

# The New START Treaty (Historic and strategic perspectives)

Alexei G. Arbatov

# What are strategic weapons?

- Ballistic land-based and submarine-based missiles and bombers with cruise missiles and bombs
- Enormous destructive power (one warhead's yield = 4-10 WWII explosives)
- Intercontinental range (over 5500-8000 km)
- Short flight time (15-30 min missiles, 7-8 hours bombers)
- Most expensive in development and construction ( a few \$ billions for each bomber or submarine)
- Large weapons by physical size
- Dedicated delivery systems (missiles and bombers) and specific launchers (silos, mobile launchers, submarines)

# Topol ICBM (SS-25)



# Tu 160 heavy bomber (Blackjack)



# U.S. Ohio Class Submarine with Trident SLBMs



# Nuclear build up

- At its peak in 1984-1985 aggregate world stockpile reached some 70,000 nuclear warheads (above 90% in US and Soviet arsenals)
- At its peak in 1974 the cumulative destructive power achieved 25,000 megatons (in TNT equivalent)

This was 1,600,000 times the power of  
Hiroshima bomb of August 6, 1945



# Present

- Presently - around 25,400 warheads – 9,500 deployed and 15,900 non-deployed (in storages)
- Of those - 2,200 US and 2,600 Russian strategic warheads
- Cumulative power of nuclear arsenals around 2,300 Mt



This is 150,000 times the power of  
Nagasaki bomb of August 9, 1945



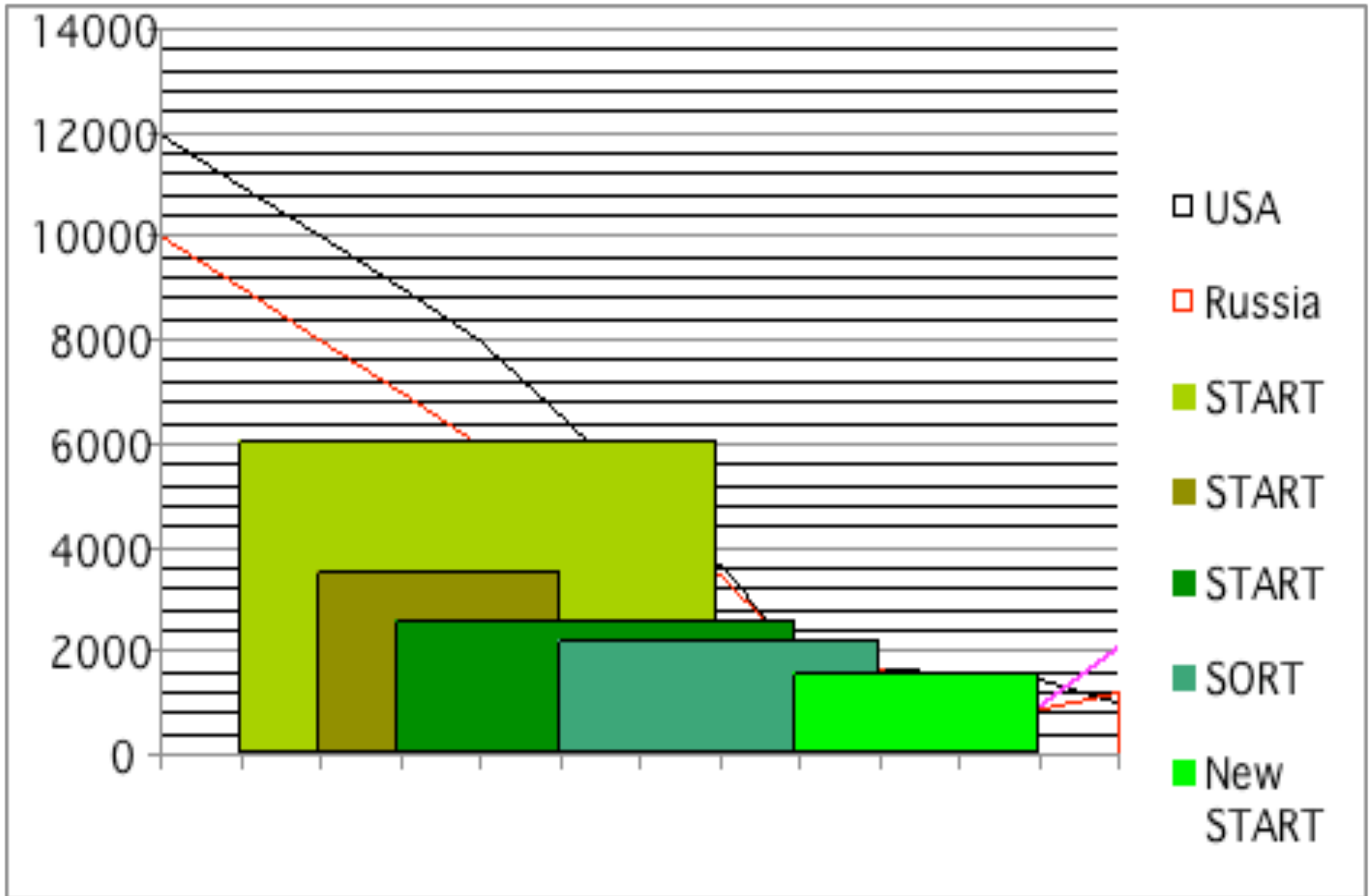
# Limitations and cuts by arms control (refreshing the memory)

Since peaks in mid 1970's and 1980's 10-times reduction in world arsenal total yield and 3,5-time in warheads number

Since 1990 US and Soviet/Russian strategic warheads number reduction by 5-6 times:

- SALT-1 1972 (ABMT, 1,800-2,600 missile launchers)
- SALT-2 1979 (2,150 delivery vehicles) not ratified
- INF-SRF 1987 (double zero)
- START-1 1991 (6,000 warheads)
- START-2 1993 (3,500 warheads) US-Russia divergence
- START-3 framework 1997 (2,500 warheads) not finalized
- SORT 2002 (2,200 warheads) unfinished treaty
- New START (1,550 warheads) signed in April, ratified in December 2010

# Nuclear warheads and START treaties



# Size of arsenals and treaties

- 1972-1991: limits on launchers and delivery vehicles, steep growth in warhead numbers
- 1991- 2010: deep cuts in warhead numbers (by 5-6 times)
- With each new treaty actual cuts relatively smaller
- Each new treaty more adjusted to US and Russia's national force planning

# What is new START?

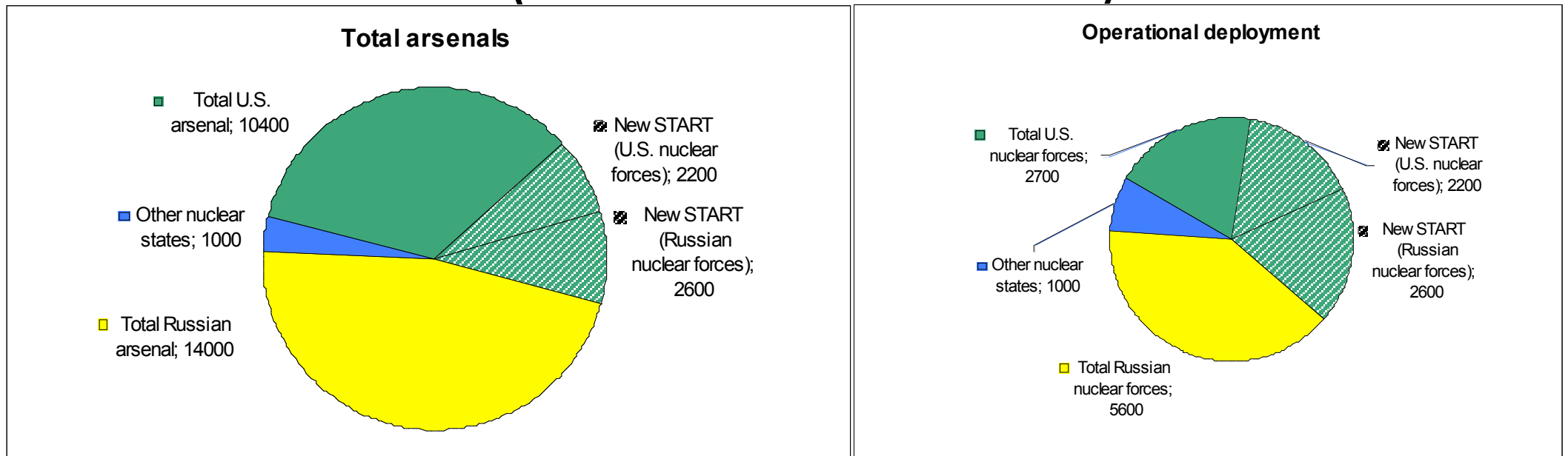
- (a) 700, for deployed ICBMs, deployed SLBMs, and deployed heavy bombers;
- (b) 1550, for warheads on deployed ICBMs, warheads on deployed SLBMs, and nuclear warheads counted for deployed heavy bombers;
- (c) 800, for deployed and non-deployed ICBM launchers, deployed and non-deployed SLBM launchers, and deployed and non-deployed heavy bombers.

# New START Assessment

Politically crucial for US(NATO)-Russian resetting  
Strategically – most controversial:

- Warheads ceiling 75% lower than START-1 and 30% lower than SORT of 2002
- Actual US and Russia's warheads number will be 80% lower than in 1991
- Only 5% actual reduction of US strategic forces
- More than 30% reduction of Russia's forces, but these would happen regardless...

# New START: Segments in Nuclear Arsenals (number of warheads)



	Total arsenals	Operational deployment
Total U.S. nuclear arsenal	10,400	2,700
U.S. nuclear forces (START)	2,200	2,200
Total Russian nuclear arsenal	14,000	5,600
Russian nuclear forces (START)	2,600	2,600
Other nuclear states	1,000	1,000

# New START counting rules

- US 56 heavy bombers - actual loading 1120 weapons, START-1 count 560, New START – 56.
- Russian 77 planes actual loading 916, START-1 count 616, New START - 77)
- Ohio/Trident submarines START-1 count – 18 boats, actual – 14 boats, New START – 12 “boomers”
- Trident-2 missiles: START-1 count 432 missiles and 3456 warheads; actual force 336 missiles, 1344 warheads; New START count 288 missiles and 1152 warheads



# Verification

- Inspections per year – 18 (28 by START-1)
- Notifications – 42 (152 by START-1)
- Agreed statements – 10 (39 by START-1)
- Telemetry exchange - no more than 5 tests
- No permanent monitoring (Votkinsk plant)
- No rules or limits on mobile ICBM operations
- Liberal rules of dismantlement/conversion (4 Ohio submarines retrofitted with 616 SLCMs, 60 B-1 and some B52H converted for conventional cruise missiles)

# New START unique features

- No US interest in Russia's reductions or limitations (START-1 – heavy missiles, through-weight)
- US interest in transparency
- Russia's concern about US up-load potential
- Russia's main fear of US strategic conventional precision guided weapons
- Russia's resistance to transparency

# Future controversies

- US growing conventional counterforce capability
- US up-load (reconstitution) potential
- US airspace vehicles (X-37B) (“ballistic missile” definition: ...major part of flight on ballistic trajectory)
- Russian new ICBM with maneuverable gliding re-entry vehicle (“Bird”)
- Telemetry
- Russia’s modernization, new heavy ICBM

# What ratification debates and resolutions demonstrated?

- Opposite assessments of pros and cons (no impact on Russian forces, downloading, conversion, Article V).
- Opposite interpretations (preamble on defense, conventional strategic arms, telemetry, new offensive weapon systems)

# A Standard-3 Missile-Interceptor is launched from the U.S. Navy Combat Ship



# Main issues of follow-on (2020-2030):

For the first time - main problems outside of strategic offensive weapons balance

- Around 1000 warheads level (if no new heavy ICBM).
- BMD – key problem.
- Strategic conventional arms.
- Space arms control (ASAT, BMD, Prompt Global Strike).
- Third nuclear weapons states (European nuclear force, China).
- Tactical nuclear forces

# Is follow-on possible?

- New START – making up for the lost decade of 2000-2008 (reductions 20 times smaller than by START-1)
- Next START – real hard core arms control
- Possible – only if moving to nuclear-free world is treated as serious practical strategy
- “Politics is just common sense applied to important matters”

Napoleon Bonaparte