraft, more than 600 advanced aircraft<sup>171</sup>, including fifth-generation fighters, more than a thousand helicopters, 38 battalion kits of Vityaz air defence systems (C-300), 28 regimental kits of Triumph S-400 anti-aircraft missile systems (about 1800 missiles)<sup>172</sup>, 10 brigade kits of Iskander-M ballistic missile systems, more than 2300 modern tanks, some 2000 self-propelled artillery vehicles and guns, and more than 17000 military motor vehicles<sup>173</sup>.

GPV-2020 develops the strategic deterrent forces and maintains the importance and decisive role of the nuclear forces as the instrument and the main component of such forces. Russia needs to keep the nuclear deterrent forces until it acquires other types of weaponry or next generation strike systems, including ‘high-precision weapons, whose capabilities are close to those of nuclear deterrent forces’<sup>174</sup>.

According to Yuri Solomonov, member of the Russian Academy of Sciences, General Director of public corporation ‘Moscow Institute of Thermal Technology’, the Russian DIC is 10-15 years ahead of its Western and Eastern opponents in strategic nuclear armaments.

The early warning and aerospace defence systems constitute another deterrence instrument. Both will be developing largely depending on the US and NATO BMD policy.

In the meantime, elements of GPV-2020 put together ‘cannot make high efficiency attack or defence weapons systems fit for non-contact warfare’<sup>175</sup>.

In general, analysis of GPV-2020 indicates, that it **plans for 2020 what the Russian Armed Forces would like to have today**. Hence, the urgency of defence technology forecasting and transparency in formulating mid- and long-term military requirements.

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<sup>170</sup> Among them are eight Borei Class ballistic missile submarines (Project 955) and eight Yasen Class multi-purpose nuclear attack submarines (Project 855), *Voенно-Promishlennii Kurier*, no. 7, 2012, p. 7.

<sup>171</sup> Including Su-27SM, Su-30MK, Su-34, Su-35S, An-10, etc.

<sup>172</sup> Potentially, also including S-500 missiles.

<sup>173</sup> Putin, V., ‘To Be Strong: Security Guarantees for Russia’, *Rossiiskaya Gazeta*, 12 Feb. 2012.

<sup>174</sup> *Ibid.*

<sup>175</sup> Rastopshin, M., ‘Expected and logical failure of SAP-2020’, *Armeyskii Vestnik*, 7 July 2011.

We believe that the declared structure of GPV–2020 is fairly well diversified and serves to counter a wide range of threats. However, the innovation factor that enables the creation of the modern Armed Forces living up to 2020 challenges is not evident, especially at the low level of military budget transparency.

Table 4 provides the insight into the insufficient R&D and innovation content of the ‘military equipment’.

It seems apparent that Russia will need to boost investments in R&D and broad spectrum of technologies to ensure its Armed Forces achieve the ambitious targets by the end of the current decade.

The competitiveness of a nation at any particular time heavily depends on the R&D investments made 20–25 years prior.

There is a close link between the investments in R&D made 5 years back and the activity in new designs, whereas investments in R&D made 20–25 years back are closely related to the activity in the defence research<sup>176</sup>. High or low R&D investments at these timeframes lead to high or low competitiveness of a nation against other countries-investors in R&D. The cascading effect of the R&D underfunding causes serious problems for R&D and innovation of the military.

The implementation of GPV–2020 is significantly hindered by, first of all, lack of efficient programme funds management system, as well as corruption, and lack of competition and ‘in many cases, lack of competitive bidding’<sup>177</sup>. This is the reason why many experts view Russia’s defence spending a ‘bottomless pit’. Secondly, it is the quality of the R&D and manufacturing capacity of the Russian DIC.

According to Denis Manturov, Deputy Minister of Industry and Trade of the Russian Federation, ‘significant modernization of arms and military equipment, multiple increase of the new generation equipment supplied to the military under GPV–2020 require the defence industry make a technological breakthrough and upgrade the manufacturing base’. The defence industry modernization

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<sup>176</sup> UK Ministry of Defence, *Defence Technology Strategy for the Demands of the 21st Century*, 2006. p. 17.

<sup>177</sup> Zhebit, M., Prokshin, K., ‘State spent 3.6 trillion roubles without bargaining’, *Izvestia*, 6 Apr. 2012. According to M. Evraev, Head of Department Public Procurements Control, FAS, the defence order is a serious problem because it is often exempt from competitive bidding.



program ‘carries a significant innovation component. The current GPV includes three times more new technologies than GPV–2015. Structure-wise, this second FTP designed to develop the defence industry (the first was attempted in 2007) ‘has more to do with the investment. The state will invest over 80% of total investments (prior to 2007, defence industry companies had to pay for their modernization with their own scarce assets)’<sup>178</sup>.

An important new feature of the Programme implementation is that, effective the year of 2011, defence industry enterprises receive sovereign guarantee loans. This is a new funding model for the GOZ which has introduced a fundamentally new relationship between customers and contractors. Now, the contractor will later be paying back the sovereign loan<sup>179</sup>. A second innovation introduced in 2011 in financial support of GOZ is an 80-100% long-term prepayment for critical weaponry<sup>180</sup>.

The analysis of Russia’s defence spending in 2012 (and the three-year term) and the content of GPV–2020 reveals budgetary and strategic risks. The budget risks are due to the potential loss of budget revenues in event the Urals oil price declines and the budget faces deficit. In addition, only around 8 trillion roubles will be spent under the ‘National Defence’ chapter in 2011-2014. In other words, the main funds will be released in the second half of GPV–2020. This was typical for the previous armaments programmes. Moreover, according to Vladimir Putin, 440 billion roubles of 3 trillion roubles allocated for modernization of defence industry manufacturing facilities up to 2020 will be spent in 2012–2014<sup>181</sup>. Does it mean we will repeat the mistakes of the previous programmes?

In order to mitigate strategic risks, the Russian military strategy and armament programme should ensure that the Armed Forces are adequately prepared for potential state of security by the end of the decade. Furthermore, the Armed Forces should be flexible and ready respond rapidly to unexpected military or technological developments. The strategy of military development and budgetary process should be reviewed and formed hand in hand.

<sup>178</sup> <council.gov.ru/files/parliament attend/190.doc>.

<sup>179</sup> ‘Interview with Yu. Solomonov’, <www.militarynews.ru>.

<sup>180</sup> Litovkin, V., (‘Interview with A.P. Sukhorukov, First Deputy Minister of Defence of the Russian Federation’), *Nezavisimoye Voennoye Obozrenie*, 3 Feb. 2012, p. 3.

<sup>181</sup> <www.actual.comment.ru/banner/click/119>.

The policy of reinforcing the national defence is well justified and reasonable. However, it requires enhanced financial management and control and increased responsibility for both the contractors and the customers in the state defence order system.

## **9. LOCAL CONFLICTS ON THE CIS TERRITORY**

Stanislaw IVANOV

The year of 2011 and early 2012 were characterized by a fairly stable situation in the Republics of the former Soviet Union and no large-scale armed conflicts. There are only two 'frozen' unresolved regional conflicts: the Moldova-Transdnestrian and Nagorno-Karabakh conflicts.

Abkhazia and South Ossetia, after they were recognized by the Russian Federation in September 2008, and later by a few other states, became full-fledged subjects of international law.

There have been no confirmed serious provocations or incidents at the Abkhazian or South Ossetian borders with Georgia. The UN, EU and OSCE sponsored meetings with Abkhazia, Georgia, South Ossetia, Russia and the USA in Switzerland (Geneva) to discuss security and humanitarian issues. The eighteenth round of discussions on security and stability in Transcaucasia was held in Geneva on 14 December 2011.

The delegations discussed the situation at the Georgia/Abkhazia and Georgia/South Ossetia borders, as well as prevention and incident response mechanisms. The Geneva discussions will be extended.

The parties resumed meetings and negotiations at the Georgia/Abkhazia border (the Gali district) and Georgia/South Ossetia border (Ergneti and Dvani villages).

The Republic of South Ossetia experienced some domestic political uncertainty after the results of the presidential elections in 2011 have been invalidated. It should be noted that building state-

hood and civil society institutions in both states, as well as recovery of the infrastructure and economy damaged in the war, defines the efficiency of Russia's policy in the region.

Kyrgyzstan's domestic political situation has normalized.

Tajikistan's authorities managed to restrain the activities of local rebel groups.

### **Moldova–Transdnestrian conflict**

No progress has been made in the settlement of the Moldova–Transdnestrian conflict. The sides to the conflict maintain opposing views on the status of Transdnestria. Chisinau can only accept a deal that would give Transdnestria autonomy within the Republic of Moldova, whereas Tiraspol demands an official recognition of the Transdnestrian Moldovan Republic (TDMR). Security in the conflict area is ensured by the joint Russian-Moldovan-Transdnestrian peacekeeping force and Ukrainian military observers.

On 30 November 2011, persistent efforts of the mediators and observers resulted in resumed meetings of the 'Permanent Conference on political issues within the negotiation process towards a Transdnestrian conflict settlement', also known as the '5+2' format (the Republic of Moldova and Transdnestria are sides in the conflict, Russia, Ukraine and the OSCE are mediators, the European Union and the USA are observers). The meeting took place in Vilnius following a six-year hiatus, and was chaired by Audronius Ažubalis, Chairman of the OSCE and Minister of Foreign Affairs of Lithuania.

Moldovan negotiators did not offer any compromise solution to the future status of Transdnestria. The Moldovan Constitution, according to them, can only offer the Transdnestria a broad autonomy within the Moldovan Republic. This question should be settled at separate negotiations. 'Chisinau is ready to grant Tiraspol wide authorities in the area of social affairs, health care, culture, education, but would not grant it any strategic functions, related to national borders, national currency, defence or law', - stated Evgeny Karpov, Vice Prime Minister on Re-Integration and the Republic of

Moldova's representative at the negotiations, prior to the meeting on the Transdniestrian conflict settlement<sup>182</sup>.

On the other hand, Transdniestria does not accept any types of relations with Moldova, other than as an equal independent state. Tiraspol believes that Moldova and Transdniestria may join in a confederation after Chisinau recognizes sovereignty of Transdniestria.

The Vilnius round of negotiations focused on the concepts and procedures of 'The Permanent conference on political issues within the negotiation process towards a Transdniestrian conflict settlement'.

Technically, the parties made an effort to work out a compromise solution. All participants presented their ideas on the issue and the OSCE prepared a joint document. The parties reached an agreement on a few technical issues. However, just as expected, the sides did not reach a consensus on major aspects of the problem. The latter included the equality of the sides, formal legal confirmation of the previous round's results, observance of previous agreements, etc.

Moldova proposed to abandon the practice of officially endorsing the protocols after each round of negotiations previously signed by the chairman and all participants to '5+2, which made the resolutions binding for the parties. Otherwise, non-compliance with any protocol items could meet criticism of the mediators and observers. Chisinau was not happy with this provision after failing to deliver on a number of earlier agreements. Among those was the agreement (important for Transdniestria) on the right to independent foreign trade, which is part of the Moscow Memorandum signed on 8 May 1997.

Moldova was not willing to recognize the TDMR as an equal party to the conflict settlement negotiations and requested the OSCE to summarize each round of negotiations verbally without any written protocols to sign by Moldova and Transdniestria.

The meeting failed to register the concept of equality in any form.

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<sup>182</sup> Commentary of Konenko G., Head of the Moldova and Transdniestrian section at the Institute of the CIS, 'What have Vilnius discussions of Transdniestria conflict completed?', <[www.materik.ru/pda/rubric/detail.php?ID=14282](http://www.materik.ru/pda/rubric/detail.php?ID=14282)>.

Vladimir Yastrebnik, representing Transdniestria, emphasized that ignoring the earlier agenda would be unacceptable. Such agenda included unconditional observance of the principles of equality and mutual respect; need for a comprehensive system of conflict settlement guarantees; an independent Transdniestrian foreign trade; normalization of car and rail traffic; administrative prosecution of Russian and Ukrainian citizens residing in Transdniestria; criminal prosecution of Transdniestrian officials. These requirements were identified as a high priority in November 2009. However, there has not been any headway in finding any solutions to these issues<sup>183</sup>. Evgeny Karpov, a leading Moldovan negotiator, argued that the lack of time was a valid reason for the absence of any agreements on the 'principles and provisions of the negotiations'.

Moldova insisted that the parties should start discussions on transforming the Transdniestrian peacekeeping operation into an international mandated civil mission before any political settlement of the Transdniestrian conflict. Moldova believes that the withdrawal of the Russian troops from the Moldovan territory would break the deadlock in conventional arms control negotiations in Europe.

The EU and the United States insisted on adding the provision of immediate withdrawal of the Russian forces from Transdniestria, including the peacekeeping force, to the final document.

It should be noted that, in addition to 400 Russian peacekeepers, Russia keeps an up to 1500 strong Operational Group of Russian Forces in Transdniestria. The latter was established on 1 July 1995 after the 14th Guards Army was reformed. The Group ensures security of the remaining Soviet munitions and weapons scheduled for dismantlement.

Russia was ready to add a provision on the need to investigate a future format of the peacekeeping mission in Transdniestria to the final document, even before the conflict was finally settled. However, the United States insisted on the wording unacceptable for Russia, therefore the sides failed to agree on the draft document for the Moldova-Transdniestria conflict settlement.

Another hallmark event in Transdniestrian politics happened in the late 2011, when Vassiliy Shevchuk was elected President of

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<sup>183</sup> The negotiators in Vilnius failed to reach an agreement on all issues, <[www.allmoldova.com/moldova-news/politics/1249065587.html](http://www.allmoldova.com/moldova-news/politics/1249065587.html)>.

Transdnistria. He is a politician, who will make headway in the negotiations as both Tiraspol and Chisinau hope,

The tensions intensified following the 1 January 2012 incident, when a Russian peacekeeper opened fire and mortally wounded a Moldovan villager from Pyryta, who deliberately rammed his car into the turnpike at the Moldova-Transdnistrian border, ignoring all the warnings of the peacekeepers. Although the incident was a clear provocation by a Moldovan citizen, Chisinau regarded it a valid reason to once again to insist on substituting the Russian peacekeepers for peacekeeping forces from other countries. The incident *caused a public outcry in Moldova*. In particular, a group of Moldovans broke through the gate at the peacekeeping checkpoint no.9 at the bridge over the Dniester and destroyed road signs and the turnpike. At the same time, Moldovan mass media and mass media in a few Western countries unleashed a propaganda campaign against the presence of the Russian peacekeeping force in the conflict zone. Crowds of young protestors were organized into rallies in Moldova and Moldovan Diasporas at the Russian embassies in Rumania and France.

It is obvious that the presence of the Russian peacekeepers in the security zone of the Transdnistrian conflict is conducive to peace and stability in the region.

However, Moldovan leaders believe otherwise. Chisinau made a unilateral decision, as of 4 January 2012, to reduce its peacekeeping force at the trilateral peacekeeping checkpoints by half, disarm the troops and remove the concrete blocks from the checkpoints<sup>184</sup>. However, the current agreement requires both parties to the conflict make joint decisions on the format of the peacekeeping missions, size of the force and the nationality of the peacekeepers. Referring to that, Oleg Belyakov, Co-chairman of the Joint Control Commission, representing Transdnistria, commented on 11 January 2012, that the Commission did not make any decisions to reduce the peacekeeping checkpoints and the size of the peacekeeping force following the tragic incident on 1 January. ‘Only the Joint Control Commission is authorized to remove the checkpoints or disarm the peacekeepers. The Commission never made any such decision yesterday or the day before, for one simple reason that it is critical to keep the soldiers armed to ensure their safety’, - stated

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<sup>184</sup> <[www.rbc.ru/rbcfreenews/20120104131207.shtml](http://www.rbc.ru/rbcfreenews/20120104131207.shtml)>.

Oleg Belyakov after the Commission convened for an emergency meeting<sup>185</sup>.

The next round of negotiations on the Transdnistrian conflict settlement was completed on 29 February 2012. Moldova's official press release stated that the meeting extended the discussions of organizational principles and procedures of the negotiations. The debates made a certain progress on the issues of negotiations management within the '5+2'. The parties agreed to continue discussions at the next round. The parties also exchanged their ideas on the general agenda for the negotiations. The document stated that 'majority of the delegations agreed that the negotiations should be based on a comprehensive agenda, which can cover the issues of political settlement, socioeconomic topics, security, confidence building, etc.'<sup>186</sup>

Transdnistria proposed to register the principles of equality of the sides and state that Moldova and Transdnistria are the parties to the '5+2' negotiations, and all subsequent meetings will be based on the principle of equality.

On 17 February 2012, Moldova's Parliament passed in its first reading a draft bill which endorsed spending over \$240 million by 2015 to procure attack helicopters and fighter jets for national airspace defence.

We believe that a military force enhancement by one side of the conflict would hardly boost confidence among the parties.

We need to point to another event that undermines trust between Transdnistria and Moldova. Tiraspol was distressed by Moldova's new 'Romanization' efforts. On 2 March 2012, the Union Council was created in Chisinau to promote unification of Moldova and Rumania. Politicians supporting the Union see it as an heir to the National Union Council created back in December 1991. The Union's declaration stated that 'the Union Council was created in order to promote the idea of Rumanian national unity and persuade Chisinau and Bucharest, as well as Western politicians that the Rumanian unification serves the interests of Euro-Atlantic security'<sup>187</sup>.

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<sup>185</sup> <<http://www.regnumrf/news/1487579.html>>.

<sup>186</sup> <<http://www.materik.ru/pda/rubric/detail.php?ID=14693>>.

<sup>187</sup> 'Moldova-Romania Union Council established in Chisinau', Moldova News, <[www.zilnic.md/author/67/](http://www.zilnic.md/author/67/)>.



The Union stakeholders emphasize that Moldova's Declaration of Independence stated that the independence was temporary in order to get ready for Moldova-Romania unification. Another sign that Romanian 'big brother' increased its stake was opening of the Chisinau office of the Romanian Social Democratic Party in mid-February 2012. The opening conference elected four regional representatives. (According to the Romanian view, Moldova's administrative division will change after it accedes to Romania and be divided into four provinces).

On 3 March 2012, the first joint session of Moldovan and Romanian governments was held in Iasi (Romania), where both countries signed a range of documents designed to enhance the integration of the two states as well as to promote Moldova's EU integration.

Despite opposing views of the sides on the future Transdnistria status and inefficiency of the negotiations in the '5+2' format, the resumed peace dialogue and regular meetings between the sides to the conflict deserves full international support. A state of limbo in this strategic part of Europe jeopardizes general stability in the region.

In the context of on-going economic recession, 'legalization' of the Transdnistrian entity could benefit the investment climate, trade and communication ties between the states of the region and, primarily, Moldova, Transdnistria, Ukraine, Belarus, Russia, and Romania.

### **Azerbaijani-Armenian conflict over Nagorny Karabakh**

This conflict, despite bearing a signature of a 'frozen' one, still maintains potential for resuming armed hostilities and an arms race in the region.

The ultimate goal of a permanent solution for Nagorny Karabakh (NK) and reconciliation between Azerbaijan and Armenia has been unattainable because of the deep divisions and uncooperative attitude of the sides.

Azerbaijan was still trying to get the ethnic Armenians leave the occupied territories (seven districts) and was avoiding taking any obligations to account for the will of the Nagorny Karabakh

population. Whereas Yerevan and Stepanakert link the withdrawal of their forces to the definition of the status of the NK.

The absence of any international peacekeeping force or permanent observers in the conflict zone made the conflict highly unpredictable. The frontier zone was often a scene of border skirmishes or armed provocations. In spite of periodic OSCE monitoring at the division line between the armed forces of the Nagorno-Karabakh Republic (NKR) and Azerbaijan, the efforts failed to establish a cease-fire line. The path to peace in NK met some serious challenges.

In general, it was Azerbaijan that initiated raids, sniper duels and armed clashes. Both sides suffered casualties though.

The tensions between Azerbaijan and Armenia have been heightened by Baku's belligerent rhetoric, large military exercises close to defensive positions of its adversaries, and intensive militarization. A great hazard for the region is the enhanced militarization of Azerbaijan and, consequently, a spiralling new arms race in the region. Some Azerbaijani experts, referring to the increasing military power of the Armenian army, are sceptical about keeping the status quo, which could flare another large military confrontation in the region.

Azerbaijan almost doubled its military spending in 2011 in comparison to 2010 at around \$2.9 billion. In the late 2011 Azerbaijani Parliament approved the \$22 billion state budget for 2012 with 14.8% earmarked for defence spending. In other words, the government earmarked \$4 billion for the needs of the armed forces in 2012. The sustainable growth of the defence spending is proportional to the nation's growing GDP. According to the IMF's outlook on the potential economic growth in the region, while Azerbaijan's nominal GDP in 2011 was \$68.5 billion, it is expected to amount to \$81 billion in 2012, which is 2.83 times the combined GDP of neighbouring Armenia and Georgia<sup>188</sup>.

Similarly, Armenia and Nagorny Karabakh have been expanding their defence capabilities.

However, the sides managed to avoid resuming large scale military hostilities in the conflict zone. They maintained status quo and a relative truce at the line of contact.

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<sup>188</sup> <<http://www.chaspik.spb.ru/world/azerbajdzhan-narashhivaet-voen-nyj-potencial/#ixzz1pZd7NIrx>>.

The OSCE's Minsk Group played a positive role in the situation<sup>189</sup>, largely because the co-chairing states maintained similar approaches to the peaceful resolution of the Karabakh problem. The co-chairs worked out a consensus on absolute inadmissibility of any armed hostilities in NK. This concept was reaffirmed at the OSCE summit in Astana in December 2010, where Russia, the USA and France expressed their concerns over Azerbaijan's attempts of military intimidation and selective approach to certain elements of the negotiation process which, however, should be always considered integrally.

The co-chairing states of the OSCE Minsk Group, with Russia's active support, contributed to a sustainable truce in this sensitive area against the background of the unwillingness on the part of the conflicting communities and leaders to compromise.

The approaches of major actors in the Nagorno-Karabakh conflict have been shaped by such factors as security interests, energy and communications, as well as historical and cultural proximity to the region.

Russia tries to remain impartial and neutral to both Baku and Yerevan in the negotiations over NK, and believes the negotiations should irreversibly turn from military to political matters, and the adversaries should forego use of force. An agreement should be assured by the international guarantees.

Regular meetings of the leaders of three states – Russia, Azerbaijan and Armenia – promoted the path to peace in Karabakh.

On 23 January 2012, the Russian city of Sochi hosted the 10<sup>th</sup> Presidential meeting between Russia, Azerbaijan and Armenia on the Karabakh conflict settlement. The joint statement made at the end of the meeting contained provisions on 'the promotion of the agreement on key principles of the Nagorno-Karabakh conflict settlement' and the willingness of the conflicting sides to 'enhance the negotiations on an agreement on main principles based on the previous arrangements'. The presidents confirmed that humanitarian contacts between the sides had been one of the major confidence-

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<sup>189</sup> The OSCE Minsk Group was created in 1992. It included 11 ambassadors of various states. The Minsk Group is mandated to encourage a peaceful, negotiated resolution to the conflict over Nagorno-Karabakh. The Budapest summit in December 1994 reduced the number of mediators and authorized the co-chairmen of the Minsk Group to hold the negotiations (since 1997 these states were Russia, the USA and France).

building tools. Azerbaijan and Armenia confirmed their commitment to building an effective dialogue between intellectuals, expert communities, and public organizations'<sup>190</sup>.

It is fair to say, that the summit talks could be even more effective if the format included the president of Nagorno-Karabakh.

Ignoring a *de facto* independent state and its population appears to be a futile policy.

Growing number of experts is coming to the conclusion that involvement of Stepanakert is vital to the peaceful settlement of the conflict. 'People of the Nagorny Karabakh suffered the most in the conflict; the settlement should primarily ensure their right to freedom, independence and security'<sup>191</sup>. It is highly unrealistic to expect Karabakh people's return to Azerbaijan's jurisdiction. The major hazard is a new phase of resumed armed conflict or its 'internationalization'.

Moscow has been persistently urging the conflict sides to enhance their confidence- building efforts, resume a direct dialogue and good neighbourly relations, and work out a compromise solution to the Nagorno-Karabakh's status.

The Azerbaijanis and Armenians in the region (Azerbaijan, Armenia and the Nagorny Karabakh) have been *de facto* divided along ethnic lines. Hundreds of thousands of refugees and displaced persons could not return home for around twenty years. A whole new generation grew up who know about their lost homes only from their parents or mass media.

The efforts to solve the issue of the ethnic Azerbaijani community return to Nagorno-Karabakh without ensuring the ethnic Armenians return to Azerbaijan and, respectively, ethnic Azerbaijani return to Armenia are viewed as 'an attempt to replace only a single link in a broken chain'. Azerbaijan, trying to recover the Nagorny Karabakh at all cost, tends to hush up the issue involving the place of the future Armenian minority in the government and society of Azerbaijan. Is Baku really willing to share the power with ethnic Armenians and offer them proportionately adequate representation in the parliament, government, public offices, law enforcement bodies, and codify the rights and freedoms of ethnic Ar-

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<sup>190</sup> <[www.panorama.am/ru/politics/2012/01/23/sochi-statment/?sw](http://www.panorama.am/ru/politics/2012/01/23/sochi-statment/?sw)>.

<sup>191</sup> Zargaryan, R., 'Negotiations inefficient without Nagorno-Karabakh', <[www.journal-neo.com/?q=ru/node/12894](http://www.journal-neo.com/?q=ru/node/12894)>.

menians, including declaring Armenian the second official language? It will take time for mental and physical wounds of the Azerbaijani-Armenian conflict to heal, for hostility towards each other, primarily between the elites and the nationalist groups, to resolve.

Hence the importance of the Joint statement of the Russian, Azerbaijani and Armenian presidents, adopted in Sochi in March 2011, which documented the commitment of the sides to negotiate the dispute peacefully and investigate any incidents along the cease-fire line under the auspices of the OSCE's Minsk Group.

Russia believes that the investigation mechanisms should be worked out as soon as possible. Other members of the Minsk Group share this view.

The resumed dialogue between intellectuals, expert communities, and public organizations of Azerbaijan and Armenia is a promising and efficient way to build peaceful and friendly relations between the neighbours. For example, such would be joint trips of Armenian and Azerbaijan groups to the Nagorny Karabakh, Yerevan and Baku.

The 64th session of the UN General Assembly in December 2009 adopted (without a vote) the resolution 'Universal realization of the right of peoples to self-determination'. The UN reiterated its support of universal realization of the right of peoples to self-determination and urged to give special attention to the violation of such rights. Aspiration of peoples around the world to use referendums and other democratic procedures to form into sovereign statehood is an increasing trend of modern times. Russian experts believe that a breakthrough in the conflict settlement can only happen after the sides overcome the existing stalemate, when one side is getting ready to fight back the lost national territory while the other holds the defences. It is time the sides abandon the illusion of solving the problem by destroying the adversary, and transfer the matters into the political field and give up the use of force<sup>192</sup>.

The progress and compromises in the negotiations will encourage normal relations between the neighbouring nations, boost the socioeconomic development of the local area, as well as promote regional and international security.

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<sup>192</sup> Kazimirov, V., 'It's not time that defines the way to peace in Karabakh', *Nezavisimaya Gazeta*, 21 Mar. 2012.

## 10. HIGH-PRECISION CONVENTIONAL WEAPONS AND INTERNATIONAL SECURITY

Tatiana ANICHKINA

The signing of the Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) has moved the issue of strategic non-nuclear weapons to the top of the international political agenda. New START provides for some measures for limitation of non-nuclear warheads, ICBMs, SLBMs and their delivery systems.

Russian expert Evgeny Miasnikov proposes the following definition: strategic conventional weapons are ‘non-nuclear weapons that have a counterforce potential and therefore can affect the strategic balance between the United States and Russia’<sup>193</sup>.

As regards high-precision weapons, the Russian Military Encyclopaedic Dictionary offers the following definition: ‘The high-precision weapon is a guided weapon capable of hitting the target on the first launch (shot) with a probability of not less than 0.5 at any distance within its range. Foreign military specialists include in the high-precision weapons category various land-based, air-launched and sea-launched missile complexes, guided bombing and artillery weapons as well as reconnaissance-strike weapons’<sup>194</sup>.

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<sup>193</sup> Miasnikov, E., ‘Strategic Non-Nuclear Arms: Problems and Solutions’, *Indeks Bezopasnosti*, vol. 17, no. 1 (2011), p. 123.

<sup>194</sup> Ogarkov, N.V., (ed), *Military Encyclopaedic Dictionary* (Moscow, 1984), p. 159.

Thus the high-precision strategic weapons include all types of the above-mentioned weapons on delivery platforms with ranges exceeding 5500 km.

### **US high-precision weapons programmes**

The United States is more advanced compared to other, even developed, countries, in the matter of operational concepts and programmes of developing high-precision weapons. Washington and its allies have used medium- and short-range high-precision weapons systems since World War II. However, it was the Desert Storm operation which involved the use of long-range high-precision air- and sea-launched weapons in Iraq that marked a milestone in the history of conventional warfare. The main principle of that and the following military campaigns was achieving a maximum effect with a minimum of forces. During the first Gulf War one warplane equipped with a high-precision weapons system performed the same volume of tasks as an air group of 1000 planes carrying more than 9000 weapons during World War II. And since the times of the Desert Storm significant progress has been achieved in the development of high-precision weapons: while in the 1990s the time lag between identifying the target and striking it amounted to days, during the last war in Iraq (2003) it was measured in hours.

As for high-precision weapons on strategic carriers some elements of which are at the development or testing stage and are at least 5–10 years away from deployment, they represent, according to the US administration, a relevant and convenient ‘series of graded options that can be a realistic, serious deterrent’<sup>195</sup>. They can be used against remote, deeply buried and time-sensitive targets inaccessible for other types of conventional weapons.

The US Defense Department’s interest in the development of high-precision conventional weapons on strategic delivery vehicles is due to the fact that today only deployed long-range ballistic missiles equipped with nuclear warheads can hit a target anywhere in the world within an hour. Using this kind of weapons against non-nuclear targets – terrorist bases or conventional missile arse-

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<sup>195</sup> ‘Excerpts from Obama Interview’, *New York Times*, 5 Apr. 2010, <<http://www.nytimes.com/2010/04/06/world/06armstext.html?ref=world>>.

nals – is not only inadequate, but also contrary to the Washington’s current politics of using nuclear weapons. As stated in the 2010 Nuclear Posture Review, ‘the fundamental role’ of the US strategic offensive forces is ‘to deter nuclear attack on the United States, our allies, and partners’. It further states that Washington will continue to develop its conventional military capabilities ‘with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of US nuclear weapons’<sup>196</sup>.

The programmes to develop high-precision conventional weapons on strategic carriers began to actively develop under the George W. Bush administration that argued that in the event of a military crisis, the option of attacking an enemy with high-precision conventional weapons provided the commander-in-chief of the US armed forces with a wider range of military tools, which reduced the necessity to resort to nuclear weapons<sup>197</sup>.

The George W. Bush administration proposed to arm missiles deployed at Trident II submarines with conventional warheads. The US Congress blocked this initiative in 2008 out of concern that Russia might mistake strategic missiles armed with conventional warheads for nuclear ones and conclude that the United States launched a nuclear attack. Eventually the Pentagon refused to develop high-precision conventional weapons systems on ballistic missiles. Instead, as stated in the White House report to the Congress, the Department of Defense would continue to develop the ‘boost-glide’ technology (employs nonstandard ballistic missiles to propel delivery systems into space) that has a non-ballistic flight path, and therefore it cannot be mistaken for a nuclear warhead delivery system<sup>198</sup>.

Central to the development of conventional long-range strike programmes is the Conventional Prompt Global Strike (CPGS) con-

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<sup>196</sup> US Department of Defense (DOD), *Nuclear Posture Review Report* (DOD: Washington, DC, Apr. 2010), pp. vii-ix.

<sup>197</sup> US Senate Committee on Armed Services, ‘Statement of Admiral James O. Ellis, USN, Commander, United States Strategic Command, Before the Senate Armed Services Committee, Strategic Subcommittee, on Command Posture and Space Issues’, 12 Mar. 2003, p. 13, <<http://armed-services.senate.gov/statemnt/2003/March/Ellis.pdf>>.

<sup>198</sup> ‘Pentagon Revises Prompt Global Strike Effort’, *The Nuclear Threat Initiative*, <<http://www.nti.org/gsn/article/pentagon-revises-prompt-global-strike-effort/>>.



cept which the former US Secretary of Defense Robert Gates described as the ‘capability to attack targets anywhere on the globe in an hour or less’<sup>199</sup>. One of the aims of the programme, according to the former Vice Chairman of the Joint Chiefs of Staff James Cartwright, is that ‘prompt global strike should also serve as an alternative to comparable nuclear weapons, particularly where the use of nuclear weapons would be inappropriate’<sup>200</sup>.

The idea of CPGS ran through the three latest Quadrennial Defense Review Reports in 2001, 2006 and 2010. The first of these declared that the US defense strategy ‘rests on the assumption that the US forces have the ability to project power worldwide’<sup>201</sup>. The 2006 Review defined the CPGS aims and mission in more specific terms: ‘to attack fixed, hard and deeply buried, mobile and relocatable targets with improved accuracy anywhere in the world promptly upon the President’s order’<sup>202</sup>. Finally, the 2010 Review prepared by the Barack Obama administration, further specified the place of CPGS in the modern structure of the US armed forces: ‘Enhanced long-range strike capabilities are one means of countering growing threats to forward-deployed forces and bases and ensuring US power projection capabilities’<sup>203</sup>. Thus the current administration added the mission of strengthening the regional security architecture to the global tasks of CPGS set by the previous administration. The important role of CPGS as an instrument of regional deterrence is confirmed in the 2010 Nuclear Posture Review: ‘These capabilities [of CPGS – T.A.] may be particularly valuable for the defeat of time-urgent regional threats’<sup>204</sup>.

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<sup>199</sup> US Senate Committee on Armed Services, ‘Statement of Secretary of Defense Robert M. Gates’, 17 June 2010, <<http://armed-services.senate.gov/statemnt/2010/06%20June/Gates%2006-17-10.pdf>>.

<sup>200</sup> US Senate Committee on Armed Services, ‘Advance Questions for General James E. Cartwright, USMC, Nominee for the Position of Vice Chairman of the Joint Chiefs of Staff’, 9 July 2009, <<http://armed-services.senate.gov/statemnt/2009/July/Cartwright%2007-09-09.pdf>>.

<sup>201</sup> US Department of Defense (DOD), *Quadrennial Defense Review Report* (DOD: Washington, DC, Sep. 2001), p. 43.

<sup>202</sup> US Department of Defense (DOD), *Quadrennial Defense Review Report* (DOD: Washington, DC, Feb. 2006), p. 49.

<sup>203</sup> US Department of Defense (DOD), *Quadrennial Defense Review Report* (DOD: Washington, DC, Feb. 2010), p. 32.

<sup>204</sup> *Nuclear Posture Review Report*, p. 34.

Future CPGS programmes are being developed under the US Defense Advanced Research Projects Agency (DARPA), the Air Force Space and Missiles Systems Centre and the US Army Space and Missile Defense Command.

Beginning from fiscal year 2003 about \$1 billion has been spent on research and development in the field of conventional long-range high-precision weapons, and if funding remains at the same level, by the end of fiscal year 2015 the overall cost of the CPGS programs will amount to \$2 billion<sup>205</sup>. The Obama administration has earmarked a total of \$1 billion for CPGS development in 2011–2015 fiscal years, of which \$239.9 billion are to be spent in fiscal year 2011. The Pentagon's request for appropriations for fiscal year 2012 is \$204.8 million. In fiscal year 2010 appropriations for these purposes stood at \$165.6 million, most of which are to be spent on the development and testing of technologies for CPGS systems to be deployed in the continental US<sup>206</sup>.

Research under CPGS programs is currently proceeding in three areas.

1. Technology experiments on Hypersonic Technology Vehicle-2, or HTV-2. The US Defense Department allocated \$308 million to DARPA for the development and two flight tests of HTV-2.

2. Conventional Strike Missile, or CSM. The Pentagon plans to allocate \$477 million to the US Air Force in fiscal years 2008–2013 to complete a series of demonstration and operational flights.

3. Technology experiments to develop the Advanced Hypersonic Weapon, or AHW. The Defense Department is planning to invest \$180 million in completing AHW flight experiments as part of the Army CPGS program in fiscal years 2006–2011<sup>207</sup>

The CSM of the US Air Force with a payload delivery vehicle being developed either jointly by DARPA and the US Air Force (HTV-2) or by the US Army (AHW) have the biggest chances of becoming central projects for CPGS.

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<sup>205</sup> Calculated from: US Department of Defense (DOD), *Fiscal Year (FY) 2011 Budget Estimates. February 2010. Research, Development, Test and Evaluation, Defense-Wide. Volume 3B* (DOD: Washington, DC, Feb. 2010), pp. 257–271.

<sup>206</sup> US Department of State, 'Investments in Conventional Prompt Global Strike', <<http://www.state.gov/t/avc/rls/152730.htm>>.

<sup>207</sup> Ibid.

On 18 November 2011 the US Army Space and Missile Defense Command successfully tested a first prototype of AHW. The missile was launched from the Pacific Missile Range Facility in Hawaii and hit the target at the Ronald Reagan Ballistic Missile Defense Test Site on Kwajalein Atoll having covered over 3700 km in 30 min.<sup>208</sup>

However, because the US Air Force supersonic glider has never yet passed flight tests successfully it will not be deployed before the end of the current decade. Therefore the US Congress in discussing the military budget is considering several other programmes (land-based ballistic missiles, SLBMs, submarine-launched medium-range ballistic missiles, strategic bombers, Tomahawk cruise missiles, the supersonic combustion ramjets as well as the Forward-Based Global Strike, i.e. the deployment of long-range ground-based ballistic missiles outside the US territory, of which the project of replacing nuclear warheads on Minuteman III ICBMs with conventional warheads is at the most advanced stage (another option is no warhead at all with the target destroyed by kinetic energy).

Thus a clear trend can be discerned of the shift of some tasks previously fulfilled by nuclear weapons to high-precision conventional weapons on strategic carriers in the US doctrinal thinking backed up by technical developments in the sphere.

### **Russia and high-precision conventional weapons**

The Russian political and military leadership declares that Russia will not abandon nuclear weapons until it acquires high-precision conventional weapons comparable to nuclear weapons in their functional outcome. In an article published on 24 February 2012 in a Russian newspaper, then-Prime Minister Vladimir Putin acknowledged that in the development of certain technologies Russia's foreign partners are 'in some ways ahead of us, especially in high-precision weapons'. 'Bearing in mind the destructive power of modern weapon, as well as the accuracy and delivery time to the territory of a potential enemy, such systems becomes comparable to

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<sup>208</sup> 'Pentagon Tests Long-Range Hypersonic Weapon', BBC News, <<http://www.bbc.co.uk/news/world-us-canada-15790620>>.

weapons of mass destruction. There is already not much difference in their effect and in the future there will probably be no difference at all. We will give up nuclear weapons only when we are armed with such weapon systems and not a day earlier'.<sup>209</sup>

Potentially conventional warheads can be put on carriers of any component of the Russian nuclear triad: ground, air, or sea. However, at present Moscow has no deployed high-precision conventional weapon on strategic delivery platforms.

Part of the reason is that the priority of the Russian military budget in the field of strategic weapons is modernization of the Strategic Nuclear Forces, and the limitations of the military budget are another reason. Even so, the Russian Armed Forces possess several systems of high-precision short- and medium-range weapons on air and ground platforms.

At present the Russian Land Forces have artillery weapons (Santimetr, Smelchak, Krasnopol, Kitolov-2M) that are intended to strike against observable targets (tanks, APVs, self-propelled guns, etc.). Unobserved armoured targets are vulnerable to high-precision warheads of the Smerch multiple rocket launcher with 9M55 K1 missile fitted with self-targeting Motiv-3M elements. The X-555 long-range cruise missile was put in service with the Russian Air Force in 2004.

The development of high-precision weapons, in particular, operational-tactical Iskander missiles, is an important task of the new State Armaments Programme for 2011–2020 (GPV-2020). According to GPV-2020, ten Iskander brigades are to be procured over the next nine years<sup>210</sup>. The Raduga State Machine-Building Design Office is working on new weapons including Ovod-ME with X-59M2E missiles and satellite-targeted correctable air bombs KAB-500S-E. 'The measures planned until 2020 will increase the share of modern high-precision weapons by 18 times to 70%,' according to the Deputy Air Force Commander for aviation Igor Sadofiev<sup>211</sup>.

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<sup>209</sup> Putin, V., 'Russia Will Not Abandon Nuclear Weapons until It Gets Similar Systems', *Rossiiskaya Gazeta*, 24 Feb. 2012.

<sup>210</sup> 'High-precision Weapons Share in Russian Air Force Will Increase 18 Times Until 2020', RIA Novosti, <[http://www.rian.ru/defense\\_safety/20101201/303151028.html](http://www.rian.ru/defense_safety/20101201/303151028.html)>.

<sup>211</sup> 'In 10 Years High-precision Weapons Share in Russian Air Force Will Increase 18 Times', *Rossiiskaya Gazeta*, <<http://www.rg.ru/2010/12/01/sadofiev-anons.html>>.

Russia is seriously concerned about the development of high-precision weapons programmes by the US. The Russian military doctrine considers the CPGS programme to be the fourth most significant external threat to the national security<sup>212</sup>.

Micah Zenko, an American expert, identifies three problem areas the Russian side is concerned about in connection with the American CPGS programme. First and most important, a US launch of strategic missiles with conventional warheads can be mistaken by an early warning radar system for a nuclear missile, thus provoking a retaliatory nuclear strike. Second, CPGS potentially blurs the boundaries between nuclear and non-nuclear weapons because some conventional weapons programmes under CPGS match the potential of small nuclear weapons. Third, there are fears that CPGS systems may tip the strategic balance by providing the capability to deliver conventional counterforce strikes on Russian military facilities.<sup>213</sup>

Naturally, during the course of negotiations on New START signed by the US and Russian presidents on 8 April 2010 and effective as of 5 February 2011, the problem cropped up of including strategic carriers of conventional warheads in the Treaty. Proceeding from the above, the Russian side in the negotiations initially insisted on banning the placement of conventional weapons on strategic ballistic missiles.

The United States rejected the proposal because it would limit the current developments under CPGS programmes. Nevertheless the parties agreed to include in the preamble to the Treaty a provision on the 'impact of conventionally armed ICBMs and SLBMs on strategic stability'<sup>214</sup> and the US agreed that its long-range missiles fitted with conventional warheads are covered by limitations to 700 units and their conventional warheads are to be limited to 1550 units established under New START because the latter draws no distinctions between conventional and nuclear mis-

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<sup>212</sup> President of Russia, Military Doctrine of the Russian Federation, <[http://news.kremlin.ru/ref\\_notes/461](http://news.kremlin.ru/ref_notes/461)>.

<sup>213</sup> Zenko, M., *Toward Deeper Reductions in US and Russian Nuclear Weapons*, CFR Special Report #57 (Nov. 2010), p. 18.

<sup>214</sup> Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, signed 8 April 2010, p. 2.

siles (the previous 1991 START did not make such distinctions either).

On the other hand, New START as interpreted by Washington<sup>215</sup> does not impose any restrictions on the development of a hypersonic glider that uses a carrier rocket at the boost stage. One American argument is that the glider's flight trajectory is not ballistic. Under the Treaty the Russian side in this connection has the right to raise the issue of a new type of strategic offensive weapon in the framework of the Bilateral Consultative Commission, however, lack of agreement between Russia and the United States on the issue cannot prevent or delay prompt deployment of such weapons systems.

### **Implications for international security**

High-precision conventional weapons have a direct impact on international security and stability and, in a broader context, transcend the strategic relations between the US and Russia.

As Paul Nitze, a prominent American diplomat and one of the authors of the US nuclear deterrence strategy, has noted, the growing potential of high-precision conventional weapons to perform strategic tasks that are currently performed by nuclear weapons will ultimately make the latter redundant<sup>216</sup>. Naturally, the first casualty in this case will be tactical nuclear weapons, i.e. the weapons whose mission can be handed over to high-precision conventional weapons at the lowest cost.

Not so with strategic nuclear arms. While strategic functions, including the potential of first disarming strike and the guarantee against such a strike being launched by an adversary are handed over to high-precision conventional weapons, a regime of mutual assured destruction may re-emerge, only it will be supported by high-precision conventional weapons on high military alert and a renewed concept of launch upon warning. That situation will hardly be conducive to greater strategic stability. The crucial issue is what

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<sup>215</sup> US Department of State, 'Article-by-Article Analysis of the New START Treaty Documents', <<http://www.state.gov/t/avc/trty/141829.htm#text>>.

<sup>216</sup> Nitze, P.H., 'A Conventional Approach', *Proceedings*, vol. 120 (May 1994), pp. 46-51.

role the high-precision conventional weapons on long-range carriers will be assigned: to replace or to complement nuclear weapons.

As for the ability of high-precision conventional weapons to perform the functions of deterrence, opinions on the issue vary among experts. Authoritative Russian specialists Alexei Arbatov, Vladimir Dvorkin and Sergei Oznobishchev categorically reject the comparability of the two types of weapons: 'There is no doubt that high-precision conventional weapons, contrary to the widespread new-fangled thesis, will never come near to nuclear weapons when it comes to strikes on key highly protected or mobile military targets, not to speak of administrative and industrial centres'<sup>217</sup>. That view is shared by another Russian expert Vladimir Belous: 'In terms of its deterrent characteristics the high-precision weapon undoubtedly is much inferior both to strategic and tactical nuclear weapons'<sup>218</sup>.

Other military experts believe that inasmuch as the 'effectiveness of high-precision conventional weapons approaches that of tactical nuclear weapons' the former 'emerge as a deterrent factor approximating the nuclear weapon in that respect'<sup>219</sup>.

An American scholar Michael Gerson, proceeding from the 1960s concept of two types of nuclear deterrence, maintains that nuclear weapons and high-precision conventional weapons in the XXI century may assume respectively the functions of deterrence by punishment and deterrence by denial, thus sharing the functions of a single strategic deterrence instrument<sup>220</sup>.

As has been mentioned above, the official position of the US President Barack Obama is that conventional high-precision weapons mounted on strategic carriers can perform a deterrent role at the regional level. The 2009 US Congress report prepared by the Commission on the Strategic Posture of the United States admitted that

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<sup>217</sup> Arbatov, A.G., Dvorkin, V.Z., Oznobishchev, S.K., *Non-nuclear factors of nuclear disarmament (missile defense, high-precision conventional arms, and space weapons)* (Moscow, 2010), p. 32.

<sup>218</sup> Belous, V.S., 'High-Precision Weapons: Deterrence or War', *Nezavisimoye Voennoye Obozrenie*, 18 Mar. 2005.

<sup>219</sup> Tsimbal, V.I., 'High-Precision Weapons as a Modern Tool of Warfare', *Nasledie.ru*, <<http://old.nasledie.ru/persstr/persona/cimbal/article.php?art=3>>.

<sup>220</sup> Gerson, M., 'Conventional Deterrence in the Second Nuclear Age', *Parameters* (Autumn 2009), pp. 32-33.

the US had conventional forces so powerful that 'it no longer needs to rely on nuclear weapons to deter the threat of a major conventional attack'<sup>221</sup>. The question is whether high-precision conventional weapons can deter the threat or use of nuclear weapons.

We believe that one has to take into account the possibility that precision weapons on short-, shorter- and medium-range carriers and (potentially) long-range carriers may perform the deterrence function respectively at the regional and global levels in the future. Speaking about strategic deterrence one has to say that high-precision conventional weapons being a more flexible and less politically committed instrument of external and military policies could be more effective as a deterrent. However, only developed countries can afford to pursue high-precision conventional weapons programmes (while high-precision weapons on strategic carriers are within the means of only the most advanced states).

On the one hand, this may lead to conventional weapons overkill and a conventional arms race among the countries that can afford it. On the other hand, for all the rest the acquisition of nuclear weapons is a 'cheaper' option of ensuring their national security. Obviously, this situation contradicts the aims of the nuclear non-proliferation regime and will have a negative impact on international nuclear disarmament.

The lesser political sensitivity of high-precision conventional weapon, i.e. the lack of a political and psychological taboo on its use (as distinct from 'the nuclear taboo') also prompts some legitimate questions about the lower ceiling of the use of conventional precision weapons in international conflicts compared with nuclear weapons. The advocates of CPGS programmes in the US argue that the high-precision weapons under development broaden the opportunities for the US forces to launch a conventional strike and diminish the possibility of the use of nuclear weapons when it is necessary to strike against a remote target at short notice. However, to date Washington has never faced a choice between using nuclear weapons or the impossibility of delivering a strike. The US forces have always possessed other types of conventional weapons even if delivering warheads to target took hours or days.

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<sup>221</sup> *America's Strategic Posture. The Final Report of the Congressional Commission on the Strategic Posture of the United States* (United States Institute of Peace Press: Washington, DC, 2009), p. 36.



At the same time there are reasons to doubt whether high-precision conventional weapons can assume the role of deterrent against the use of nuclear weapons. The main reason is that in this case high-precision conventional weapons should be capable of carrying out all the military missions that at present are performed by various types of nuclear weapons. In that respect, in the opinion of Chris Ford, an expert with the Hudson Institute, the fact that conventional precision strikes for the most part have a spot character, which rules out the possibility of so-called anti-value strikes (targeting the enemy industrial potential and population) and the fact that the effectiveness of these strikes depends not so much on accuracy as the magnitude of the strike and the area targeted may create a problem<sup>222</sup>. That circumstance takes on particular significance in the situation of transition from large full-blown arsenals of nuclear weapons to the minimum deterrence concept which implies anti-value targeting (which is much 'cheaper' than counter-force targeting in terms of the number of warheads used). Even if a multilateral agreement on deep cuts of nuclear weapons arsenals becomes a reality nuclear weapon states will be less inclined to give up their remaining nuclear warheads with a potential of anti-value deterrence in favour of high-precision conventional weapons that have no such potential. Such a renunciation, of course, is the final stage in any programme of complete nuclear disarmament, including the Global Zero initiative.

The final problematic aspect of the development and use of high-precision conventional weapons involves elements of the precision weapons systems that are intended to be deployed in outer space. Although neither the 1967 Space Treaty nor the 1968 Nuclear Non-Proliferation Treaty that limit the possibilities of placing weapons in space do not ban space operations with the use of conventional ballistic missiles and gliders, some scholars point out that the implementation of the CPGS programme would in a certain

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<sup>222</sup> Chris Ford's speech at the Conventional Deterrence in the Second Nuclear Age organized by the Carnegie Endowment for International Peace in Washington, Carnegie Endowment for International Peace, 17 Nov. 2010, <<http://carnegieendowment.org/events/?fa=eventDetail&id=3070>>.

sense violate the taboo on military activities in outer space which has for a long time been immutable<sup>223</sup>.

## Conclusions

The effectiveness of the use of high-precision conventional weapons on medium- and shorter-range carriers has been proved scientifically and in practice on a whole range of criteria: precision, reliability, minimal collateral damage, 'cost-benefit' analysis, efficacy of strikes on stand-alone and group targets (in the latter case with the use of multiple warheads).

However, a high level of information support is needed for tapping the entire potential of conventional precision weapons. An example in point is the unsuccessful attempts of the US military to 'decapitate' the Iraqi regime in 2003 that failed because there were not enough reconnaissance data. Another example is mistaken air raids on civilian facilities and civilian population during the latest conflicts in Iraq and Afghanistan because of wrong targeting and a lack of coordination between the coalition forces.

Besides, because conventional weapons are less destructive compared with nuclear weapons, the success of a high-precision conventional weapons operation depends on the number of warheads used simultaneously. At present, of all the states, only the United States has a quantity of high-precision conventional weapons on non-strategic carriers sufficient to launch a massive strike.

As for US high-precision conventional weapons on strategic carriers, new strategic missions assigned to them and the prospects of these weapons being recognized as a real deterrence instrument by the US administration. During the Cold War the strategic relations between nuclear powers were based on the doctrine of Mutual Assured Destruction which deterred a direct armed conflict between the nuclear powers. Therefore in handing over the tasks of military political deterrence from nuclear to high-precision conventional weapons it would be logical to try to preserve or enhance the stabilizing function that the nuclear arms performed.

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<sup>223</sup> Sills, L.G., *Space-Based Global Strike: Understanding Strategic and Military Implications*, Occasional Paper No. 24 (Center for Strategy and Technology. Air War College: Montgomery, 2001), p. 12.

If a non-nuclear strike with the help of strategic means of delivery capable of posing a threat to remote, deeply buried or time-urgent targets does become an element of American military strategy, then to preserve the principles of arms control such weapons systems (of whatever kind) should be included in the counting rules and the verification regime currently applied to nuclear warheads. Creating a control and verification regime specifically for general purpose high-precision conventional weapons is another option.

## 11. TRENDS IN MODERN SPACE ACTIVITIES

Natalia ROMASHKINA

Space exploration is a unique field of human activity. Space products and services play a pivotal role in global economy and have become a part of everyday life for millions of people around the world.

In general, space operations cover seven key sectors: energy, resources, environment, management and education; finance, trade and corporate services; tourism; transport, logistics, manufacturing; homeland and national security, intelligence; scientific research, biotechnology and healthcare<sup>224</sup>.

### Classification of space systems

*Space and missile programmes* are sets of relevant actions designed to create/procure and/or develop national or imported space systems<sup>225</sup>.

*Space systems* are combinations of space complex hardware and ground support facilities (data management hardware), designed for various missions and functions<sup>226</sup>.

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<sup>224</sup> 'The Space Report 2011. The Authoritative Guide to Global Space Activity', The Space Foundation, <<http://www.thespacereport.org>>.

<sup>225</sup> Gatland, K., et al., *Illustrated Encyclopedia of Space Technology* (Mir Publishers: Moscow, 1985).

<sup>226</sup> Glushko, V.P., *Development of Rocket Engineering and Cosmonautics in the USSR*, (Mashinostroenie: Moscow, 1987); Glushko, V.P., (ed), *Cosmonautics. Encyclopedia* (Sovetskaya Entsiklopedia: Moscow, 1985).

There are two main groups in functional classification of the space systems: combat and support space systems (Fig. 1).

**Space combat systems** are designed to attack targets in space and on the ground, i.e. space-based weapons.

**Space intelligence systems** are designed for photo-imagery and radio-electronic intelligence, and are essentially a type of **support systems** which include imaging and radio-electronic hardware.

*Imagery intelligence* includes *electro-optical* and *photographic intelligence*, and serves to determine the strategic, military and industrial potential of an adversary. These are vital for compliance verifications under current international arms control treaties.

*Electronic intelligence* includes monitoring of electromagnetic emitters in the radio frequency band and radar surveillance. Passive detection and recognition of radio emitters determines the location and combat characteristics of the radar and other facilities of an adversary. The nature and intensity of radio traffic reflect the operating mode of the adversary's military and enables detecting the upgrade to the combat readiness even before the optical intelligence.

Radar surveillance provides imagery of the terrain in radiofrequency band. Therefore, being close to radio-electronic intelligence, it still works more like an optical intelligence from the operator's point. Its main benefit is an ability to operate regardless of lighting conditions and weather, while the downside is a low spatial resolution<sup>227</sup>.

The space monitoring, which could be classified as intelligence, identifies ballistic missile launches of an adversary and detects any nuclear explosions with early warning satellites. The detection of the missile infrared blast allows identifying ballistic missiles in the active trajectory phase, i.e. detecting them before ground based radars.

Other **support space systems** include communication, navigation, geodetic and meteorological satellites.

*Satellite communication systems* facilitate strategic and tactical management of the armed forces.

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<sup>227</sup> Tarasenko, M., *Military aspects of Soviet space programme* (Nikol: Moscow, 1992).

*Navigation satellites* offer positioning capabilities to ships and planes, which is especially critical for nuclear-powered ballistic missile submarine.

*Geodetic satellites* are used to specify the dimensions of the Earth and configure the Earth's gravitational field, which are required for detailed topographic maps and precise targeting of ballistic missiles.

*Meteorological observations* provide general weather forecasting for the military and national economy and precise information on weather conditions in the areas of special interest, such as targeting sites for high-precision ballistic missiles.

Other support systems include *satellites used for radar calibration*, measurement of the upper-atmosphere density variations affecting the targeting accuracy of ballistic missiles, as well as experimental hardware to test future hardware and various civil and military research programs.

Orbital vehicles can be provisionally divided in several categories: *civil, commercial, and military space vehicles*. These are further subcategorized in functional sub-groups: communication satellites, Earth remote sensing satellites (ERS satellites), navigation satellites, meteorological satellites, research and experimental satellites, manned space vehicles, intelligence satellites (Fig. 2).

### **Major sectors and funding**

Virtually all leading states and many developing countries engage in space operations. Almost 180 states pursue individual missions in space; however, only few nations have the capabilities for compound and large-scale space projects in military, economic, research, social and other sectors. Majority of space operations are dual use.

Table 1 shows the space operations in the countries which run state space and missile programmes or countries which engineer their own or have imported space vehicles.

**Table 1. Countries participating in various space operations<sup>228</sup>**

Country	Type of space operation											
	1	2	3	4	5	6	7	8	9	10	11	12
Algeria												
Argentina												
Australia												
Austria												
Belgium												
Brazil												
Canada												
Chile												
China												
Czech Republic												
Denmark												
Egypt												
Finland												
France												
Germany												
Hong Kong												
India												
Indonesia												
Iran												
Israel												
Italy												
Japan												
Luxembourg												
Malaysia												
Mexico												
Netherlands												
Nigeria												
North Korea												

<sup>228</sup> Sources: Guscha, N.I., Romashkina, N. P., 'Missile and space operations of developing states and international security', *Security Index*, no. 4 (87) (Winter 2008); 'The Space Report 2010. The Authoritative Guide to Global Space Activity', The Space Foundation, <<http://www.thespacereport.org>>; 'The Space Report 2011. The Authoritative Guide to Global Space Activity', The Space Foundation, <<http://www.thespacereport.org>>.





are mostly funded by the governments with limited commercial involvement. In 2011, 52 states participated in space activities, recognizing their strategic and practical value.

There has been a notable tendency towards a growing number of space launches in the last two decades (around 1100 launches between 1991 and 2000 worldwide, whereas between 2001 and 2010 various countries launched about 2000 space vehicles). The space launches in 2001–2010 included 51% commercial launches, 25% were civil launches and military missions constituted 24%<sup>229</sup>.

In 2010, 25 states and international organizations launched 94 satellites<sup>230</sup>. Fig. 3 shows the breakdown of 2010 satellite launches based on the type of mission.

In 2009, 78 launches were made at 17 space launch sites. 111 various payloads were inserted into the orbit. The United States and Russia are the launch leaders with 24 and 29 launches, respectively. The US has launched more Atlas and Delta rockets as well as Space Shuttle reusable spacecraft, ending the flight programme of the latter in 2011. China made 6 launches, Europe – 7, Japan – 3, India – 2. Iran, South Korea and North Korea each made 1 launch (the first launches for all of them), some of which failed. International company Sea Launch made four commercial launches, of which three were made at Nazemny Start launch site in Kazakhstan<sup>231</sup>.

It has been projected that before the end of 2012, satellites will be launched by Argentina, Australia, Austria, Bolivia, Bulgaria, Chile, Columbia, Czech Republic, Denmark, Egypt, Greece, Indonesia, Kazakhstan, Laos, Luxembourg, Malaysia, Mexico, Netherlands, Norway, Pakistan, Portugal, Romania, Saudi Arabia, South Africa, Spain, Sweden, Thailand, Turkey, Venezuela, and Vietnam. In the upcoming decade, around 50 commercial space vehicles will

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<sup>229</sup> ‘The status and development of orbital stations’, <<http://roscosmos.info/?p=3>>.

<sup>230</sup> ‘The Space Report 2011. The Authoritative Guide to Global Space Activity’, The Space Foundation, <<http://www.thespacereport.org>>.

<sup>231</sup> ‘The Space Report 2010. The Authoritative Guide to Global Space Activity’, The Space Foundation, <<http://www.thespacereport.org>>.

be launched annually. Approximately 1200 satellites will be engineered in over 50 countries worldwide<sup>232</sup>.

Table 2 shows the expected commercial launches. Majority of the launches will serve support (telecom and navigation) and intelligence purposes<sup>233</sup>.

**Table 2. Expected commercial launches<sup>234</sup>**

Types of space vehicles	2011	2012	2013	2014	2015	2016	2017	2018	Total	Average
Geostationary (estimates by <i>Commercial Space Transportation Advisory Committee US</i> )	22	20	20	20	19	20	20	19	208	20.8
Other (estimates by <i>Federal Aviation Administration, US (FAA)</i> )	26	12	14	37	41	35	12	10	260	26.0
<b>TOTAL</b>	<b>48</b>	<b>32</b>	<b>34</b>	<b>57</b>	<b>60</b>	<b>56</b>	<b>32</b>	<b>29</b>	<b>468</b>	<b>46.8</b>
Medium and heavy space vehicles at geostationary orbit	17	15	15	15	14	15	15	14	157	15.7
Medium and heavy space vehicles at other orbits	6	7	8	12	12	11	6	5	83	8.3
Small space vehicles outside geostationary orbit	4	2	3	2	2	2	3	2	27	2.7
<b>Total launches</b>	<b>27</b>	<b>24</b>	<b>26</b>	<b>29</b>	<b>28</b>	<b>28</b>	<b>24</b>	<b>21</b>	<b>267</b>	<b>2.7</b>

<sup>232</sup> ‘Introduction to Space Activities 2011’, The Space Foundation, <<http://www.spacefoundation.org/sites/default/files/downloads/IntroToSpace%202011.pdf>>.

<sup>233</sup> ‘The Space Report 2011. The Authoritative Guide to Global Space Activity’, The Space Foundation, <<http://www.thespacereport.org>>.

<sup>234</sup> Sources: ‘The Space Report 2010. The Authoritative Guide to Global Space Activity’, The Space Foundation, <<http://www.thespacereport.org>>; ‘The Space Report 2011. The Authoritative Guide to Global Space Activity’, The Space Foundation, <<http://www.thespacereport.org>>; Commercial Space Transportation Advisory Committee (COMSTAC), Office of Commercial Space Transportation, Federal Aviation Administration, <[http://www.faa.gov/about/office\\_org/headquarters\\_offices/ast/advisory\\_committee/](http://www.faa.gov/about/office_org/headquarters_offices/ast/advisory_committee/)>.

Therefore, the sales in the relevant market sectors have been on the rise. Table 3 and Figures 4-6 show some elements of space activity structure.

**Table 3. Economic parameters of space programmes (\$US b.)<sup>235</sup>.**

Type	2007	2008	2009	Increase 2008/ 2009*
<b>Commercial space infrastructure</b>	<b>92.22</b>	<b>84.43</b>	<b>83.63</b>	<b>-1%</b>
Launch services in commercial programmes	1.55	2.00	2.41	21%
Production of commercial space vehicles	3.80	5.20	5.14	-1%
Ground stations and hardware [including navigation and services]	86.87	77.23	76.09	-1%
<b>Infrastructure support</b>	<b>0.70</b>	<b>1.13</b>	<b>1.15</b>	<b>1%</b>
Independent R&D	0.17	0.18	0.19	2%
Insurance	0.53	0.95	0.96	1%
<b>Commercial satellite services</b>	<b>72.60</b>	<b>84.10</b>	<b>90.58</b>	<b>8%</b>
Direct to home (DTH) broadcast	55.40	64.90	68.14	5%
Satellite broadcast	2.10	2.50	2.46	-2%
Stationary and mobile satellite services	15.10	16.70	17.93	7%
Earth remote sensing	-	-	2.05	-
<b>Commercial manned space flights</b>	<b>0.04</b>	<b>0.04</b>	<b>0.08</b>	<b>100%</b>
Orbital flights	0.03	0.03	0.07	133%
Suborbital flights (deposits)	0.01	0.01	0.01	0%
<b>US government space budget</b>	<b>52.84</b>	<b>57.98</b>	<b>64.42</b>	<b>11%</b>
US DOD space budget	22.42	25.95	26.53	2%

<sup>235</sup> 'The Space Report 2010. The Authoritative Guide to Global Space Activity', The Space Foundation, <<http://www.thespacereport.org>>.

Budget of National Reconnaissance Office (NRO)	10.00	10.00	15.00	50%
Budget of National Geospatial-Intelligence Agency (NGA)	3.00	3.00	2.00	-33%
Budget of National Aeronautic and Space Administration (NASA)	16.25	17.40	18.78	8%
Budget of National Oceanic and Atmospheric Administration (NOAA)	0.80	0.80	1.25	31%
Budget of Department of Energy (DOE)	0.03	0.03	0.04	33%
Budget of Federal Aviation Administration (FAA)	0.01	0.01	0.01	0%
Budget of National Science Foundation (NSF)	0.33	0.63	0.80	28%
<b>Space budget of ESA and countries worldwide</b>	<b>13.96</b>	<b>16.50</b>	<b>21.75</b>	<b>32%</b>
European Space Agency (ESA)	4.02	4.27	5.16	21%
Argentina	-	-	0.07	-
Brazil	-	0.13	0.19	46%
Canada	0.37	0.30	0.33	9%
Chile	-	-	0.01	-
China	1.50	1.70	1.79	5%
European Union	-	-	1.56	-
France	0.95	0.97	1.06	9%
Germany	0.39	0.60	0.77	29%
India	0.66	0.82	1.06	29%
Israel	-	0.01	0.01	0%
Italy	0.65	0.44	0.47	7%
Japan	2.21	3.50	3.72	6%
Nigeria	-	-	0.02	-
Russia	1.32	1.50	2.90	93%
South Africa	-	-	0.08	-
South Korea	-	0.23	0.23	1%

Spain	-	-	0.06	-
United Kingdom	0.12	0.09	0.10	11%
Military space programs (except USA and China)**	1.77	1.95	2.18	12%
<b>TOTAL</b>	<b>232.36</b>	<b>244.19</b>	<b>261.61</b>	<b>7%</b>

\*Budget growth estimated in \$US has not been efficiently represented due to exchange rate fluctuations of the national currencies.

\*\*Estimate is based on the assumption that the military space spending of the United States has been stable at 95% level of the world spending and could not be reliable.

According to the Space Foundation, space economy world-wide sales totalled at 175.44 \$b., of which \$90.58 billion (over 50%) was space products and services sold to end consumers.

Total of national space budgets was \$86.17 billion, of which \$64.42 b. was the United States national space spending (the military space program spending accounted for over 50%)<sup>236</sup>. Table 4 shows government space budgets by countries: Fig. 4 sector which represents 8% of total space spending.

**Table 4. Government space budgets, 2009 (\$b.)<sup>237</sup>**

Country/Agency	Budget
International Space Agency	5.16
Argentina	0.07
Brazil	0.19
Canada	0.33
Chile	0.001
China	1.79
European Union	1.56
France	1.06
Germany	0.77

<sup>236</sup> Ibid.

<sup>237</sup> Table is based on the data, provided by The Space Foundation, <<http://www.spacefoundation.org>>.

India	1.06
Israel	0.01
Italy	0.47
Japan	3.72
Nigeria	0.02
Russia	2.90
South Korea	0.23
South Africa	0.08
Spain	0.06
United Kingdom	0.10
Military space programmespending (except the USA and China)	2.18
<b>TOTAL</b>	<b>21.75</b>

Thus, the analysis indicates the countries can be divided in six categories by the size of space spending:

- One single country – USA – spends 75% of combined annual world space spending;

- Russia has significantly upgraded its national space spending (see Table 5) at 3.4% of combined national space spending;

- Japan is the second largest space spender, whereas China has been consistently increasing its space budget, boosting it in the recent years to 2.5–4.3% and 1.7–2% of the combined space spending, respectively;

- Two countries – France and India – spend about \$1 billion;

- Space spending of six states – the United Kingdom, Brazil, South Korea, Canada, Italy and Germany – was between \$100 and \$800 million each;

- The rest of the states spend less than \$100 million on national space programs.

**Table 5. Funding of Russia's national space activities (m. roubles)**

<b>Funding source</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Federal Space Programme-2015	58230.00	67036.08	54831.41	54831.42
FTP 'GLONASS'	31526.65	27939.22	19293.57	29009.70*
FTP 'Development of Russian Cosmodromes'	2610.30	6385.60	6385.60	6385.60
FTP 'Development of Russian Defence Industry' (with regard to the space and missile programmes)	8161.22	8558.84	6552.36	4355.50
Bailout programme	14980.00			
<b>TOTAL Federal Budget)</b>	115508.17	109919.74	87062.94	94582.22
Extra-budgetary funds, incl.	8616.51	12899.10	12975.39	9707.10
<i>Federal Space Programme-2015</i>	3359.51	5630.00	5922.00	4862.00
<i>FTP 'GLONASS'</i>	5257.00	7269.10	7053.39	4845.10
Budgets of federal subjects	287.80	1856.00	2079.00	1935.00
<b>TOTAL (in general)</b>	124412.48	124674.84	102117.33	106224.32
* included in the draft FTP 'GLONASS' in 2012–2020.				

## Conclusions

1. Space vehicles building and improving can already be regarded as a global trend. Dozens of countries of various economic, technological and social levels are engaged in space activities. Space activities have been playing an increasingly important role in the geopolitical balance.

2. Space activities involve dual-use technologies determined by the combination of national civil and military space programmes. The analysis has identified two major system aspects of the issue. First of all, the military share in a missile and space programme is eventually governed by the global and regional security, which in its own turn is affected by a wide range of varying factors: active territorial claims, access to weapons of mass destruction (primarily nuclear weapons), stability of the governments in place and their relation to various extremist groups, etc. Secondly, the same factors shape the nature and extent of international technical cooperation, limiting it in the context of aggravated international situation.

3. A critical part of the sustainable international security is the prevention of an arms race in space and, in a much broader sense – prevention of using space for any hostile acts. Both factors deserve intensified diplomatic efforts of the Russian Federation involving leading researchers and specialists.

4. Various military space systems can generally facilitate the strategic stability, provided enhanced transparency in the military activities subject to compliance control under international arms control agreements, as well as strengthening confidence building measures and military predictability.



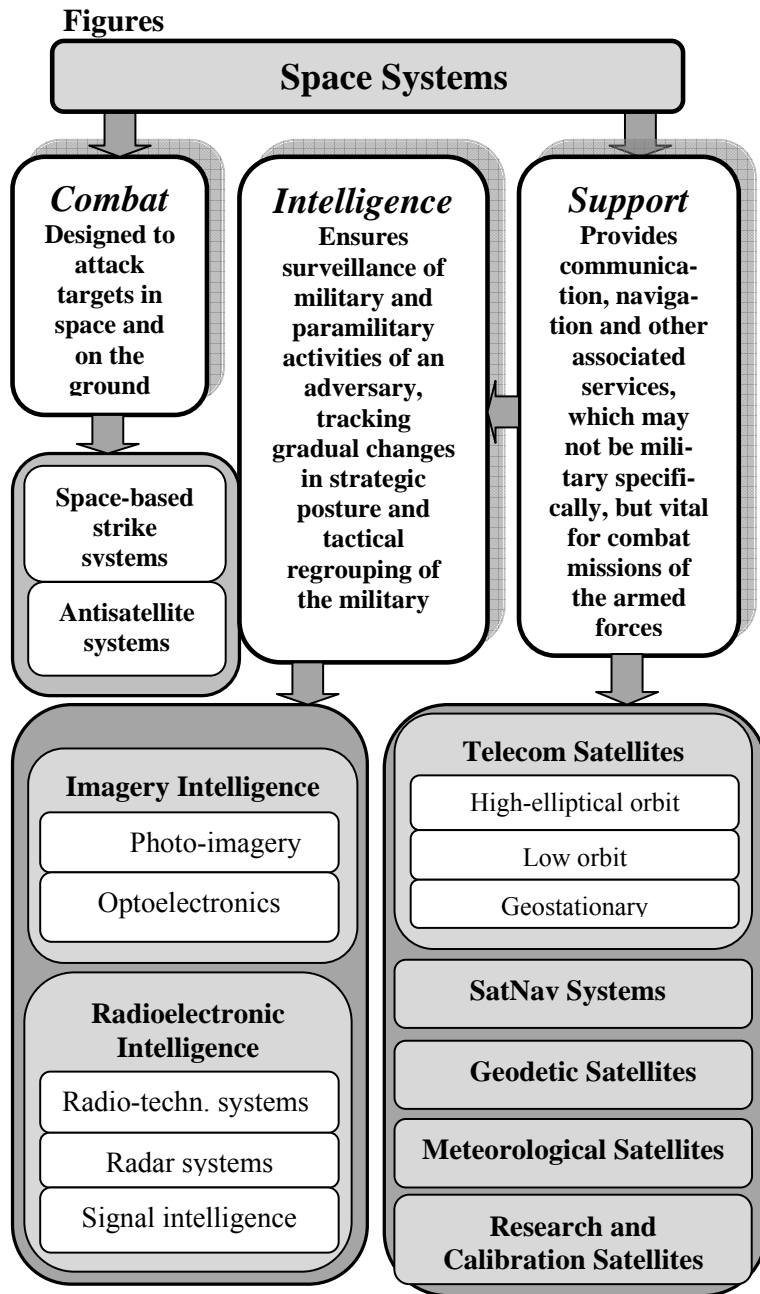


Fig. 1. Functional classification of space systems. Guscha N.I., Romashkina, N.P., 'Missile and space operations of developing states and international security', *Security Index*, no. 4 (87) (Winter 2008).

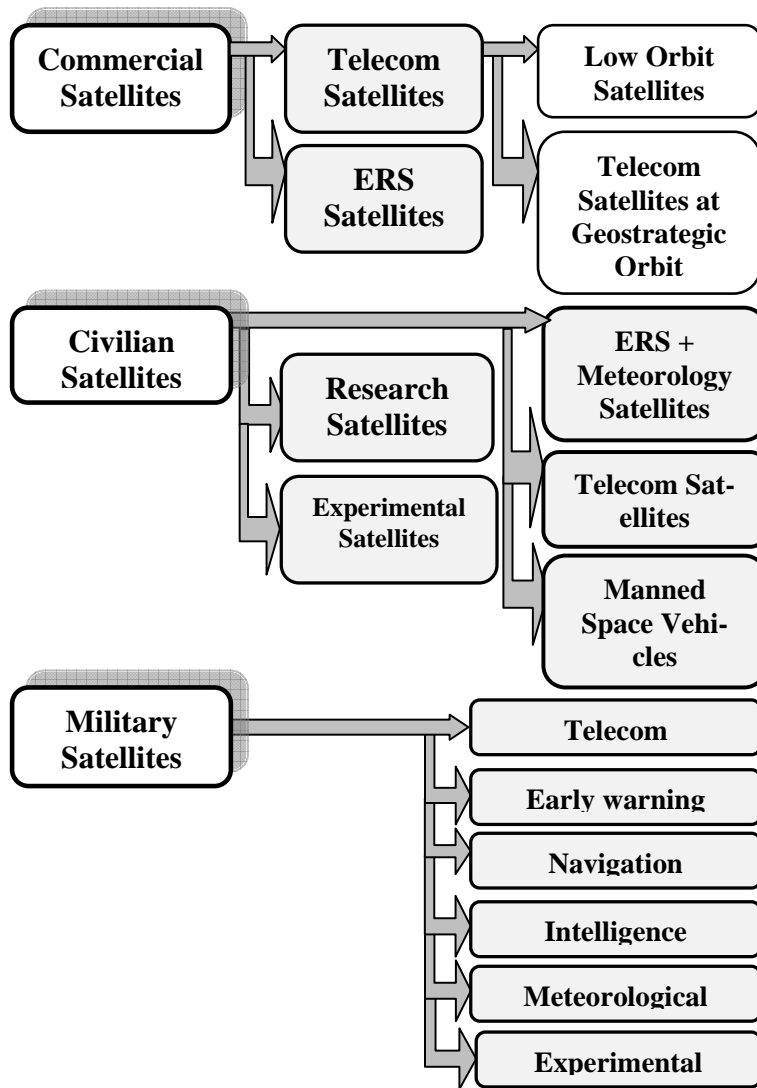


Fig. 2. Conventional classification of space vehicles by form of organization and mission.

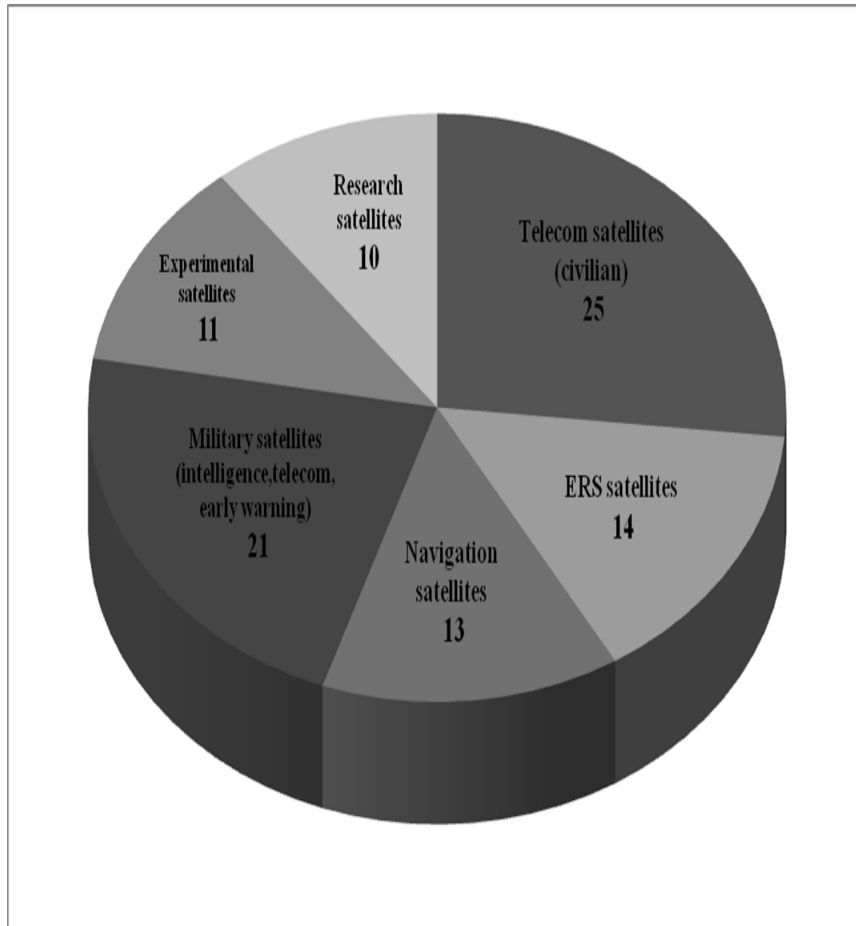


Fig. 3. Satellite launches in 2010 (number of satellites). The author compiled this figure based on the information from ‘The Space Report 2011. The Authoritative Guide to Global Space Activity’, the Space Foundation, <http://www.thespacereport.org>.

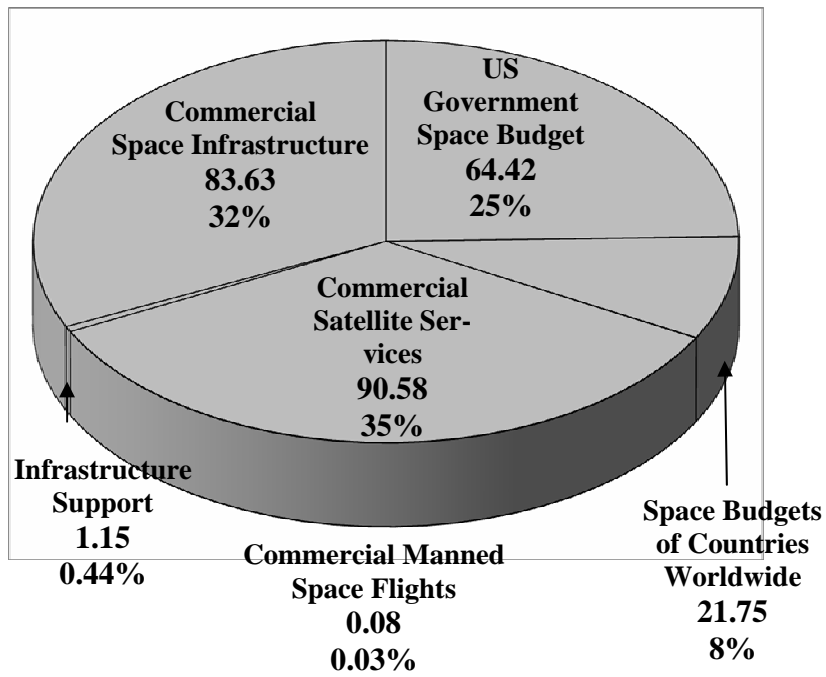


Fig. 4. Space economy in 2009 (\$b.; %). The Fig. is based on the data, provided by the Space Foundation, <<http://www.spacefoundation.org>>.

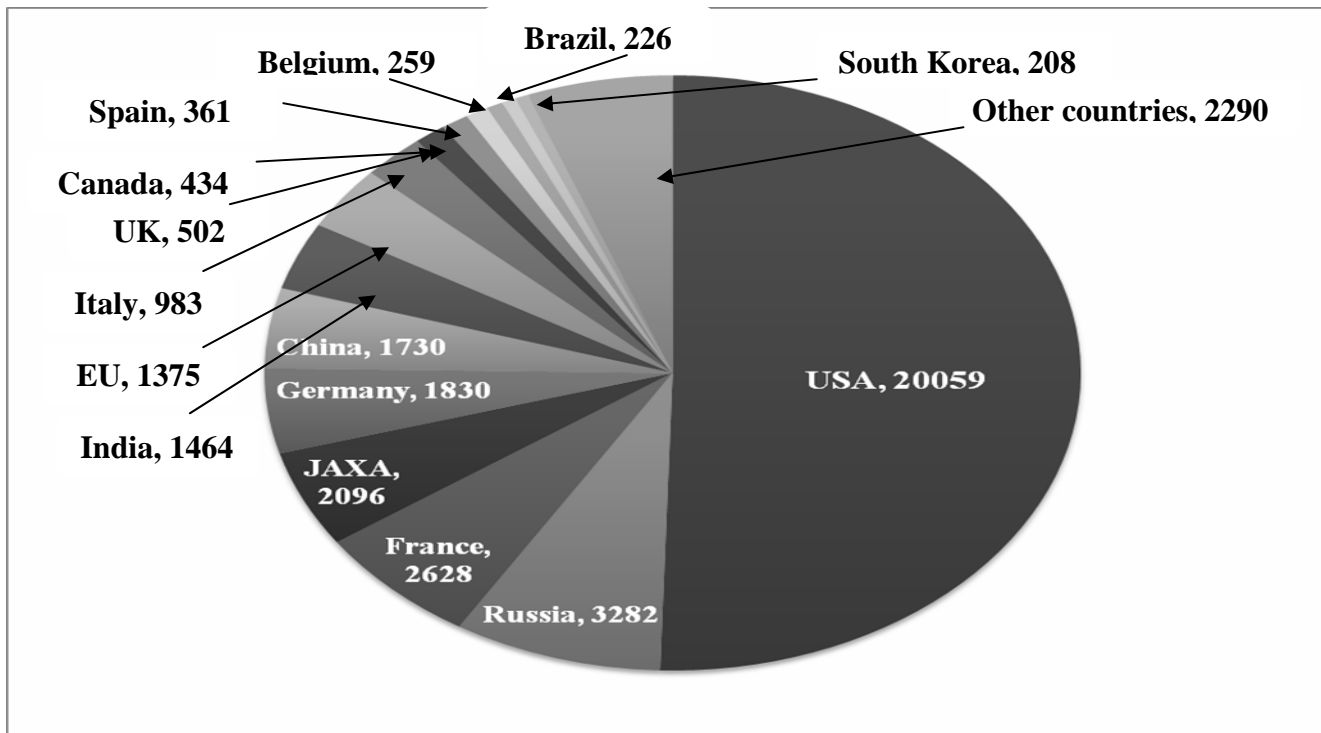


Fig. 5. Funding for civil space activities worldwide (\$m.) Total – \$35 970 m. The author compiled this figure based on the information from Government Space Programmes, Euroconsult 2010.

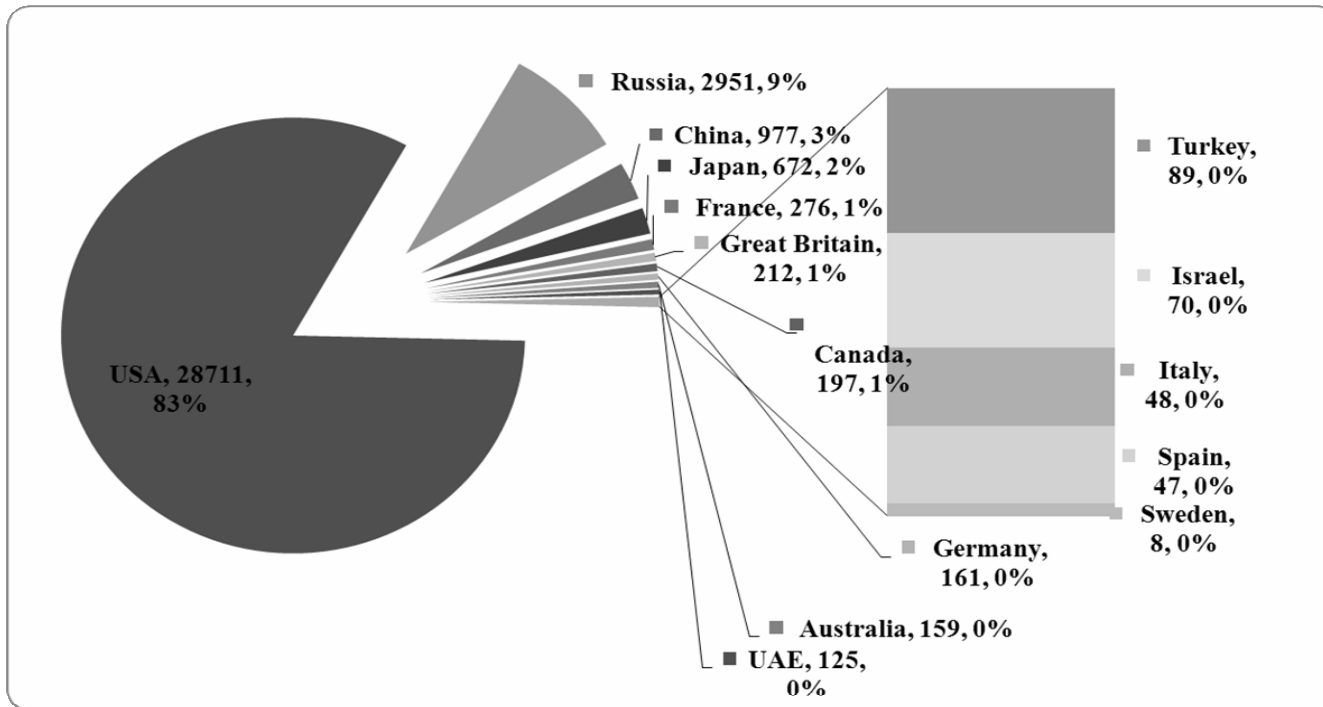


Fig. 6. Military space spending worldwide (\$m. %) Total – \$31 750 m., excluding Russia. The author com-piled this figure based on the information from Government Space Programmes, Euroconsult 2010, <<http://www.euroconsult-ec.com/>>.

## **12. KEY DOCUMENTS OF THE RUSSIAN FEDERATION ON NATIONAL SECURITY, DEFENCE AND ARMS CONTROL (JANUARY-DECEMBER 2011)<sup>238</sup>**

Tamara FARNASOVA

### **LEGISLATIVE ACTS**

**Federal Law no. FZ 1 of 28 January 2011 ‘On the Ratification of the Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms’**

Passed by the SD on 25 January 2011; approved by the FC on 26 January 2011; signed by the President of the Russian Federation on 28 January 2011.

The Treaty was signed in Prague on 8 April 2010 and entered into force on 5 February 2011.

For the text of the Treaty see: *Sobranie zakonodatelstva Rossiiskoy Federatsii* (SZRF) 2011, no.8, Art.1209.

**Federal Law no. FZ 14 of 7 February 2011 ‘On the Ratification of the Agreement between the Government of the Russian Federation and the Government of the Republic of Belarus on Insuring Mutual Deliveries of the Produce of Military, Dual-**

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<sup>238</sup> The unofficial translation. For the details of the specific Federal Laws and Governmental Normative Acts mentioned in this Annex, see: *Sobranie zakonodatelstva Rossiiskoy Federatsii*, SZRF [Statute Book of the Russian Federation] (Moscow, 2011).

**Use and Civilian Assignment in the Period of Increasing Threat of Aggression and in War Time'**

Passed by the SD on 26 January 2011; approved by the FC on 2 February 2011; signed by the President of the Russian Federation on 7 February 2011.

The Agreement was signed on 10 December 2009 and entered into force on 24 February 2011.

For the text of the Agreement see: SZRF 2011, no.18, Art.2519.

**Federal Law no. FZ 31 of 8 March 2011 'On the Ratification of the Agreement between the Government of the Russian Federation and the Cabinet of Ministers of the Ukraine on the Measures for the Protection of Technologies in Connection with Cooperation in the Field of the Study and Use of Outer Space for Peaceful Purposes and of the Creation and Employment of Rocket-Space and Rocket Equipment'**

Passed by the SD on 25 February 2011; approved by the FC on 2 March 2011; signed by the President of the Russian Federation on 8 March 2011.

The Agreement was signed in Moscow on 11 June 2011 and entered into force 21 March 2011.

For the text of the Agreement see: SZRF 2011, no.8, Art.2521.

**Federal Law no. FZ 36 of 9 March 2011 'On the Ratification of the Agreement between the Government of the Russian Federation and the Government of the United States of America on the Transit of Armaments, Military Equipment and Military Personnel through the Territory of the Russian Federation and in Connection with the Participation of the United States of America in the Efforts for Insuring Security, Stabilization and Restoration of the Islamic Republic of Afghanistan'**

Passed by the SD on 25 February 2011; approved by the FC on 2 March 2011; signed by the President of the Russian Federation on 9 March 2011.

The Agreement was signed in Moscow on 6 July 2009 and entered into force on 19 April 2011. For the text of the Agreement see: SZRF 2011, no. 21, Art. 2856.



**Federal Law no. FZ 37 of 20 March 2011 ‘On the Ratification of Protocols I and II to the African Nuclear-Weapon-Free Zone Treaty’**

Passed by the SD on 11 March 2011; approved by the FC on 16 March 2011; signed by the President of the Russian Federation on 20 March 2011.

**Federal Law no. FZ 55 of 5 April 2011 ‘On the Ratification of the Agreement between the Russian Federation and the Republic of Belarus on the Creation and the Functioning of the Joint Communication System and the Regional Groupings of Troops (Forces) of the Republic of Belarus and of the Russian Federation’**

Passed by the SD on 22 March 2011; approved by the FC on 30 March 2011; signed by the President of the Russian Federation on 5 April 2011.

The Agreement was signed in Moscow on 19 January 2008.

**Federal Law no. FZ 96 of 3 May 2011 ‘On the Introduction of Amendments to the Federal Law of 6 March 2006 ‘On Countering Terrorism’**

Passed by the SD on 22 April 2011; approved by the FC on 27 April 2011; signed by the President of the Russian Federation on 3 May 2011.

Art. V of the Law has been supplemented by Part V dealing with additional measures for ensuring security of individuals, society and state. (See: SZRF 2006, no.11, Art. 1146, no.31, Art. 3452).

**Federal Law no. FZ 109 of 3 June 2011 ‘On the Ratification of the Protocol to the Agreement between the Government of the Russian Federation and the Government of the United States of America on the Utilization of Plutonium, Declared as Plutonium No Longer Necessary for Defence Purposes, on its Treatment and on Cooperation, Signed in Washington on 13 April 2010’**

Passed by the SD on 20 May 2011; approved by the FC on 25 May 2011; signed by the President of the Russian Federation on 3 June 2011.

**Federal Law no. FZ 265 of 5 October 2011 ‘On the Ratification of the Agreement between the Russian Federation and the Republic of South Ossetia on the Joint Military Base on the Territory of the Republic of South Ossetia’**

Passed by the SD on 22 September 2011; approved by the FC on 28 September 2011; signed by the President of the Russian Federation on 5 October 2011.

**Federal Law no. FZ 266 of 6 October 2011 ‘On the Ratification of the Agreement between the Russian Federation and the Republic of Abkhazia on the Joint Military Base on the Territory of the Republic of Abkhazia’**

Passed by the SD on 22 September 2011; approved by the FC on 28 September 2011; signed by the President of the Russian Federation on 6 October 2011.

**Federal Law no. FZ 371 of 30 November 2011 ‘On the Federal Budget for 2012 and the Planned Period of 2013 and 2014’**

Passed by the SD on 22 November 2011; approved by the FC on 25 November; signed by the President of the Russian Federation on 30 November 2011.

The document contains basic characteristics of the Federal Budget and the norms of the distribution of revenues among the budgets of the Budget System of the Russian Federation.

For the full text of the Federal Law no.371 see: SZRF 2011, no. 49 (parts I-V), Art.7049.

## **NORMATIVE ACTS**

**Ordinance no. 88 of the Government of the Russian Federation of 17 February 2011 ‘On the Confirmation of the Regulation on the Recognition of an Organization Being Capable of Exploiting Nuclear Facility, Source of Radiation and Storage Facility and of Carrying Out with its Own Means or with the Participation of Other Organizations Activities Involving Stationing, Designing, Exploitation and Decommissioning of Nuclear Facility, Source of Radiation or Storage Facility, as well as**

**the Activities Involving Treatment of Nuclear and Radiation Substances'**

The text of the document is attached to the Ordinance.

**Decree no. 286 of the President of the Russian Federation of 9 March 2011 'On Measures to Implement UN Security Council Resolution 1970 of 26 February 2011'**

The decree lists measures related to the mentioned UNSCR.

**Ordinance no. 366 of the Government of the Russian Federation of 10 March 2011 'On the Conclusion of an Agreement by Exchange of Notes on the Object of the Use of the Assistance of Italy under the Agreement between the Government of the Russian Federation and the Government of the Italian Republic on Assistance in the Destruction of the Stockpiles of Chemical Weapons in the RF and the Additional Protocol to the Agreement between the Government of the Russian Federation and the Italian Republic on Rendering Assistance by Italy in the Destruction of the Stockpiles of Chemical Weapons in the RF'**

**Decree no. 1092 of the President of the Russian Federation of 12 August 2011 'On Measures to Implement UN Security Council Resolution 1973 of 17 March 2011'**

The Decree provides for the introduction of a number of limitations in relation to Libya in connection with the adoption of the mentioned UNSCR.

**Directive no. 571 of the President of the Russian Federation of 25 August 2011 'On the Signing of the Agreements between the Russian Federation and the Organization for the Prohibition of Chemical Weapons Regarding Carrying Out On-site Inspections at the Chemical Weapons Storage Facilities'**

**Directive no. 725 of the President of the Russian Federation of 7 November 2011 'On the Signing of the Agreement between the Russian Federation and the Republic of Belarus on the Control Procedure for the Targeted Use of the Produce of Military Assignment, Supplied under the Treaty between the Russian Federation and the Republic of Belarus on the Devel-**

**opment of Military-Technical Cooperation of 10 December 2009'**

**Directive no. 2209 of the Government of the Russian Federation of 18 November 2011 Regarding the Signing of the Memorandum on Cooperation between the Government of the Russian Federation and the Government of Australia in the Antarctica'**

**Ordinance no. 988 of the Government of the Russian Federation of 29 November 2011 'On the Introduction of Amendments in the Federal Target Programme 'The Destruction of the Stockpiles of Chemical Weapons in the Russian Federation''**

**Decree no. 1661 of the President of the Russian Federation of 17 December 2011 'On the Approval of the List of Dual-Use Goods and Technologies which May Be Used to Develop Armaments and Military Equipment and which are Subject to Export Control'**

The full list of the mentioned items is attached to the Decree.

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