

# Russian nuclear weapons capability

The numbers that have changed since last year are highlighted in red

Updated: June 1, 2021

NATO designation	Missile/ bomb	No. of warheads per weapon	No. of warheads	Yield (kt)	Year first deployed	Remarks
<b>Deployed</b>		<b>642</b>	<b>1,600</b>			
<b>Intercontinental ballistic missile (ICBM)</b>		<b>302</b>	<b>796</b>			1)
SS-18 M6 Satan <a href="#">a)</a>	46	6	276	500 or 800	1988	
SS-19 M4 <a href="#">b)</a>	4	1	2	150?	2019	Avangard
SS-25 Sickle <a href="#">c)</a>	19	1	19	800	1988	
SS-27 M1 (silos) <a href="#">d)</a>	60	1	60	800	1997	
SS-27 M1 (mobile) <a href="#">e)</a>	18	1	18	800?	2006	
SS-27 M2 (mobile) <a href="#">f)</a>	135	3	405	100?	2010	
SS-27 M2 (silos) <a href="#">g)</a>	20	3	60	100?	2014	
SS-X-29 (silos) <a href="#">h)</a>	-	10	-	500?	(2022)	
<b>Submarine-launched ballistic missile (SLBM)</b>		<b>160</b>	<b>624</b>			2)
SS-N-18 Stingray <a href="#">i)</a>	16	3	48	50	1978	Carried by the Delta III-class nuclear submarine <a href="#">l)</a>
SS-N-23 Sineva <a href="#">j)</a>	80	4	320	100	2007	Carried by the Delta IV-class nuclear submarine <a href="#">m)</a>
SS-N-32 Bulava <a href="#">k)</a>	64	4	256	100	2014	Carried by the Borey-class nuclear submarine <a href="#">n)</a>
<b>Strategic bomber payloads</b>		<b>180</b>	<b>180</b>			3)
AS-15A Kent A <a href="#">o)</a>		1		200	1984	Carried by the Bear H <a href="#">r)</a>
AS-15B Kent B <a href="#">p)</a>	180	1	180	200	1987	Carried by the Blackjack <a href="#">s)</a>
AS-23B <a href="#">q)</a>		1		?	2019?	Carried by the Blackjack
Nuclear bomb		1				
<b>Reserve / Nondeployed</b>			<b>2,895</b>			4)
<b>Ground-based (ICBM, etc.)</b>			<b>868</b>			
ICBM			393			1)
Ground-based non-strategic nuclear weapons <a href="#">t)</a>			475			5)
<b>Sea-based (SLBM, etc.)</b>			<b>1,127</b>			
SS-N-23			64	100		2)
SS-N-32			128	100		2)
Sea-based non-strategic nuclear weapons <a href="#">u)</a>			935			6)
<b>Air-launched systems (Bombers, etc.)</b>			<b>900</b>			
Missile, nuclear bomb			400			3)
Non-strategic air-launched nuclear weapons <a href="#">v)</a>			500			7)
<b>Retired warheads awaiting dismantlement, etc.</b>			<b>1,760</b>			8)
<b>Total inventory</b>			<b>6,260</b>			

a)

Intercontinental ballistic missile (ICBM) SS-18 M6 Satan	
Russian designation	: P -36 M2 "Воевода" (R-36M2 Voevoda)
Alternate name	RS-20V
NATO designation	: SS-18 Mod.6 Satan
Propulsion	: Two-stage liquid propellant
Launch platform	: Silo
No. of warheads	: Maximum 10 warheads
Yield	: 500kt/800kt per 1 warhead
Specifications	: Length 34.3m, Diameter 3.0m, Weight 211tons
Range	: 11,000km
Circular error probability	: 220m
Where deployed :	: Dombarovsky Air Base : 18 missiles Uzhur Air Base : 28 missiles
Remarks	Voevoda means commander. It appears that Russia has reduced the payload of warheads on this missile to five in order to fulfill the New START Treaty. It is thought that the last test took place on October 30, 2013 during a major exercise of the Russian Strategic Missile Forces, when a missile was launched from the Dombarovsky Air Base and impacted on the Kura Test Range on the Kamchatka Peninsula. They are expected to be retired by 2027. The development plans for the liquid propellant Salmat missiles that will replace them are behind schedule, and they are planned to be deployed in 2022.

【Source】

**Bukharin, Oleg et al. 2004:** "Russian strategic nuclear forces" edited by Pavel Podvig, 2004, MIT Press. p.218

**IHS Jane's 2020:** "RS-20/R-36M/15A14/15A18", IHS Jane's Weapons: Strategic 2020–2021, pp.107–111.

**Kristensen, Hans M. & Korda, Matt 2021:** "Russian nuclear forces, 2021," Bulletin of the Atomic Scientists, 77:2, 90-108, DOI: 10.1080/00963402.2021.1885869 (accessed May 1, 2021)

**Norris, Robert S. & Kristensen, Hans M. 2009:** "U.S. and Soviet/Russian intercontinental ballistic missiles, 1959–2008," Bulletin of the Atomic Scientists, VOL. 65, NO. 1, pp.62–69, <https://doi.org/10.2968/065001008> (accessed May 27, 2019)

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**Podvig, Pavel 2020:** "Strategic Rocket Forces," January 4, 2020. <http://russianforces.org/missiles/> (accessed January 24, 2020)

b)

Intercontinental ballistic missile (ICBM) SS-19 M4	
Russian designation	: Y P -100H YTTX (UR-100NUTTH)
Alternate name	RS-18
NATO designation	: SS-19 Mod.4
Propulsion	: Two-stage liquid propellant
Launch platform	: Silo
No. of warheads	: 1 warhead
Yield	: ?
Specifications	: Length 24.3m, Diameter 2.5m, Weight 106tons
Range	: 10,000km
Circular error probability	: 350-430m
Where deployed	: Dombarovsky Air Base: 4 missiles

Remarks	<p>The missile is a version of the retired SS-19 Mod.3 Stiletto modified to launch the hypersonic glide vehicle Avangard (Авангард). They are deployed in SS18 silos at the Dombarovsky Air Base. Deployment started on December 27, 2019 and as of the end of 2021 there were six, with plans for a total of 12 by the end of 2027.</p> <p>The most recent flight test was conducted on December 26, 2018, successfully hitting a target at the Kura Test Range.</p> <p>: After reaching a sufficient altitude the Avangard reenters the atmosphere and uses aerodynamic force to glide. It completely evades missile defense systems using satellites and sequential data links and communications, and can destroy strategically important facilities. It appears that composite materials able to withstand the high temperatures of hypersonic flight have been developed, but the communications system and precision of the Avangard remain unclear. It can carry a payload of over 150 kilotons of conventional and nuclear warheads, and fly at speeds of up to Mach 20.</p>
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**【Source】**

**Bukharin, Oleg et al. 2004:** "Russian strategic nuclear forces" edited by Pavel Podvig, 2004, MIT Press. p.222.

**Hruby, Jill 2019:** "RUSSIA'S NEW NUCLEAR WEAPON DELIVERY SYSTEMS," November 2019. [https://media.nti.org/documents/NTI-Hruby\\_FINAL.PDF](https://media.nti.org/documents/NTI-Hruby_FINAL.PDF) (accessed November 18, 2019)

**IHS Jane's 2020:** "RS-18A/B/UR-100N/15A30/15A35", IHS Jane's Weapons: Strategic 2020–2021, pp.107–108.

**Kristensen, Hans M. & Korda, Matt 2021:** "Russian nuclear forces, 2021," Bulletin of the Atomic Scientists, 77:2, 90-108, DOI: 10.1080/00963402.2021.1885869

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**Podvig, Pavel 2018-1:** "Avangard hypersonic boost-glide system deployment plans," October 29, 2018. [http://russianforces.org/blog/2018/10/avangard\\_hypersonic\\_boost-glid.shtml](http://russianforces.org/blog/2018/10/avangard_hypersonic_boost-glid.shtml) (accessed May 27, 2019)

**Podvig, Pavel 2018-2:** "Avangard system is tested, said to be fully ready for deployment," December 26, 2018. [http://russianforces.org/blog/2018/12/avangard\\_system\\_is\\_tested\\_said.shtml](http://russianforces.org/blog/2018/12/avangard_system_is_tested_said.shtml) (accessed May 27, 2019)

**Podvig, Pavel 2020:** "Life extension for UR-100NUTTH," January 31, 2020. [http://russianforces.org/blog/2020/01/life\\_extension\\_for\\_ur-100nutth.shtml](http://russianforces.org/blog/2020/01/life_extension_for_ur-100nutth.shtml) (accessed March 17, 2020)

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**Tass 2019:** "First regiment of Avangard hypersonic missile systems goes on combat duty in Russia," December 27, 2019, <https://tass.com/defense/1104297> (accessed May 1, 2021)

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c)

Intercontinental ballistic missile (ICBM) SS-25 Sickle	
Russian designation	: P Т -2ПМ "Тополь" (RT-2PM Topol)
Alternate name	: RS-12M
NATO designation	: SS-25 Sickle
Propulsion	: Three-stage solid-propellant
Launch platform	: Transporter erector launcher
No. of warheads	: 1 warhead
Yield	: 800 kt
Specifications	: Length 21.5m, Diameter 1.8m, Weight 45.1tons
Range	: 10,500km
Circular error probability	: 350-430m
Where deployed	: Barnaul Air base: 18 missiles Vypolzovo Air base: 9 missiles

Remarks	<p>Topol means “poplar”. On October 26, 2017, Russian Strategic Missile Troops carried out a major exercise in which a missile was launched from the northwestern Plesetsk test range, which landed in the Kura test range on Kamchatka. This was thought to be for obtaining data for extending the service life of the missiles. Previously, the test was conducted on October 2, 2016. Currently, replacement by the mobile-launched Yars(SS-27 Mod2) is underway, and the Topol is expected to be retired by 2021.</p> <p>Using RT-2PM Topol, Russia is believed to be developing payload for the 4K51 Rubezh ICBM system. The latest test launch was conducted on December 26, 2017, with a missile launched from Kapustin Yar in southern Russia landing in Sary-Shagan in Kazakhstan. The most recent test was on December 10, 2018, but it ended in failure. The previous test to that on December 26, 2017 was successful.</p>
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【Source】

**Bukharin, Oleg et al. 2004:** "Russian strategic nuclear forces" edited by Pavel Podvig, 2004, MIT Press. p.232.

**IHS Jane's 2020:** "RS-12M Topol", IHS Jane's Weapons: Strategic 2020–2021, pp.103–105.

**Kristensen, Hans M. & Korda, Matt 2021:** "Russian nuclear forces, 2021," Bulletin of the Atomic Scientists, 77:2, 90-108, DOI: 10.1080/00963402.2021.1885869 (accessed May 1, 2021)

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**Podvig, Pavel 2016:** "Launch of Topol from Plesetsk," September 9, 2016. [http://russianforces.org/blog/2016/09/launch\\_of\\_topol\\_from\\_plesetsk.shtml](http://russianforces.org/blog/2016/09/launch_of_topol_from_plesetsk.shtml) (accessed May 29, 2019)

**Podvig, Pavel 2017-1:** "Strategic Rocket Forces," June 20, 2017. <http://russianforces.org/missiles/> (accessed May 27, 2019)

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**Podvig, Pavel 2017-3:** "Launch of Topol from Kapustin Yar," December 26, 2017. [http://russianforces.org/blog/2017/12/launch\\_of\\_topol\\_from\\_kapustin\\_1.shtml](http://russianforces.org/blog/2017/12/launch_of_topol_from_kapustin_1.shtml) (accessed May 29, 2019)

**Podvig, Pavel 2018-1:** "Yars missiles continue to replace Topol," March 29, 2018. [http://russianforces.org/blog/2018/03/yars\\_missiles\\_continue\\_to\\_repl.shtml](http://russianforces.org/blog/2018/03/yars_missiles_continue_to_repl.shtml) (accessed May 28, 2019)

**Podvig, Pavel 2018-2:** "By cancelling RS-26 Russia keeps its options open," April 2, 2018. [http://russianforces.org/blog/2018/04/by\\_cancelling\\_rs-26\\_russia\\_kee.shtml](http://russianforces.org/blog/2018/04/by_cancelling_rs-26_russia_kee.shtml) (accessed May 28, 2019)

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**Podvig, Pavel 2020:** "Strategic Rocket Forces," January 4, 2020. <http://russianforces.org/missiles/> (accessed January 24, 2021)

d)

Intercontinental ballistic missile (ICBM) SS-27 M1 (silo)	
Russian designation	: P T -2PM2 “Тополь-М” (RT-2PM2 Topol M)
Alternate name	: RS-12M1
NATO designation	: SS-27 Mod.1 (Silo)
Propulsion	: Three-stage solid-propellant
Launch platform	: Silo
No. of warheads	: 1 warhead
Yield	: 800 kt
Specifications	: Length 21.5m, Diameter 1.8m, Weight 45.1tons
Range	: 10,500km
Circular error probability	: 350-430m
Where deployed	: Tatishchevo Air Base : 60 missiles
Remarks	<p>Deployment of 60 silo-based Topol M missiles seemed to be completed at Tatishchevo Air Base.</p> <p>The latest test launch was conducted on January 16, 2017. A missile launched from the Plesetsk test range landed at the Kura test range on Kamchatka. It is assumed the objective was to validate ballistic stability and other technical characteristics.</p>

【Source】

**Bukharin, Oleg et al. 2004:** "Russian strategic nuclear forces" edited by Pavel Podvig, 2004, MIT Press. p.233.

**IHS Jane's 2020:** "RS-12M1/2 Topol-M (RT-2PM2)", IHS Jane's Weapons: Strategic 2020–2021, pp.105–107.

**Kristensen, Hans M. & Korda, Matt 2021:** "Russian nuclear forces, 2021," Bulletin of the Atomic Scientists, 77:2, 90-108, DOI: 10.1080/00963402.2021.1885869 (accessed May 1, 2021)

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**Podvig, Pavel 2020:** "Strategic Rocket Forces," January 4, 2020. <http://russianforces.org/missiles/> (accessed January 24, 2020)

e)

Intercontinental ballistic missile (ICBM) SS-27 M1 (mobile)	
Russian designation	: P Т -2ПМ2 “Тополь-М” (RT-2PM2 Topol M)
Alternate name	: RS-12M2
NATO designation	: SS-27 Mod.1 (mobile)
Propulsion	: Three-stage solid-propellant
Launch platform	: Transporter erector launcher
No. of warheads	: 1 warhead
Yield	: 800 kt
Specifications	: Length 21.5m, Diameter 1.8m, Weight 45.1tons
Range	: 10,500km
Circular error probability	: 350-430m
Where deployed	: Teykovo Air base: 18 missiles
Remarks	: Deployment of 18 mobile-launched Topol M missiles has been completed at Teykovo Air Base. The latest test launch was conducted on November 1, 2014. A missile launched from the Plesetsk test range landed at the Kura test range on Kamchatka. It is assumed the objective was to gather relevant data for potential lifetime extensions.

【Source】

**Bukharin, Oleg et al. 2004:** "Russian strategic nuclear forces" edited by Pavel Podvig, 2004, MIT Press. p.233.

**IHS Jane's 2020:** "RS-12M1/2 Topol-M (RT-2PM2)", IHS Jane's Weapons: Strategic 2020–2021, pp.105–107.

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**Podvig, Pavel 2020:** "Strategic Rocket Forces," January 4, 2020. <http://russianforces.org/missiles/> (accessed January 24, 2020)

f)

Intercontinental ballistic missile (ICBM) SS-27 M2 (mobile)	
Russian designation	: Я р с (Yars)
Alternate name	: RS-24
NATO designation	: SS-27 Mod.2 (mobile)
Propulsion	: Three-stage solid-propellant
Launch platform	: Transporter erector launcher
No. of warheads	: Maximum 4 warheads
Yield	: 100 kt per 1 warhead?
Specifications	: Length 20.9m, Diameter 2.0m, Weight 49.0tons
Range	: 10,500km
Circular error probability	: 250m
Where deployed	: Barnaul Air base: 9 missiles Irkutsk Air base: 27 missiles Nizhniy Tagil Air base ; 27 missiles Novosibirsk Air base ; 27 missiles Teykovo Air base ; 18 missiles Yoshkar-Ola Air base ; 27 missiles

Remarks	<p>The mobile-launched Yars is consecutively replacing the SS-25.</p> <p>The latest launch test took place on December 9, 2020. The missile was launched from the Plesetsk Test Range during annual exercises and impacted on the Kura Test Range. The test before was conducted in June 2018.</p> <p>Elsewhere the rail-mobile Yars (Barguzin) ICBM system that had been under development appears to have been either cancelled or suspended.</p>
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**【Source】**

**IHS Jane's 2020:** "RS-24 Yars", IHS Jane's Weapons: Strategic 2020–2021, pp.111–112.

**Kristensen, Hans M. 2012:** "Trimming Nuclear Excess-Options for Further Reductions of U.S. and Russian Nuclear Forces," Federation of American Scientists, Special Report No. 5, December, 2012. <https://fas.org/programs/ssp/nukes/publications1/TrimmingNuclearExcess.pdf> (accessed May 29, 2019)

**Kristensen, Hans M. & Korda, Matt 2021:** "Russian nuclear forces, 2021," Bulletin of the Atomic Scientists, 77:2, 90-108, DOI: 10.1080/00963402.2021.1885869 (accessed May 1, 2021)

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**TASS 2018:** "Avangard Hypersonic Missiles Replace Rubezh ICBMs in Russia's Armament Plan through 2027," March 22, 2018. <http://tass.com/defense/995628> (accessed May 18, 2019)

g)

Intercontinental ballistic missile (ICBM) SS-27 M2 (silo)	
Russian designation	: Я р с (Yars)
Alternate name	: RS-24
NATO designation	: SS-27 Mod.2 (Silo)
Propulsion	: Three-stage solid-propellant
Launch platform	: Silo
No. of warheads	: Maximum 4 warheads
Yield	: 100 kt per 1 warhead?
Specifications	: Length 20.9m, Diameter 2.0m, Weight 49.0tons
Range	: 10,500km
Circular error probability	: 250m
Where deployed	: Kozelsk Air base: 20 missiles
Remarks	<p>Fixed silo types have been deployed by replacing the SS-19s at Kozelsk Air Base from 2014.</p> <p>The latest test launch was conducted on September 12, 2017. A missile launched from the Plesetsk test range landed at the Kura test range on Kamchatka. While the objective was likely to validate ballistic stability and other technical characteristics, some reports claim that the test was also about "minibus" warheads targeting the U.S. missile defense.</p>

**【Source】**

**IHS Jane's 2020:** "RS-24 Yars", IHS Jane's Weapons: Strategic 2020–2021, pp.111–112.

**Kristensen, Hans M. 2012:** "Trimming Nuclear Excess-Options for Further Reductions of U.S. and Russian Nuclear Forces," Federation of American Scientists, Special Report No. 5, December, 2012. <https://fas.org/programs/ssp/nukes/publications1/TrimmingNuclearExcess.pdf> (accessed May 26, 2018)

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h)

Intercontinental ballistic missile (ICBM) SS-X-29	
Russian designation	: С а р м а т (Sarmat)
Alternate name	: RS-28
NATO designation	: SS-X-29 Satan 2
Propulsion	: Two-stage liquid propellant
Launch platform	: Silo
No. of warheads	: Maximum 10 warheads or more?
Yield	: 500kt per 1 warhead?
Specifications	: Length 36.3m, Diameter 3.0m, Weight 200tons
Range	: 11,000km
Circular error probability	: ?
Where deployed	: Dombarovsky Air base Uzhur Air base
Remarks	<p>The missile is under development as a replacement for the S-18. Development is far behind schedule due to ejection test problems. It is currently thought that flight tests will start in 2021 and deployment in 2022. A total of 46 missiles will be deployed between the Dombarovsky Air Base and the Uzhur Air Base.</p> <p>In October 2016, the Russian developer of Sarmat released the photographs. Sarmat's test launches commenced on December 27, 2017, and a second test, conducted either on March 28 or 29, 2018, had some public disclosure.</p> <p>The name Sarmat derives from the Sarmatians, a group of nomadic tribes, who flourished from around the fifth century BC to the fourth century AD.</p> <p>The Sarmat, which has been made lighter due to the development of new materials, can carry 10 to 16 nuclear warheads, and its aim appears to be reducing the interception rate of missile defense systems by firing large quantities of nuclear weapons into target nations. In addition, while simultaneously making detection and interception difficult by shortening its boost phases, its range has been greatly increased, enabling it to attack via the North or South poles. In particular, if the Sarmat flew over the South Pole it could attack from the direction of the Bay of Mexico where the missile defense system is weak.</p> <p>Moreover, there are plans to load multiple Avangard vehicles on the Sarmat.</p>

**【Source】**

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i)

Submarine-launched ballistic missile (SLBM) SS-N-18 Stingray	
Russian designation	: P -29P (R-29R)
Alternate name	: RSM-50
NATO designation	: SS-N-18 Mod.1 Stingray
Propulsion	: Two-stage liquid propellant
Launch platform	: Project 667BDR Strategic Nuclear Submarine (NATO designation: Delta III)
No. of warheads	: Maximum 3 warheads
Yield	: 50kt per 1 warhead
Specifications	: Length 14.1m, Diameter 1.8m, Weight 35.3tons
Range	: 6,500km
Circular error probability	: 900m
Remarks	: The latest test launch was conducted on October 17, 2019. Russian Strategic Missile Troops carried out a major exercise in which a Delta III nuclear submarine launched a Stingray missile from the Sea of Okhotsk, which landed in the Chizha test range on the Kanin Peninsula.

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j)

Submarine-launched ballistic missile (SLBM) SS-N-23 Sineva	
Russian designation	: P -29РМУ Синева (R-29RMU Sineva)
Alternate name	: RSM-54
NATO designation	: SS-N-23 Mod.1
Propulsion	: Three-stage liquid propellant
Launch platform	: Project 667BDRM Strategic Nuclear Submarine (NATO designation: Delta IV)
No. of warheads	: Maximum 10 warheads
Yield	: 50kt per 1 warhead
Specifications	: Length 14.8m, Diameter 1.9m, Weight 40.3tons
Range	: 8,500km
Circular error probability	: 500m



Remarks	Sineva means “blue”. In the latest test during an annual exercise on December 6, 2020, the K-18 Karelia Delta IV class nuclear submarine launched a Sineva missile from the Barents Sea and impacted on the Kura Test Range on the Kamchatka Peninsula.
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【Source】

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k)

Submarine-launched ballistic missile (SLBM) SS-N-32 Bulava	
Russian designation	: P -30 Булава (R-30 Bulava)
Alternate name	: RSM-56
NATO designation	: SS-N-32
Propulsion	: Three-stage solid-propellant
Launch platform	: 955 class submarine (Borey/Borey A)
No. of warheads	: Maximum 10 warheads (6 warheads appeared to be deployed)
Specifications	: Length 12.1m, Diameter 2.0m, Weight 36.8tons
Range	: 8,300km
Circular error probability	: 300m
Remarks	Bulava means “cudgel”. The latest test was on December 12, 2020, when four of the missiles were launched from the Vladimir Monomakh, the third Borei Class submarine, targeting the Chizha Test Range on the Kanin Peninsula. The missiles used in test were the 35th to 38th. The previous test took place on September 29, 2019. It is believed that the missile can carry up to six nuclear warheads, but this number has been reduced to four in order to comply with the new START Treaty.

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l)

Strategic nuclear submarine Delta III	
Russian designation	: 667БДР "Кальмар" (667BDR Kalmar)
NATO designation	: Delta III class
No. of tubes	: 16
SLBM	: Stingray (RSM-50)
Specifications	: Length 155m, Width 12m, Displacement underwater 13,000tons

Submerged speed	:	25knot (km/h 46km)
Where deployed	:	Pacific Fleet base (Vilyuchinsk)
Submarines in service	:	K-44 Ryazan
Remarks	:	Deployment began in 1976, and 14 submarines were commissioned. Over the past few years three of the Delta III class submarines have been in commission, whilst it is planned that they will be replaced by Borei class submarines. Today the K-44 Ryazan, returned to service from long-term overhaul in February 2017, remains the only active submarine of this class.

**【Source】**

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m)

Strategic nuclear submarine Delta IV		
Russian designation	:	667БДРМ "Дельфин" (667BDRM Delfin)
NATO designation	:	Delta IV
Propulsion	:	Three-stage solid-propellant
No. of tubes	:	16
SLBM	:	Sineva (RSM-54)
Specifications	:	Length 167m, Width 12m, Displacement underwater 13,600tons
Submerged speed	:	22-23knot (km/h 41-43km)
Where deployed	:	Northern Fleet base (Gadzhievo)
Submarines in service	:	K-51 Verkhoturie K-84 Ekaterinburg K-114 Tula K-117 Bryansk K-18 Karelia
Remarks	:	K-407 Novomoskovsk Deployments began in 1985, with seven constructed to date but the six listed above in service today. Four and five are regularly kept in operational deployment, with the remainder in overhaul. As of June 1, 2019, only K-117 Bryansk is believed to be in overhaul. Since 2013, the 667BDRM Kal'mar has participated in each annual maneuver and test-fired missiles. Seven Borei-A submarines will be constructed as the successors to the 667BDRM submarines. It is planned that the first submarine to be replaced will be the K-84 Ekaterinburg, which is scheduled to be retired in 2022.

**【Source】**

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n)

Strategic nuclear submarine Borey	
Russian designation	: Б о р е й (Borey)
NATO designation	Borey
No. of tubes	16
SLBM	: Bulava (RSM-56)
Specifications	Length 170m, Width 13.5m, Displacement underwater 19,400tons
Submerged speed	: 25knot (km/h 46km)
Where deployed	: Northern Fleet base (Gadzhievo) (1st and 3rd vessels) Pacific Fleet base (Vilyuchinsk) (2nd vessel)
Submarines in service	: K-535 Yuriy Dolgorukiy K-550 Aleksandr Nevskiy K-551 Vladimir Monomakh K-549 Knyaz Vladimir
Remarks	Three 955 vessels (Borey 1) are being built as the successor to the 667BDR type (Delta III). The first vessel, the Yuri Dolgorukiy was commissioned in January 2013, and the second, the Alexander Nevsky in December 2013. The third vessel, the Vladimir Monomakh was also commissioned in December 2014.  In order to replace the 667BDRM (Delta IV class) submarines, seven 955A class (Borei-A/II) submarines with a new design including a horizontal rudder and sonar will or are being built. The first, the Knyaz Vladimir, went into commission on June 12, 2020; the second, the Knyaz Oleg, was launched in June 2020 and is currently on test voyages. The third, the Generalissimus Suvorov, the fourth, the Imperator Aleksandr III, and the fifth, the Knyaz Pozharsky are all under construction.

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o)

#### Cruise missile AS-15A Kent A deployed on Strategic Bomber

Russian designation	:	X-55 (Kh-55)
NATO designation	:	AS-15A Kent A
Carried by	:	Tupolev Tu-95MS (NATO designation: Bear H)
Yield	:	200 kt
Specifications	:	Length 6.04m, Diameter 0.51m, Weight 1.2tons
Range	:	2,500km
Remarks	:	The Tu-95MS6 carries six missiles internally, and the 95MS16 can carry a further 10 missiles underneath the wings. The sea-launched variant of these missiles is the non-strategic nuclear RK-55 (SS-N-21).

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#### Cruise missile AS-15B Kent B deployed on Strategic Bomber

Russian designation	:	X-55CM (Kh-55SM)
NATO designation	:	AS-15B Kent B
Carried by	:	Tupolev Tu-160 (NATO designation: Blackjack)
Yield	:	200 kt
Specifications	:	Length 6.04m, Diameter 0.77m, Weight 1.5tons
Range	:	3,000km
Remarks	:	This is a missile that extends the range of the AS-15A Kent A (Kh-55). The Tu-160 carries 12 missiles.

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#### Cruise missile AS-23B deployed on Strategic bomber

Russian designation	:	X-102 (Kh-102)
NATO designation	:	AS-23B
Carried by	:	Tupolev Tu-95MSM (NATO designation: Bear H)
Yield	:	250kt
Specifications	:	Length 7.45m, Diameter 0.51m, Weight 2.4tons
Range	:	4,5000km
Remarks	:	An extremely stealthy long-range cruise missile developed as the successor to the AS-15A Kent A (Kh-55). The conventional warhead AS-23A (Kh-101) was first fired on November 17, 2015 from the Blackjack (Tu-160) bomber and from the Bear-H (Tu-95MSM) bomber when Russia participated in the bombing of Syria. Furthermore, in the major annual exercises conducted by the Russian Strategic Missile Forces, they were fired from a Tu-160 (Blackjack) bomber and Tu-95MSM (Bear-H) bomber.

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Strategic bomber Bear H (Bear H6/H16/H Mod)	
Russian designation	: Т у п о л е в Ту-95MC6/MC16/MCM (Tupolev) Tu-95 MS6/MS16/MSM)
NATO designation	: Bear H6/H16/H Mod
Nuclear weapon	: The Bear H6/H16 bombers are mounted with AS-15A Kent A (Kh-55) missiles; the Bear H Mod bombers with AS-23B (Kh-102) missiles, and the Bear H6 (Tu-95MS6) bombers with six internally mounted AS-15A Kent A (Kh-55) missiles. Furthermore, the Bear H16 (95MA16) bombers are mounted with a further 10 underwing missiles, amounting to 16 in all (though this load decreases flying range). The Bear H Mod (Tu-95MSM) has six internally mounted AS-23B (Kh-102) missiles, and eight underwing missiles, 14 in total.
Specifications	: Length 49.5m, Span 51.1m (Propeller aircraft)
Max. speed	: 830km/h
Range	: 10,500km
Where deployed	: Ukrainka Air base and Engels Air base
Remarks	: The Russian Strategic Missile Forces fire cruise missiles from Bear H (Tupolev Tu-95MS) bombers during their major annual exercises. Russia is currently developing new models to replace its strategic bombers. In the meanwhile it is also attempting to modernize the Bear H16 (Tupolev Tu-95MA16) bomber. November 2015 saw the start of the delivery to the Russian Air Force of the Bear H Mod (Tu-95MSM), which has improved radar functions and incorporates a satellite-based target-acquisition system/navigation system. On August 22, 2020, pilot flights began of an enhanced Bear H Mod (Tu-95MSM) with the latest electronic equipment, an improved engine and new model propellers. Flight precision and reliability have been vastly improved, service life extended, and they are expected to be in service until at least 2040.

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Strategic bomber Blackjack	
Russian designation	: Т у п о л е в Ту-160 'Белый лебедь' (Tupolev Tu-160/M/M2)
NATO designation	: Blackjack
Nuclear weapons	12 air-launched AS-15B Kent B (Kh-55SM) cruise missiles : 12 air launched AS-23B (Kh-102) cruise missiles gravity bombs.
Specifications	Length 54.1m, Span 55.7-35.6m
Max. speed	: 2,200km/h (supersonic bomber)
Range	: 14,000km
Where deployed	: Ukrainka Air base
Remarks	The Russian nickname is the White Swan (Belyy Lebed). In the mid-2000s, Russia began to modernize about a dozen Tu-160s in its bomber fleet. Phase one modifications upgraded the bomber's fire power by enabling it to carry two new long-range cruise missiles, the Kh-101 (conventional warhead) and the Kh-102 (nuclear warhead). Currently, phase two modifications are under way, swapping most of its electronics and improving its radionavigation system, and due for completion by 2019. The modified Tu-160M had its first test flight in November 2014. : From 2023, Russia is set to produce the Tu-160M2, a variant equivalent to the Tu-160M modification. This series is reported to number 50 planes at a minimum. This first flight of Tu-160M2 is projected for late 2021. PSC Tupolev is set to manufacture Russia's proposed next-generation stealth strategic bomber: Perspektivnyi Aviatsionnyi Kompleks Dal'ney Aviatsii (PAK DA) or "prospective aviation complex for long-range aviation." This first flight is projected for 2021. PAK DAs are scheduled to undergo fully-fledged production in 2028. This new product is expected to replace Tu-160s, Tu-95MSs and Tu-22M3s (intermediate range bomber).

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**Ground-based non-strategic nuclear weapons**

Russian designation(NATO designation)	Yield(kt)	Range(km)	Launch platform
Anti-ballistic missile			

53T6 (Gazelle)	10	80	Silo
<b>Air defense missile</b>			
S-300 (SA-20)	?	~150	Transporter erector launcher
S-400 (SA-21)	?	~400	Transporter erector launcher
<b>Coastal defense missile</b>			
Redut (SSC-1B)	350	500	Transporter erector launcher
Bastion-P (SSC-5)	10	350	Transporter erector launcher
<b>Short-range ballistic missile</b>			
Tochka (SS-21)	10-100	120	Transporter erector launcher
Iskander-M (SS-26)	10-100	350	Transporter erector launcher
<b>Cruise missile</b>			
9M729 (SSC-8)	10-100	~2,500	Transporter erector launcher

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**Sea-based non-strategic nuclear weapons**

Russian designation(NATO designation)	Yield(kt)	Range(km)	Launch platform
<b>Anti-ship cruise missile</b>			
P-120 Malakhit (SS-N-9)	200	110	Corvette
P-500 Bazalt (SS-N-12)	350	550	Cruiser
P-700 Granit (SS-N-19)	500	625	Nuclear submarine、 Aircraft carrier、 Cruiser
Kh-41 Moskit (SS-N-22)	200	250	Destroyer、 Corvette
<b>Land-attack cruise missile</b>			
RK-55 Granat (SS-N-21)	200	2,400	Nuclear submarine
Kalibr (SS-N-30A)	?	1,500-2,500	Nuclear submarine
<b>Anti-submarine rocket</b>			
RPK-2 Vyuga (SS-N-15)	200	35	Nuclear submarine、 Cruiser、 Destroyer, etc.
RPK-6 Vodopad (SS-N-16)	200	50	Nuclear submarine、 Cruiser、 Destroyer, etc.
<b>Torpedo</b>			Nuclear submarine
<b>Depth charge</b>			Aircraft carrier、 Cruiser、 Destroyer, etc.

**【Source】**

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**Air-carried non-strategic nuclear weapons**

Russian designation(NATO designation)	Yield(kt)	Range(km)	Launch platform
<b>Cruise missile</b>			
Kh-22N (AS-4)	200	310	Tu-22M
Kh-32	100-500	600-1,000	Tu-22M
<b>Ballistic missile</b>			
Kh-15 (AS-16)	350	150	Medium-range bomber
Kh-47M2 (Kinzhal)	?	1,500-2,000	MiG-31K
<b>Gravity bomb</b>			Medium-range bomber, Fighter-bomber

**【Source】**

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