Nuclear Weapons Operations and Risks in Europe, 2022

Hans M. Kristensen
Director, Nuclear Information project
Federation of American Scientists
hkristensen@fas.org

Briefing to
PUGWASH-USPID conference Nuclear Weapons: New Risks
Castiglioncello, Italy
October 21, 2022
Taking Stock

Enormous reductions since peak of 64,500 stockpiled warheads in 1986 (70,300 if including retired warheads):

- 51,800 warhead stockpile reduction
- 57,600 warheads dismantled
- 4,000 retired warheads currently awaiting dismantlement

Trend: pace of reductions slowed, everyone is modernizing, new types, increasing role, reaffirmation of importance, indefinite possession

Today: 9,440 warheads in stockpiles (12,700 if also counting retired warheads awaiting dismantlement)

US and Russia possess 90% of global inventory; each has more than 4 times more warheads than the rest of the world combined: 11-13 times more than third-largest (China)

Decreasing: US
Increasing: Britain, China, Russia(?), Pakistan, India, North Korea
Steady: France, Israel
Evolution of nuclear rhetoric from 1990s

Nuclear rhetoric has shifted from collaborative and subdued to combative and overt

Trump administration marked dramatic shift from Obama administration, although previous administration have also made threats

Putin regime has issued nuclear threats since 2005 and most recently during Ukraine war

Biden response has been more veiled but warnings have been stated nonetheless

"Let me be clear: Any use of nuclear weapons in this conflict on any scale would be completely unacceptable to us as well as the rest of the world and would entail severe consequences."

President Joseph Biden, New York Times, May 31, 2022

"No matter who tries to stand in our way or ... create threats for our country and our people, they must know that Russia will respond immediately, and the consequences will be such as you have never seen in your entire history."

Vladimir Putin, February 24, 2022
Evolution of nuclear doctrine from 1990s

Russia: Reinstating first-use (1993), limited use against non-nuclear attacks (2010), increased focus on NATO threat (2010-2016), emphasizing retaliation and no pre-emption (2018), more detailed/nuanced (2020: see box), threat of use in Ukraine scenario that does not match declaratory policy (2022)


In response to Russian developments, “the United States will enhance the flexibility and range of its tailored deterrence options” by fielding a low-yield Trident warhead and a sea-launched cruise missile to “expand the range of credible U.S. options for responding to nuclear or non-nuclear strategic attack…”

2018 Nuclear Posture Review
Evolution of nuclear operations from 1990s

Russia: Revival of long-range bomber operations outside Russian territory, increasing number of submarine patrols, lengthening of ICBM dispersal exercises, larger military exercises in Western Russia, inclusion of non-strategic nuclear forces in strategic exercises, Putin-direction of strategic exercises

United States: Increasing forward deployment of bombers to Europe (and Pacific), increasing role of nuclear bombers in support of NATO, broadening of bomber operating areas, occasional SSBN port visits and operations to increase public profile of force

NATO: Increased public profile of non-strategic nuclear exercises in Europe
Evolution of nuclear arsenals from 1990s

Russia: Near-complete modernization of strategic and many non-strategic forces, major nuclear base and infrastructure upgrades, new exotic weapons (Avangard, Kinzhal, torpedo)

United States: Elimination of most non-strategic nuclear weapons (1990s), completion of Trident SSBN and B-2 programs (late-1990s and early 2000s), B61-11 nuclear earth-penetrator, start of complete nuclear modernization, B61-12 guided nuclear bomb, possibly new sea-launched cruise missile

France: Elimination of (official) tactical nuclear weapons and land-based missiles, new SSBN/SLBM/warhead, reduction of bombers, new ALCM

UK: Elimination of tactical nuclear weapons, new SSBN/SLBM/warhead
Nuclear risks today

Deepening political animosity and military competition

Near-end of nuclear arms control and erosion of nuclear norms

Quickly escalating rhetoric and explicit/implicit nuclear threats

More offensive/threatening operations and exercises

Increased focus and profile of limited and non-strategic nuclear weapons and scenarios

New or modified weapons to serve increased non-strategic focus

Need: Complete reset of international political and military relations