



# NATIONAL INSTITUTE FOR PUBLIC POLICY

## **Russian Nuclear Modernization**

Dr. Mark B. Schneider  
Senior Analyst, National Institute for Public Policy

June 20, 2012

Talking Points from Remarks made to an Air Force Association,  
National Defense Industrial Association and Reserve Officers Association Seminar

The views, opinions, and findings contained in this report are those of the author and should not be construed as National Institute for Public Policy position or policy or that of its sponsors.

© National Institute for Public Policy, 2012



## Russian Nuclear Modernization

- Thank you for inviting me to speak today concerning this very important subject which is often ignored in Washington.
- What I am about to say about Russian nuclear forces is based primarily upon on statements made by Russian government officials with respect to their nuclear force modernization and Russian press reports about these programs. For more than a decade, the U.S.G. rarely has said anything about Russian nuclear capabilities. Some START Treaty data are still relevant but this is a declining asset. Almost no useful data are being released under the New START Treaty. Twenty to thirty year old editions of *Soviet Military Power* still have some relevance vis-a-vis Soviet legacy systems.
- I would also caution that although Russia generally does what it says it will do in the nuclear field, it will usually take more time than what Russian leaders say to implement their programs.
- Russia still maintains legacy Soviet ICBMs (the SS-18, the SS-19 and the SS-25) and SLBMs (the SS-N-18 and the SS-N-23.) and will do so for another decade. Only the SS-N-23 has been modernized and recently the SS-19 has been tested with a new warhead section. The modernized SS-N-23 is called the Sineva and reportedly has more warhead potential and higher accuracy than the Cold War missile. Russia has done life extension on legacy weapons systems, but, significantly, the main thrust of Russian activity is developing and introducing new types of strategic weapons.
- There are two aspects of the Russian modernization program: 1) programs that go back to the 1990s Yeltsin-era and are now being deployed; and 2) a much

more ambitious set of programs announced after the ratification of New START in February 2011.

- The core of the Yeltsin-initiated Russian modernization program included: 1) a single warhead SS-27 ICBM, and later, under Putin, a MIRVed version of the SS-27 that violated the START Treaty; 2) the new Bulava 30 SLBM; 3) at least eight new Borey class submarines to carry the Bulava 30; 4) the KH-102 5,000-km range nuclear cruise missile which reportedly uses stealth technology for Russian bombers; and 5) the production of a Tu-160 bomber every few years in violation of one of Russia's Presidential Nuclear Initiative commitments. These programs are now all operational or about to become operational as is the case with the Bulava 30.
- The accuracy of Russia's description of its Yeltsin-era strategic programs was confirmed in a 2008 joint report issued by the Department of Energy and the Department of Defense.
- Since the ratification of New START in February 2011, Russia has announced three new ICBM programs and a second modernized version of the SS-N-23 Sineva SLBM.
  - The most significant of these is the development and deployment by 2018 of a new heavy ICBM (Makeyev Design Bureau), which will reportedly carry 10 heavy or 15 medium warheads. The new missile is reportedly smaller than the SS-18 but with more throw-weight. Its silos will be upgraded in hardness and it will be defended by missile defenses.
  - In December 2011, a new medium ICBM was announced by Lt-Gen. Sergey Karakayev Commander of the Strategic Missile Forces. He described it as a 100-ton class missile (about SS-19 launch-weight) and

- revealed it had a conventional warhead option. He said it would be operational by 2015.
- The early operational date suggests a simple modification of the SS-19. However, statements by the manufacturer (NPO Mashinostroyeniya) suggest a much more ambitious project with an IOC of 2022. The manufacturer is calling it a heavy ICBM. It could actually be both a medium and heavy ICBM depending upon what definition is used.
  - A new 100-ton ICBM, even if it were to carry the old Soviet-era SS-24 nuclear front section, would have ten warheads. A larger number of warheads are certainly possible. The missile should have the technical potential to carry a variety of heavy, medium and light warheads.
  - In May 2011, Russia announced the successful launch of a new mobile ICBM which made maximum use of existing components. It was revealed that its “warhead,” as distinct from “warheads,” reached the ICBM impact range at Kamchatka in Siberia. Secrecy about this missile was unusual and extreme. The BBC characterized it as a “secret missile.” Russia did not even announce the name or designator of the missile or provide a video or photographs of its launch or launcher.
    - In Russia this type of secrecy is usually linked to arms control compliance issues. The Russians usually brag about their new nuclear weapon systems.
    - Since START is dead and New START has very little in the way of restrictions in it, the compliance issue may involve the INF Treaty. It is the only other relevant nuclear force Treaty.
    - There are a number of conflicting reports about the nature of the new ICBM. These reports range from an SS-27 or an SS-27

derivative, the Bulava 30 or the revival of a Soviet-era small ICBM program. The largest number of press reports say that this new missile is based upon the Bulava 30 SLBM which would make it less capable as an ICBM than the MIRVed version of the SS-27 which is already operational.

- For many years Russia has exhibited interest in heavily MIRVed missiles, not in a new single warhead ICBM. Moreover, a new single warhead ICBM would not be prudent use of research money in light of the fact that they already have the single warhead SS-27 Mod 1.
- This brings up the question of whether the new missile is really a new intermediate range ballistic missile (IRBM) masquerading as an ICBM. Launching a MIRVed IRBM to ICBM range by downloading to a single warhead is an obvious way of circumventing the INF prohibition of 500-5,000-km range ground launched ballistic missiles. All that is necessary is a single test to ICBM range. After that, the missile could be tested with MIRVed warheads.
- A recent Russian press report on the revival of a Soviet-era ICBM program revealed that the Soviets had a program for a 6,000-km range “pseudo ICBM” but did not go ahead with it because of fear about the international reaction. That fear may have gone away.
- For years there has been discussion of developing a new IRBM in Russia. Russian leaders have called the INF Treaty a “Cold War relic.” One Russia general talked about “pragmatic” observance of

the INF Treaty and another about how deploying INF range missiles would solve Russia's national security problems.

- If this new ICBM is a Bulava 30 derivative, a Soviet-era small ICBM revival or a two stage version of the SS-27, which has also been discussed in the Moscow press, it is likely an IRBM masquerading as an ICBM.
- There is increasing concern Russia is violating and circumventing the INF Treaty.
- There are reports that the new Iskander M missile has a real range of 600-700-km, not under 500-km as required by the INF Treaty. If true, this would be a circumvention rather than a violation of the INF Treaty.
- There are about ten reports by well-known Russian journalists and major publications, including four from an official Russia Government news agency, that the Russian R-500 ground-launched cruise missile has a range of 1,000-3,000-km, and hence violates the INF Treaty.
- Like the new ICBM, this missile was also tested in extreme secrecy. Its first test was announced by then-First Deputy Prime Minister Sergei Ivanov who called it a long-range missile. He also stated that ranges of Russia's missiles are "for now within the commitments that Russia has taken upon itself, but I stress: for now." After the first test, Russian officials ceased talking about it. The chief designer of the R-500 received a state award but his name was not announced. It is clear that the Russian government does not want him talking to the press about the R-500.

- There is one press report of a second new INF range ground-launched cruise missile.
  - There is also a press report that nuclear-armed Russian surface-to-air missiles and ABM interceptors have a secondary nuclear ground attack role. One of these, the S-400, is now being deployed to peripheral areas where its deployment makes no sense as an air defense system because its range is far too great. This includes Kaliningrad. Its deployment to these areas does make sense if there is a secondary nuclear ground attack mission.
  - Russia seems to be recreating the pre-INF Treaty threat to Europe and Asia in violation and circumvention of the INF Treaty. The distinction between a violation and circumvention is important legally but from a threat standpoint the distinction is irrelevant.
- In 2011, Russia announced a further modernization of the SS-N-23 Sineva called the Liner or Layner SLBM. The missile is now operational, according to the Russian Navy, and the service lives of legacy submarines are being extended to make the investment useful. Its manufacturer (Makeyev) said it would carry 4 medium warheads or 9-12 small warheads or a combination of both and mentioned another program relating to this missile called the Arbalet. We do not know anything about the so-called Arbalet.
  - Russian Minister of Defense Anatoliy Serdyukov made a passing reference to an ICBM called the Avangard. Again, we don't know what it is. There are a number of press reports that indicate it is a modification of the SS-27 with heavier MIRVing. There is one report it may be a rail mobile ICBM. In December 2011, the commander of the Strategic

Missile Force spoke about the possible revival of a rail mobile ICBM. It would not be constrained by New START.

- In 2011, there were a number of Russian Government announcements of an increase in ICBM production, including a tripling of production by 2013. In 2012, then-Presidential candidate Vladimir Putin said that Russia would produce 400 ICBMs over the next ten years.
- In May 2011, Russian Strategic Missile Force Commander, Lieutenant General Sergey Karakayev affirmed the strategic missile force would be 98% modernized by 2021.
- There are many reports of a planned upgrade to 10 warheads on the MIRVed SS-27 and the Bulava 30 SLBM. For the MIRVed SS-27, I was able to track back the reports to the Russian Defense Ministry.
- There is a report in the Russian press that a new miniature warhead is being developed for the 10-warhead version of the Bulava. This would be necessary to do what the Russian press says they plan to do. It would also require the development of a new, very advanced nuclear warhead and covert nuclear testing.
- Yuri Solomonov, chief designer of the SS-27 and the Bulava 30, says that Russian will introduce new warheads for the SS-27 variants in 2016. He said these warheads will have a MIRV capability without a MIRV dispensing bus.
- Russia is in the early stages of the development of a new stealth bomber which reportedly will carry the 5,000-km range KH-102, a nuclear air-launched cruise missile. The bomber is reportedly going to be operational by 2025 or 2030.
- In December 2011, Strategic Missile Force commander Lieutenant General Sergey Karakayev stated that practically all silo-based and mobile missile



systems in the Strategic Missile Forces are equipped with missile defense penetration aids.

- Russia is now modernizing its Bear and Blackjack heavy bombers. This includes the long-range KH-102 nuclear cruise missile and introduction of precision weapons.
- The New START Treaty will not reduce Russian strategic forces or limit their expansion in any significant way. Russian data published by the State Department indicate that Russia was below the New START limit on deployed warheads and delivery vehicles at the Treaty's entry into force.
- Dozens of START limitations and prohibitions that constrained the qualitative aspects of Russian strategic forces were deleted from New START. The size and power of the Russian ballistic missiles under New START is unlimited. There are significant loopholes that can be exploited. Indeed, Russia has announced a plan to increase the number of deployed nuclear weapons and delivery vehicles from the level that existed at New START's entry into force. During the ratification of New START, Defense Minister Anatoliy Serdyukov stated, "We will meet every parameter established by the treaty before 2028, while the warhead limits will be met by 2018."
- Russia will likely continue to maintain a number of operationally deployed strategic nuclear warheads well above the notional 1,550 warhead limit under New START.
- Russia has announced that it will procure 14 more Tu-160 heavy bombers which may be a response to the New START bomber weapons counting rule which counts a bomber load of nuclear weapons as one weapon.
- Russia is introducing new and improved types of nuclear warheads and apparently is engaged in nuclear testing at very low yields.

- This includes improved strategic nuclear weapons. Strategic missile force generals say the SS-27 has a higher yield warhead than the SS-25 and the Atomic Energy Ministry says it was developed during the Russian period. I have seen four separate press reports that the Russians have introduced 100-kg/100-kt nuclear warheads. Pavel Podvig says that the new warhead is both lighter and has a higher yield than Soviet-era weapons. These reports are consistent with what would be necessary to put six warheads on the SS-27 and Bulava 30 with their declared throw-weight under the expired START Treaty, which unlike New START, made these data public.
- Russia is introducing advanced low collateral damage and precision low yield nuclear weapons. Russian press reports indicate that the SS-N-23 Sineva and the Bulava 30 carry low sub-kiloton nuclear weapons (50-200 tons yield) as well as high yield options. There is one report that the Sineva also carries a conventional warhead.
- Former Russian Atomic Energy Minister the late Viktor Mikhaylov said Russia was developing an advanced low collateral damage earth penetrator weapon that can penetrate 40 meters into the ground.
- Russia has a massive force of non-strategic nuclear weapons, many which have strategic significance. The Obama administration says Russia probably has a 10-to-1 advantage in tactical nuclear weapons. In November 2011, PDUSD Dr. James Miller said Russia has 2,000-4,000 tactical nuclear weapons; the U.S. Strategic Commission estimated the number at 3,800.
- It is not only the numbers but the diversity of Russian tactical nuclear weapons that is of concern. Russia reportedly has short-range nuclear missiles, nuclear artillery and nuclear landmines, nuclear air defense and missile defense weapons, nuclear

bombs including nuclear depth charges, nuclear anti-ship cruise missiles, nuclear antisubmarine warfare missiles, and nuclear torpedoes.

- Russia has reportedly retained the capability to attack all types of targets with tactical nuclear weapons and they are modernizing them. This includes the new Iskander missile, and the Su-34 fighter bomber and the Yasen class submarine which reportedly carried a 5,000-km nuclear cruise missile as well as the Soviet SS-N-21 nuclear SLCM.
- This year the then-head of the Russian Air Force Colonel General Alexander Zelin stated that the Su-34 would have a strategic nuclear mission and carry a long-range cruise missile. A long-range nuclear cruise missile would turn the Su-34 into a New START accountable heavy bomber. I believe it is very unlikely that Russia will declare the Su-34 to be a heavy bomber if it carries the KH-102 nuclear ALCM. that the Russians will just violate the New START Treaty rather than declare the Su-34 as a heavy bomber, counting it under the Treaty limit and accepting the associated inspections and notifications.
- New START is not going to prevent any Russian nuclear force modernization. It will only be constrained by what Moscow can afford to do. The lack of limitations and degraded verification are made worse by a lack of willingness, particularly in the US State Department, to pursue compliance issues.
- Russia may exploit New START loopholes. For example, air-launched ICBMs, surface ship-launched ICBMs and rail mobile ICBMs would not be prohibited by New START.
- Russia has adopted a nuclear weapons use doctrine that allows for the first use of nuclear weapons in local and regional wars not only in response to WMD attack but also in a conventional war. Putin was directly responsible for this doctrine

when he was National Security Council Secretary in the 1990s and he signed it into law as acting President in 2000.

- Russia calls nuclear weapons first use “de-escalation of a conflict.”  
Additionally, Russia employs various types of nuclear attack threats as a means of intimidating its neighbors.
- Since 2007, there have been about 15 overt Russian nuclear targeting threats from senior officials, including four from Putin.
- Russia routinely threatens forward deployment of nuclear capable Iskander missiles and routinely flies nuclear bombers into NATO air defense identification zones, precipitating a defensive response – again a Putin policy.
- A generation of the Russian military, now being promoted into the senior leadership positions, have heard their leaders talk about the use of nuclear weapons in situations where no Western leader would even consider their use.
- The pattern of Russian nuclear weapons activities is dangerous, particularly when taken in the context of the weakness of Russia’s conventional military forces and the global environment which includes Chinese nuclear force modernization, and nuclear weapons and other WMD proliferation.
- This Russian nuclear force modernization is a stark contrast to the lack of modernization of the US nuclear Triad, deep budget cuts in our defense budget as well as in the budgets of our allies. This raises grave issues for U.S. national security and international global stability.
- Thank you.