

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующих+З апасных
LAND BALLISTIC MISSILES БАЛЛИСТИЧЕСКИЕ РАКЕТЫ НАЗЕМНОГО БАЗИРОВАНИЯ							
UNITED STATES							
ICBM МЕЖКОНТИНЕНТАЛЬНЫЕ БАЛЛИСТИЧЕСКИЕ РАКЕТЫ							
LGM-30G	Minute man III					13,000	
	MK-12A	180	1979	MIRV, Single	3 x 335		540
	MK-21 SERV	220	2006	Single	1 x 300		430
TOTAL 17(SIPRI) 17(BULL)		400					970
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
ATACMS Block I		Some	1991	Single	1 x 560kg payload	165	Some
ATACMS Block IA		Some	1998	Single	1 x 160kg payload	300	Some
ATACMS Block II		Some	2002	Single	1 x 270kg payload	140	Some
TOTAL 08(WIKI)		Some					Some
RUSSIA							
ICBM МЕЖКОНТИНЕНТАЛЬНЫЕ БАЛЛИСТИЧЕСКИЕ РАКЕТЫ							
SS-18 M6	RS-20V	46	1992	MIRV	10 x 500-800	11,000-	460

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Satan						15,000	
SS-19 M3 Stiletto	RS-18 (UR-100NU TTH)	20	1980	MIRV	6 x 400	10,000	120
SS-25 Sickle	RS-12M (Topol)	90	1985	Single	1 x 800	10,500	90
SS-27 Mod. 1 (mobile)	RS-12M1 (Topol-M)	18	2006	Single	1 x (800)?	10,500	18
SS-27 Mod. 1 (silo)	RS-12M2 (Topol-M)	60	1997	Single	1 x 800	10,500	60
SS-27 Mod. 2 (mobile)	RS-24 (Yars)	70	2010	MIRV	4 x (100)?	10,500	280
SS-27 Mod. 2 (silo)	RS-24 (Yars)	12	2014	MIRV	4 x (100)?	10,500	48
SS-27 Mod. 3 (mobile)	RS-26 (Yars-M)	-	(2016)	MIRV	3 x (100)?		-
SS-27 Mod. ? (rail)	Barguzin	-	(2019)	MIRV	4 x (100)?		-
“heavy” ICBM 2 (silo)	Sarmat	-	(2020)	MIRV	10 x (100)?		-
TOTAL 17(SIPRI) 17(BULL)		316					1,076
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
..(SSC-8 GLCM)		8	2016		1 x ..	(2,500)	8

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NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+Зapasные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ООУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГоловоК x MOЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГоловоК Действующие+Зapasных
TOTAL 17(SIPRI)		8					8
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
SS-1c Mod 1	Scud-B	Some	1964	Single	1 x 1,000kg payload	300	Some
SS-1c Mod 2	Scud-B	Some	1964	Single	1 x 950kg payload	240	Some
SS-21 Scarab	Tochka	56	1981	Single	(1 x 10)	120	56
SS-26 Stone	Iskander-M	84	2005	Single	(1 x 10)	500	84
TOTAL 17(SIPRI) 16(SIPRI) 16(BULL) 08(WIKI)		140					140
CHINA							
ICBM МЕЖКОНТИНЕНТАЛЬНЫЕ БАЛЛИСТИЧЕСКИЕ РАКЕТЫ							
CSS-4 Mod 2	DF-5A	10	1981	Single	1 x 4,000-5,000	12,000	10
CSS-4 Mod 3	DF-5B	10	2015	MIRV	3 x 200-300	12,000	30
CSS-10 Mod 1	DF-31	8	2006			>7,000	8
				Single	1 x 200-300		
				MIRV	3 x 50-100		
CSS-10 Mod 2	DF-31A	25	2007			>11,200	25
				Single	1 x 200-300		
				MIRV	3-5 x 20-150		
	DF-41	0					

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TOTAL 17(SIPRI) 16(BULL)		~53					~73
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
CSS-3	DF-4	10	1980	Single	1 x 3,300	5,500	10
CSS-5	DF-21, DF-21A	80	1991	Single	1 x 200-300	2,100	80
TOTAL 17(SIPRI) 17(BULL)		~90					~90
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
CSS-6	DF-15/M-9	~100	1994	Single	1 x 50-350	600	Some
CSS-7	DF-11/M-11	32	1999	Single	1 x 0.5	300	Some
CSS-8	DF-7	30	?	Single	1 x 500kg payload	150	?
TOTAL 16(SIPRI) 16(BULL) 04(IISS)		~162					Some
INDIA							
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
Agni II		16	2011	Single	1 x 12	>2,000	16
Agni III		8	(2014)	Single	1 x 12	>3,200	8
Agni IV		0	(2018)		1 x 12	>3,500	0

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NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
Agni V		0	(2020)	Single	1 x 12	>5,200	0
TOTAL 17(SIPRI) 17(BULL) 12(JDW) 11(WIKI)		~24					~24
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
Agni I		20	2007	Single	1 x 12	>700	20
Prithvi II		24	2003	Single	1 x 12	250	24
TOTAL 17(SIPRI) 17(BULL)		~44					~44
PAKISTAN							
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
Ghauri-1	Haft 5	24	2003	Single	1 x 12	1,250	24
Shaheen-2	Haft 6	12	2014	Single	1 x 12	1,500	12
Shaheen-3	Haft 6	0	(2018)	Single	1 x 12	2,750	0
TOTAL 17(SIPRI) 16(BULL) 15(WIKI)		~36					~36
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
	Haft 1	Some	1989	Single	1 x 500kg payload	70	Some
	Haft 1A	Some	1995	Single	1 x 500kg payload	100	Some
	Haft 1B	Some	2001	Single	1 x 500kg	100	Some

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					payload		
Abdali	Haft 2	(10)	(2015)	Single	1 x 12	180	(10)
Ghaznavi	Haft 3	16	2004	Single	1 x 12	290	16
Shaheen-1	Haft 4	16	2003	Single	1 x 12	750	16
Shaheen-1A	Haft4	0	(2017)	Single	1 x 12	900	0
Nasr	Haft 9	24	(2013)	Single	1 x 12	60	24
TOTAL 17(SIPRI) 16(BULL) 15(WIKI)		~68					~68
<b>ISRAEL</b>							
ICBM МЕЖКОНТИНЕНТАЛЬНЫЕ БАЛЛИСТИЧЕСКИЕ РАКЕТЫ							
Jericho 3		2-5	2008				Some
				Single	1 x 1,000-1,300	11,500	
				MIRV	6 x 100	11,500	
Jericho 2B		Some	1990	Single	1 x 500kg	>7,800	Some
TOTAL 17(SIPRI) 14(BULL) 12(JDW) 11(WIKI) Note [1], [2], [3], [4], [5]		Some					Some
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
Jericho 2		50	1990				50
				Single	1 x 750-1,000kg payload	1,500-1,800	

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TOTAL 17(SIPRI) 16(ISS) 14(BULL) 11(WIKI)		50					50
<b>NORTH KOREA</b>							
IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ							
No-Dong-1		<50	1997	Single	1 x 1,000-1,250kg payload	1,250	Some
Musudan		Some	(>2011)	Single	~1,000kg payload	3,500-4,000	Some
Hwasong-13		Some				>5,500	Some
Taepodong-2		Some				>5,500	Some
TOTAL 17(SIPRI) 15(ISS) 05(BULL) 11(WIKI)		0(6)					Up to 20
SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ							
Scud-ER (extended-range) / Hwasong-7		Some		Single	1 x 500-1,000kg payload	1,000	Some
TOTAL 17(SIPRI) 05(BULL)		Some					Some
SLBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ, БАЗИРУЮЩИЕСЯ НА ПОДВОДНЫХ ЛОДКАХ							

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<b>UNITED STATES</b>							
UGM-133	Trident II D-5	264					
	MK-4		1992	MIRV	4 x 100	12,000	321
	MK-4A		2008	MIRV	4 x 100	>7,400	1,215
	MK-5		1990	MIRV	4 x 475	12,000	384
TOTAL 17(SIPRI) 17(BULL)		264					1,920
<b>UNITED KINGDOM</b>							
UGM-135	Trident II D-5	48	1994	MIRV	1-3 x 100	12,000	215
TOTAL 17(SIPRI) 11(BULL)		48					215
<b>RUSSIA</b>							
SS-N-18 M1 Stingray	RSM-50	32	1978	MIRV	3 x 50	6,500	96
SS-N-23 M1	RSM-54 (Sineva)	96	2007	MIRV	4 x 100	9,000	384
SS-N-32	RSM-56 (Bulava)	48	2014	MIRV	6 x 100	>8,050	288
TOTAL 17(SIPRI) 17(BULL)		176					768
<b>FRANCE</b>							
M-51.1		48	2010	MIRV	4-6 x 100	8,000-	240



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						10,000	
M-51.2		0	(2016)	MIRV	4-6 x TNO	>6,000	0
M-51.3		0			(6 x 150)	(>6,000)	0
TOTAL 17(SIPRI) 08(BULL)		48					240
<b>CHINA</b>							
CSS-NX-14	JL-2	48	(2016)			>7,000	48
				Single	1 x 200-300		
				MIRV	3-4 x 90		
TOTAL 17(SIPRI) 16(BULL)		48					48
<b>INDIA</b>							
	K-4	0	?	Single	1 x 1,000kg payload	~3,000	0
Sagarika / Arihant	K-15	(4)	(2018)	Single	1 x 12	700	(12)
Dhanush	NA	2	(2013)	Single	1 x 12	400	2
TOTAL 17(SIPRI) 17(BULL)		(14)					(14)
<b>AIRCRAFT БОМБАРДИРОВЩИКИ</b>							
<b>UNITED STATES</b>							
<b>STRATEGIC СТРАТЕГИЧЕСКИЕ</b>							
B-52H	Stratofortress	87/44	1961	ALCM	5-150	16,000	528
				ACM	5-150		

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B-2A	Spirit	20/16	1994	Bombs B61-7, -11, B83-1	ACM 5-150	11,000	282
TOTAL 17(SIPRI) 17(BULL)		107/60					810
SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ							
F-15E	Strike Eagle	Some	1988	Bomb B61-3, B61-4, B61-10	5 x 0.3-170	3,840	100
F-16C/D	Fighting Falcon	Some	1987	Bomb B61-3, B61-4, B61-10	2 x 0.3-170	3,200	100
F-16MLU	Fighting Falcon	Some	1985	Bomb B61-3, B61-4, B61-10	2 x 0.3-170	3,200	60
PA-200	Tornado	Some	1983	Bomb B61-3, B61-4, B61-10	2 x 0.3-170	2,400	40
TOTAL 17(SIPRI) 17(BULL) 09(WIKI) 04(IISS)		Some					300
RUSSIA							
STRATEGIC СТРАТЕГИЧЕСКИЕ							
Bear H6	Tu-95 MS6	14/25	1981	ALCM, Bombs	6 x AS-15A ALCMs, bombs	6,500-10,500	84
Bear H16	Tu-95 MS16	25/30	1981	ALCM, Bombs	16 x AS-15A ALCMs, bombs	6,500-10,500	400

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Blackjack	Tu-160	11/13	1987	ALCM, SRAM, bombs	12 x AS-15B ALCMs or AS-16 SRAMs, bombs	10,500-13,200	132
TOTAL 17(SIPRI) 17(BULL)		50/68					616
SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ							
Land-based bombers Бомбардировщики наземного базирования							
Tu-22M-3	Backfire-C	120	1974	ASM, bombs	3 x ASM, bombs	4,800-7,000	300
Su-24M/M2	Fencer-D	200	1974	Bombs	2 x bombs	2,100-3,000	200
Su-34	Fullback	68	2006	Bombs	2 x bombs		68
TOTAL 17(SIPRI) 17(BULL)		390					~570
Naval bombers, submarines, surface ships Военно-морские бомбардировщики, подводные лодки, надводные корабли							
TOTAL 17(SIPRI) 17(BULL)		Some					~760
FRANCE							
LAND-BASED НАЗЕМНОГО БАЗИРОВАНИЯ							
Mirage 2000N		20	1988	ASMP	1 x 300	2,750	20
Rafale F3		20	2010-2011	ASMP	1 x 300	2,000	20
TOTAL		~40					~40

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ООУ ЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
17(SIPRI) 08(BULL)							
<b>CARRIER-BASED БАЗИРУЮЩИЕСЯ НА АВИАНОСЦАХ</b>							
Rafale MK3		10	2010-2011	ASMP	1 x 300	2,000	10
TOTAL 17(SIPRI) 08(BULL)		~10					~10
<b>CHINA</b>							
<b>STRATEGIC СТРАТЕГИЧЕСКИЕ</b>							
H-6	B-6	(20)	1965	Bomb	1 x 3,000kg payload	3,100	(20)
Fighters		?	1972-	Bomb	1 x bomb		?
TOTAL 17(SIPRI) 16(BULL)		>~20					>~20
<b>ISRAEL</b>							
<b>SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ</b>							
F-4E-2000	Kurnass	Some	1989	Bomb	1 x 8,480kg payload	2,200	Some
F-16A Fighting Falcon	Netz/Hawk	88	1980	Bomb	1 x 5,400kg payload	2,500	Some
F-16B Fighting Falcon	Netz/Hawk	16		Bomb	1 x 5,400kg payload	2,500	Some
F-16C Fighting	Barak / Lightni	75		Bomb	1 x 5,400kg payload	2,500	Some

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ООУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
Falcon	ng						
F-16D Fighting falcon	Barak / Thunde rbolt	46		Bomb	1 x 5,400kg payload	2,500	Some
F-16I Fighting Falcon	Sufa / Storm	101		Bomb	1 x 5,400kg payload	2,500	Some
F-15I Strike Eagle	Ra'am / Thunde r	25	1997	Bomb	1 x 10,400kg payload	2,500	Some
F-35I Lightning II		(20)+(55)	(2015)-(2030)	Bomb	5,895kg payload	2,200	(Some)
TOTAL 17(SIPRI) 14(BULL) 15(WIKI) 12(JDW)		351+(20)+(55)					30
<b>INDIA</b>							
SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ							
Jaguar IS/IB	Shamsher	16	1981	Bomb	1 x bomb	1,600	16
Mirage 2000H	Vajra	32	1985	Bomb	1 x bomb	1,850	32
TOTAL 17(SIPRI) 17(BULL)		~48					~48
<b>PAKISTAN</b>							
SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ							
F-16A/B	Fightin g Falcon	24	1998	Bomb/Babur LACM	1 x bomb	1,600	24
Mirage III/V		12	1998	Bomb or Ra'ad ALCM	1 x 4,000kg payload	2,100	12

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+Зapasные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+Зapasных
TOTAL 17(SIPRI) 16(BULL)		~36					~36
<b>NORTH KOREA</b>							
SUB-STRATEGIC ПОЛУСТРАТЕГИЧЕСКИЕ							
H-5	Il-28	(80)	1950	Bomb	1 x 3,000kg payload	2,100	Some
TOTAL 17(SIPRI) 05(BULL)		(80)					Some
SLCM КРЫЛАТЫЕ РАКЕТЫ, ЗАПУСКАЕМЫЕ С ПОДВОДНЫХ ЛОДОК							
<b>UNITED STATES</b>							
Tomahawk	TLAM-N	325	1984	Single	1 x 5-150	2,500	(0)
TOTAL 16(SIPRI) 16(BULL)		325					(0)
<b>RUSSIA</b>							
SS-N-9	Siren	Some	1972	Single	1 x 200	110	Some
SS-N-12	Sandbox	Some	1959-1960	Single	1 x 350	550	Some
SS-N-19	Shipwreck	Some	1980	Single	1 x 500	550	Some
SS-N-21	Sampson	Some	1984	Single	1 x 200	2,400	Some
SS-N-22	Sunburn	Some	1980	Single	1 x 320kg payload	120	Some
SS-N-30	Kalibr	Some	2012	Single	1 x 450kg	2,500	Some

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+Запасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующих+Запасных
					payload		
TOTAL 15(WIKI) 15(JDW) 11(SIPRI) 10(BULL)		Some					~280
<b>ISRAEL</b>							
Turbo-Popeye 3		Some	2000	Single	1 x 200kg payload	1,500	Some
TOTAL 17(SIPRI) 14(BULL) 04(IISS)		Some					Some
ALCM КРЫЛАТЫЕ РАКЕТЫ, ЗАПУСКАЕМЫЕ С САМОЛЕТОВ							
<b>UNITED STATES</b>							
AGM-868		1,140	1982/1991	Single	1 x 900-1,400kg payload	2,500	Some
AGM-129		460	1990	Single	1 x 5-200	3,500	Some
TOTAL 11(SIPRI) 08(BULL)		1,600					Some
<b>RUSSIA</b>							
AS-4	Kh-24 Kitchen	Some	1964	Single	1 x 1,000	310	Some
AS-15A	Kh-55 Kent	Some	1971	Single	1 x 200-250	2,500	Some
AS-15B	Kh-55SM	Some	1986	Single	1 x 200-250	3,000	Some

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
	Kent						
AS-16	Kh-15 Kickback	Some	1980	Single	1 x 350	150	Some
TOTAL 11(SIPRI) 08(BULL)		Some					Some
<b>FRANCE</b>							
ASMP		Some	1985	Single	1 x 300	250	Some
TOTAL 11(SIPRI) 08(BULL)		Some					Some
<b>CHINA</b>							
DH-10	CJ-10	150-350	2007	Single	1 x ?	>1,500	Some
DH-20?	CJ-20	?	(2014)	?	1 x ?	>1,500	Some
TOTAL 16(SIPRI) 16(BULL)		150-350					Some
<b>PAKISTAN</b>							
Babur	Haft-7	~8	(2014)	Single	1 x 12	700	~8
Ra'ad	Haft-8	0	(>2017)	Single	1 x 12	350	0
TOTAL 17(SIPRI) 16(BULL) 15(WIKI)		~8					~8
GLCM КРЫЛЯТЫЕ РАКЕТЫ НАЗЕМНОГО БАЗИРОВАНИЯ							
<b>INDIA</b>							



**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ОРУЖИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
Nirbhay		?	?	Single	1 x 250-450kg payload	>700	?
15(SIPRI) 15(BULL)							
MISSILE AND AIR DEFENSE SYSTEMS СИСТЕМЫ ПРОТИВОРАКЕТНОЙ И ПРОТИВОВОЗДУШНОЙ ОБОРОНЫ							
RUSSIA							
STRATEGIC DEFENSIVE SYSTEMS СИСТЕМЫ СТРАТЕГИЧЕСКОЙ ОБОРОНЫ							
53T6	SH-08 Gazelle	68	1986	Single	1 x 10	30	68
S-300 and S-400	SA-10/20 Grumble, and SA-21 Growler	800	1980 and 1992	Single	1 x low yield	5-150	290
SSC-1B Sepal	Redut	30	1973	Single	1 x 350	500	15
TOTAL 17(SIPRI) 17(BULL)		900					(~370)
UNITED STATES							
STRATEGIC DEFENSIVE SYSTEMS СИСТЕМЫ СТРАТЕГИЧЕСКОЙ ОБОРОНЫ							
LAND-BASED НАЗЕМНОГО БАЗИРОВАНИЯ							
Fort Greely (Alaska)		26	2004				0

**Table 2.8 - Operational Nuclear Delivery Systems, 2016-2017**

**Таблица 2.8 – Действующие системы доставки ядерного оружия, 2016-2017**

NAME/DESIGNATION НАЗВАНИЕ	AKA ТАКЖЕ ИЗВЕСТНО КАК	NUMBER OF SYSTEMS Active+Spares ЧИСЛО СИСТЕМ Действующие+З апасные	YEAR FIRST DEPLOYED ГОД ВСТУПЛЕНИЯ НА ВООРУЖЕНИЕ	WARHEAD TYPE ТИП БОЕГОЛОВКИ	NUMBER OF WARHEADS x YIELD (kilotons) ЧИСЛО БОЕГОЛОВОК x МОЩНОСТЬ ЗАРЯДА (килотонн)	RANGE (km) ДАЛЬНОСТЬ (км)	TOTAL NUMBER OF WARHEADS Active+Spares ОБЩЕЕ ЧИСЛО БОЕГОЛОВОК Действующие+З апасных
Fort Greely (Alaska)		(14)	(2017)				(0)
Vandenberg (California)		4	2004				0
TOTAL ground-based interceptors		30+(14)					0
SEA-BASED МОРСКОГО БАЗИРОВАНИЯ							
Aegis BMD cruisers		5					0
Aegis BMD destroyers		25					0
TOTAL Aegis BMD ships		30(80-97)					0
15(IISS) 14(WIKI) 08(SIPRI)							
SUB-STRATEGIC DEFENSIVE SYSTEMS СИСТЕМЫ ПОЛУСТРАТЕГИЧЕСКОЙ ОБОРОНЫ							
PAC-3 missiles		546					0
TOTAL 08(SIPRI)		546					0

ACM advanced cruise missile

AKA also known as

ALCM air-launched cruise missile

ASM air-to-surface missile

MIRV multiple independently targetable re-entry vehicles  
ICBM intercontinental ballistic missile  
IRBM intermediate-range ballistic missile  
SRBM short-range ballistic missile  
SLBM submarine-launched ballistic missile  
SLCM submarine-launched cruise missile  
LACM land-attack cruise missile  
GBI ground-based interceptors  
BMD ballistic missile defense  
PAC-3 Patriot advanced capability-3

SOURCES: SIPRI, BULL, WIKI, IISS, JDW

Notes.

- 1) According to an official report which was submitted to the American congress in 2004, it may be that with a payload of 1,000 kg the Jericho 3 gives Israel nuclear strike capabilities within the entire Middle East, Africa, Europe, Asia and almost all parts of North America, as well as within large parts of South America and North Oceania.
- 2) Henry A. Kissinger (16 July 1969), "Israeli Nuclear Program," Memorandum for the President (The White House), Retrieved 2009-07-26
- 3) Proliferation of Weapons of Mass Destruction: Assessing the Risks, U.S. Congress Office of Technology Assessment, August 1993, OTA-ISC-559, Retrieved 2008-12-09
- 4) Missile Survey: Ballistic and Cruise Missiles of Foreign Countries, by Andrew Feikert, Congressional Research Service, Updated March 5, 2004
- 5) Study on a Possible Israeli Strike on Iran's Nuclear Development Facilities, by Abdullah Toukan, Center for Strategic and International Studies, March 14, 2009

**Table 2.9 – Operational Nuclear Warheads, 2016-2017, Strategic**

**Таблица 2.9 – Действующие ядерные боеголовки, 2016-2017, Стратегические**

RANK РАНГ	COUNTRY СТРАНА	ICBM МЕЖКОНТИНЕНТАЛЬНЫЕ БАЛЛИСТИЧЕСКИЕ РАКЕТЫ	IRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ СРЕДНЕГО РАДИУСА ДЕЙСТВИЯ	SLBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ, ЗАПУСКАЕМЫЕ С ПОДВОДНЫХ ЛОДОК	ALCM / BOMBS КРЫЛЯТЫЕ РАКЕТЫ, ЗАПУСКАЕМЫЕ С САМОЛЕТОВ / БОМБЫ	TOTAL ВСЕГО
1	Russia	1,076	8	768	616	2,468
2	U.S.	970		1,920	810	3,700
3	France			240	50	290
4	China	73	90	48	20	231
5	U.K.			215		215
6	Israel	2-5	50			52-55
7	India		24	14		38
8	Pakistan		36			36
9	N. Korea		20			20

ALCM air-launched cruise missile

ICBM intercontinental ballistic missile

IRBM intermediate-range ballistic missile

SLBM submarine-launched ballistic missile

SOURCES: SIPRI, BULL, IISS, JDW

**Table 2.10 – Operational Nuclear Warheads, 2016-2017, Sub-Strategic**

**Таблица 2.10 – Действующие ядерные боеголовки, 2016-2017, Полустратегические**

RANK РАНГ	COUNTRY СТРАНА	SRBM БАЛЛИСТИЧЕСКИЕ РАКЕТЫ МАЛОГО РАДИУСА ДЕЙСТВИЯ	SLCM, NAVY WEAPONS КРЫЛАТЫЕ РАКЕТЫ, ЗАПУСКАЕМЫЕ С ПОДВОДНЫХ ЛОДОК, ВОЕННО-МОРСКОЕ ОРУЖИЕ	ABM, AIR / COASTAL DEFENSE ПРОТИВОРАКЕТНАЯ, ПРОТИВОВоздушная / БЕРЕГОВАЯ ОБОРОНА	AIRCRAFT STRIKE УДАРНЫЕ БОМБАРДИРОВЩИКИ	TOTAL ВСЕГО
1	Russia		760	370		1,130
2	U.S.				300	300
3	Pakistan	68	12		36	116
4	India	44			48	92
5	China	Some	48		Some	>48
6	Israel	Some	Some		30	>30
7	N. Korea				Some	Some
8	France					Some
9	U.K.					Some

SLCM sea-launched cruise missile

SRBM short-range ballistic missile

SOURCES: SIPRI, BULL, IISS, JDW

**Table 2.11 – Operational Nuclear Warheads, 2016-2017, Total Strategic and Sub-Strategic**

**Таблица 2.11 – Действующие ядерные боеголовки, 2016-2017, Всего стратегических и полустратегических**

RA NK PA HT	COUNTRY СТРАНА	STOCKPILE ЗАПАСЫ			DELIVERABLE В СТОЮ			
		16(BULL)	17(SIPRI)	See [1], [2], [3]	16(BULL)	17(SIPRI)	15(IISS)	10(JDW)
1	Russia	~7,300	7,000		~4,500	4,300	3,648	
2	U.S.	~6,970	6,800		~4,670	4,000	2,038	
3	Israel		80	Up to 400		80	80	100-300
4	France		300		300	290	280	
5	China	~260	270		~260	270	Up to 250	
6	U.K.	225	215		160	215	120	
7	Pakistan		130-140			130-140	Up to 130	
8	India	~118	120-130		~106	120-130	Up to 120	
9	N. Korea		10-20		6-8	10-20	Up to 20	

Notes:

- 1) “Background Information, 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons,” United Nations, Retrieved 2006-07-02.
- 2) Brower, Kenneth S., “A Propensity for Conflict: Potential Scenarios and Outcomes of War in the Middle East,” Jane’s Intelligence Review, Special Report no. 14 (February 1997), p. 14-15.
- 3) “Nuclear Weapons: Who Has What at a Glance,” Arms Control Association, Retrieved 2007-05-30.
- 4) The Bulletin of the Atomic Scientists puts the Israeli nuclear stockpile at 60-80 but notes that it is believed that Israel has produced nuclear material enough for 115-190 warheads.
- 5) In 1986, Mordechai Vanunu, a former technician at Dimona, revealed to the media some evidence of Israel’s nuclear program. Israeli agents abducted him from Italy and transported him to Israel. An Israeli court then tried him in secret on charges of treason and espionage, and sentences him to 18 years imprisonment. At the time of Vanunu’s arrest, *The Times* reported that Israel had material for approximately 20 hydrogen bombs and 200 fission bombs. If we take this information at face value, by now Israel should have material for considerably more nuclear bombs and that seems to corroborate the opinion of the sources from Notes [1], [2], [3] that Israel now may have up to 400 nuclear weapons.
- 6) Vanunu’s information in October 1986 said that based on a reactor operating at 150 megawatts Israel produces 40 kg of plutonium per year. Israel possesses a 200 kg warhead, containing 6 kg of plutonium (Farr, Warner D. *The Third Temple’s Holy of Holies: Israel’s Nuclear Weapons*, USAF Counterproliferation Center, September 1999, Retrieved 2007-07-03). During 31 years after 1986 until 2017, Israel could have produced  $31 \times 40 = 1,240$  kg of plutonium; divided by 6, it gives us 206 warheads; plus 220 warheads, which, according to Vanunu, Israel already had in 1986, we receive a possible number of Israel’s warheads now at 426.
- 7) The substantial discrepancy over data about Israel (between the Bulletin of the Atomic Scientists and the

Stockholm International Peace Research Institute on one side and the International Institute for Strategic Studies, Jane's Defense Weekly, and sources from the notes [1], [2], [3] on the other side) may be explained by the following:

7.1) "Israel's nuclear weapons are not believed to be fully operational under normal circumstances" (Bulletin of the Atomic Scientists, article "Nuclear Notebook: Worldwide deployment of nuclear weapons, 2009").

7.2) As Zbigniew Brzezinski stated on Book TV in 2009, Israel had acquired a second-strike capability.

7.3) The opinion of Brzezinski is supported by other less prominent sources stating that Israel's nuclear weapons can now be launched from land, sea and air (Douglas Frantz, Israel Adds Fuel to Nuclear Dispute, Officials confirm that the nation can now launch atomic weapons from land, sea and air, Los Angeles Times, Sunday, October 12, 2003). This gives Israel a second strike option even if much of the country is destroyed (David Eberhart, Samson Option: Israel's Plan to Prevent Mass Destruction Attacks, NewsMax.Com, October 16, 2001).

7.4) The second strike strategy may mean that at any given time some of Israel's nuclear weapons are in storage.

**Table 2.12 – States Possessing, Pursuing Or Capable Of Acquiring Weapons Of Mass Destruction, As Well As Those Which Used To Have Or Used To Pursue Them, 2016-2017**

**Таблица 2.12 – Государства, обладающие или способные к созданию оружия массового поражения, а также те, которые обладали или были способны к их созданию в прошлом, 2016-2017**

STATE ГОСУДАРСТВО	NUCLEAR ENERGY ЯДЕРНАЯ ЭНЕРГИЯ	URANIUM ENRICHMENT ОБОГАЩЕНИЕ УРАНА	PLUTONIUM PRODUCTION ПРОИЗВОДСТВО ПЛУТОНИЯ	NUCLEAR WEAPONS ЯДЕРНОЕ ОРУЖИЕ	CHEMICAL WEAPONS ХИМИЧЕСКОЕ ОРУЖИЕ	BIOLOGICAL WEAPONS БИОЛОГИЧЕСКОЕ ОРУЖИЕ	MISSILE TECHNOLOGY РАКЕТНАЯ ТЕХНОЛОГИЯ
Algeria				Used to pursue			
Argentina	Possessing		Possessing	Capable			Pursuing
Armenia	Possessing		Possessing				
Australia				Capable	Capable	Capable	Capable
Belarus				Capable			
Belgium	Possessing		Possessing				
Brazil	Possessing	Pursuing	Possessing	Capable			Possessing
Bulgaria	Possessing		Possessing			Capable	
Burma					Pursuing		
Canada	Possessing		Possessing				
Chile					Capable		
China	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing
Cuba						Capable	
Czechia	Possessing		Possessing				
Ethiopia					Used to pursue		
Egypt					Possessing	Possessing	Pursuing
Finland	Possessing		Possessing				
France	Possessing	Possessing	Possessing	Possessing	Possessing	Capable	Possessing
Germany	Possessing	Possessing	Possessing	Capable	Capable	Capable	Capable



**Table 2.12 – States Possessing, Pursuing Or Capable Of Acquiring Weapons Of Mass Destruction, As Well As Those Which Used To Have Or Used To Pursue Them, 2016-2017**

**Таблица 2.12 – Государства, обладающие или способные к созданию оружия массового поражения, а также те, которые обладали или были способны к их созданию в прошлом, 2016-2017**

STATE ГОСУДАРСТВО	NUCLEAR ENERGY ЯДЕРНАЯ ЭНЕРГИЯ	URANIUM ENRICHMENT ОБОГАЩЕНИЕ УРАНА	PLUTONIUM PRODUCTION ПРОИЗВОДСТВО ПЛУТОНИЯ	NUCLEAR WEAPONS ЯДЕРНОЕ ОРУЖИЕ	CHEMICAL WEAPONS ХИМИЧЕСКОЕ ОРУЖИЕ	BIOLOGICAL WEAPONS БИОЛОГИЧЕСКОЕ ОРУЖИЕ	MISSILE TECHNOLOGY РАКЕТНАЯ ТЕХНОЛОГИЯ
Hungary	Possessing		Possessing				
India	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing
Indonesia					Pursuing		
Iran	Possessing	Possessing	Pursuing	Used to pursue	Possessing	Possessing	Pursuing
Iraq			Used to have	Used to pursue	Used to have	Used to have	Used to pursue
Israel			Possessing	Possessing	Possessing	Possessing	Possessing
Italy			Possessing				
Japan	Possessing	Possessing	Possessing	Capable	Capable	Capable	Possessing
Kazakhstan			Possessing	Capable			
Laos					Used to pursue	Used to pursue	
Libya				Used to pursue	Used to have	Used to have	
Lithuania	Possessing		Possessing				
Mexico	Possessing		Possessing				
Netherlands	Possessing	Possessing	Possessing				
North Korea	Possessing		Possessing	Possessing	Possessing	Possessing	Possessing
Pakistan	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing
Romania	Possessing		Possessing				
Russia	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing

**Table 2.12 – States Possessing, Pursuing Or Capable Of Acquiring Weapons Of Mass Destruction, As Well As Those Which Used To Have Or Used To Pursue Them, 2016-2017**

**Таблица 2.12 – Государства, обладающие или способные к созданию оружия массового поражения, а также те, которые обладали или были способны к их созданию в прошлом, 2016-2017**

STATE ГОСУДАРСТВО	NUCLEAR ENERGY ЯДЕРНАЯ ЭНЕРГИЯ	URANIUM ENRICHMENT ОБОГАЩЕНИЕ УРАНА	PLUTONIUM PRODUCTION ПРОИЗВОДСТВО ПЛУТОНИЯ	NUCLEAR WEAPONS ЯДЕРНОЕ ОРУЖИЕ	CHEMICAL WEAPONS ХИМИЧЕСКОЕ ОРУЖИЕ	BIOLOGICAL WEAPONS БИОЛОГИЧЕСКОЕ ОРУЖИЕ	MISSILE TECHNOLOGY РАКЕТНАЯ ТЕХНОЛОГИЯ
	ng			ng			
Saudi Arabia				Pursuing	Pursuing	Pursuing	Pursuing
Serbia				Pursuing	Capable		
Slovakia	Possessing		Possessing				
Slovenia	Possessing		Possessing				
South Africa	Possessing		Possessing	Capable	Capable	Capable	Capable
South Korea	Possessing		Possessing		Capable	Capable	Possessing
Spain	Possessing		Possessing				
Sudan					Used to pursue		
Sweden	Possessing		Possessing				
Switzerland	Possessing		Possessing				
Syria					Pursuing	Pursuing	Pursuing
Taiwan	Possessing		Possessing		Possessing	Possessing	Possessing
Thailand					Pursuing		
Ukraine	Possessing		Possessing	Capable			
Vietnam					Pursuing	Pursuing	
United Kingdom	Possessing	Possessing	Possessing	Possessing	Capable	Capable	Possessing
United States	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing	Possessing

SOURCES: BULL, SIPRI, EST, E, CIA, WIKI

**Table 2.13 - Global Stocks Of Highly Enriched Uranium (HEU), 2016****Таблица 2.13 – Мировые запасы высокообогащенного урана, 2016**

STATE ГОСУДАРСТВО	STOCKPILE (TONNES) ЗАПАСЫ (ТОНН)
Argentina	0.001-0.01
Australia	0.001-0.01
Belarus	0.1-1
Belgium	0.1-1
Canada	1-10
China	18 ± 4
France	30 ± 6
Germany	0.1-1
Ghana	~0.001
India	3.6 ± 1.2
Indonesia	~0.001
Iran	0.001-0.01
Israel	0.3
Italy	0.1-1
Jamaica	~0.001
Japan	1-10
Kazakhstan	1-10
Netherlands	0.1-1
Nigeria	~0.001
North Korea	0.01-0.1
Norway	0.001-0.01
Pakistan	3.3 ± 0.4
Poland	0.1-1
Russia	679 ± 120
South Africa	0.1-1
Switzerland	0.001-0.01
Syria	~0.001
United Kingdom	21.2
United States	567.2
Uzbekistan	0.01-0.1
TOTAL	~1340

## Notes.

- 1) Most of highly-enriched material is 90-93% enriched uranium-235, which is typically considered as weapon-grade. Important exceptions are noted. Blending down (i.e. reducing the concentration of U-235) of excess Russian and U.S. weapon-grade HEU up to the end of 2015 has been taken into account.
- 2) The revised estimate for China is based on new information suggesting that China's Heping gaseous diffusion plant operated from 1970 to 1987 to produce HEU, and not as previously assumed from 1975 to 1987.
- 3) France declared 4.6 tonnes of civilian HEU to the International Atomic Energy Agency (IAEA) as of the end of 2015; it is assumed here to be weapon-grade, 93% HEU, even though some of the material is in irradiated form. The uncertainty in the estimate applies only to the military stockpile of 26 tonnes and does not apply to the declared stock of 4.6 tonnes. A recent analysis offers grounds for a significantly lower estimate of the stockpile of weapon-grade HEU (as large as  $10 \pm 2$  tonnes or as low as  $6 \pm 2$  tonnes), however, based on evidence that the Pierrelatte enrichment plant may have had both a much shorter effective period of operation and a lower weapon-grade HEU production capacity than previously assumed.
- 4) It is believed that India is producing HEU (enriched to 30-45%) for use as naval reactor fuel. The estimate is

for HEU enriched to 30%.

- 5) Israel may have acquired 300 kg of weapon-grade HEU from the USA in or before 1965.
- 6) For Russia the material in discharged naval cores is not included in the current stock since the enrichment of uranium in these cores is believed to be less than 20 percent U-235.
- 7) The United Kingdom declared a stockpile of 21.9 tonnes of HEU as of March 31, 2012, the average enrichment of which was not given. The United Kingdom declared a stock of 1.4 tonnes of civilian HEU to the IAEA as of the end of 2015.
- 8) The amount of the United States HEU is given in actual tonnes, not 93% enriched equivalent. In 2016, the United States has declared that, as of September 30, 2013 its HEU inventory was 585.6 tonnes, of which 499.4 tonnes was declared to be for “national security or non-national security programs including nuclear weapons, naval propulsion, nuclear energy, and science”. The remaining 86.2 tonnes was composed of 41.6 tonnes “available for potential down-blend to low enriched uranium or, if not possible, disposal as low-level waste”, and 44.6 tonnes in spent reactor fuel. Of 186 tonnes of HEU declared excess and to be blended down, 150 tonnes had been blended down and another 1 tonne shipped for blending down as of the end of December 2015.
- 9) The 2015 IAEA Annual Report lists 189 significant quantities of HEU under comprehensive safeguards in non-nuclear weapon states as of the end of 2015. In order to reflect the uncertainty in the enrichment levels of this material, mostly in research reactor fuel, a total of 15 tonnes of HEU is assumed. About 10 tonnes of this is in Kazakhstan and has been irradiated; it was initially slightly higher than 20%-enriched fuel. It is possible this material is no longer HEU.

SOURCES: SIPRI, BULL, CIA, WIKI

**Table 2.14 - Global Stocks Of Separated Plutonium, 2016****Таблица 2.14 – Мировые запасы обогащенного плутония, 2016**

STATE ГОСУДАРСТВО	MILITARY STOCKS (TONNES) ВОЕННЫЕ ЗАПАСЫ (ТОНН)	CIVILIAN STOCKS (TONNES) ГРАЖДАНСКИЕ ЗАПАСЫ (ТОНН)
Argentina (2015)	-	17.6
Armenia (2015)	-	2.1
Belgium (2015)	-	40.9
Brazil (2015)	-	5.9
Bulgaria (2015)	-	8.8
Canada (2015)	-	213
China	1.8 ± 0.8	32.5
Czechia (2015)	-	16.8
Finland (2015)	-	17.6
France	6 ± 1.0	354.4
Germany	-	115.1
Hungary (2015)	-	10.8
India	0.59 ± 0.2	34.8
Israel	0.88 ± 0.13	-
Italy (2015)	-	<0.4
Japan	-	171.8
Kazakhstan (2015)	-	3.0
Lithuania (2015)	-	12.3
Mexico (2015)	-	5.2
Netherlands (2015)	-	1.4-1.7
North Korea	0.03	-
Pakistan	0.22 ± 0.09	2.17
Romania (2015)	-	10.4
Russia	128 ± 8	199.2
Slovakia (2015)	-	14.3
South Africa (2015)	-	9.46
South Korea (2015)	-	97.9
Spain (2015)	-	44.4
Sweden (2015)	-	54.4
Switzerland (2015)	-	18.0
Taiwan (2015)	-	32.4
Ukraine (2015)	-	50.6
United Kingdom	3.2	156.3
United States	87.6	629
TOTALS	~230	~2,388

Notes.

- 1) Some countries own civilian plutonium that is stored overseas, mostly in France and the United Kingdom, but do not submit IAEA declaration, including Australia, Belgium and the Netherlands. The data is for the end of 2015.
- 2) The amount for Germany may be an overestimate since Germany apparently reports plutonium as being in unirradiated mixed oxide (MOX) fuel even if the fuel has started being irradiated in a reactor.
- 3) As part of the 2005 Indian-U.S. Civil Nuclear Cooperation Initiative, India has included in the military sector much of the plutonium separated from its spent power-reactor fuel. While it is labelled civilian here since it is intended for breeder reactor fuel, this plutonium was not placed under safeguards in the 'India-specific'

safeguards agreement signed by the Indian government and the IAEA on February 2, 2009. New estimates of the efficiency of India's reprocessing plants are much lower than previously assumed. The estimate is for the end of 2015.

- 4) Israel is believed to still be operating the Dimona plutonium production reactor but may be using it primarily for tritium production (tritium is an important component in nuclear weapons; it is used to enhance the efficiency and yield of fission bombs and the fission stages of hydrogen bombs in a process known as "boosting" as well as in external neutron initiators for such weapons). The estimate is for the end of 2015.
- 5) North Korea reportedly declared plutonium production of 31 kg in June 2008; carried out nuclear tests in 2006 and 2009; and resumed production in 2009, adding 8-10 kg.
- 6) As of the end of 2014, Pakistan was operating 4 plutonium production reactors at its Khushab site, but since one of these began operating sometime in 2013 and the other possibly in 2014 it is assumed their spent fuel had not been reprocessed by the end of 2015.
- 7) Russia does not include its plutonium declared as excess in its IAEA statement. The military stockpile includes 6 tonnes of weapon-grade plutonium that is not part of the material declared excess nor declared as civilian and was produced between 1994 and 2010.
- 8) The United Kingdom declared 103.3 tonnes of civilian plutonium (not including 23 tonnes of foreign-owned plutonium in the United Kingdom) as of the end of 2015. This includes 4.4 tonnes of military plutonium declared excess and placed under Euroatom safeguards and designated for IAEA safeguarding.
- 9) In 2012, the USA declared a government-owned plutonium inventory of 95.4 tonnes as of the 30 Sep. 2009. In its 2014 IAEA statement, the USA declared 49 tonnes of unirradiated plutonium (both separated and in MOX) as excess for military purposes as of the end of 2014, with additional 4.5 tonnes sent for disposal as waste. Not included in the 87.6 tonnes listed in the table are 7.7 tonnes of plutonium remaining in spent fuel that has been declared as excess to national security needs.
- 10) Data for other states is estimated by subtracting plutonium declared as 'held elsewhere' from plutonium declared as 'belongs to others' in IAEA statements.

SOURCES: SIPRI, BULL, CIA, WIKI