

Nuclear Weapons Operations and Risks in Europe, 2022

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Briefing to

PUGWASH-USPID conference Nuclear Weapons: New Risks

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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

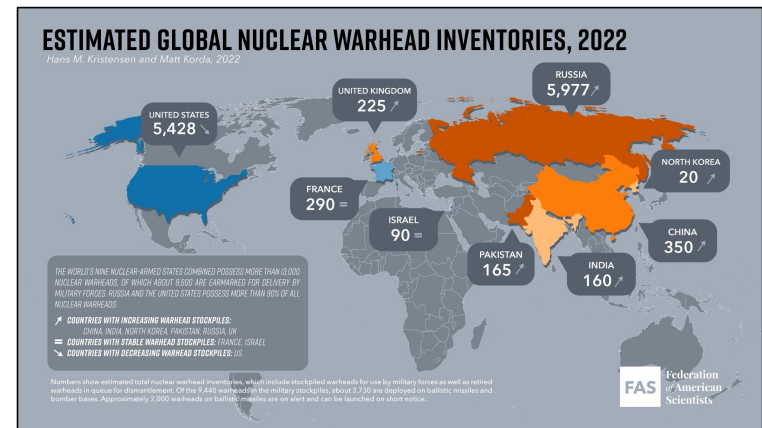
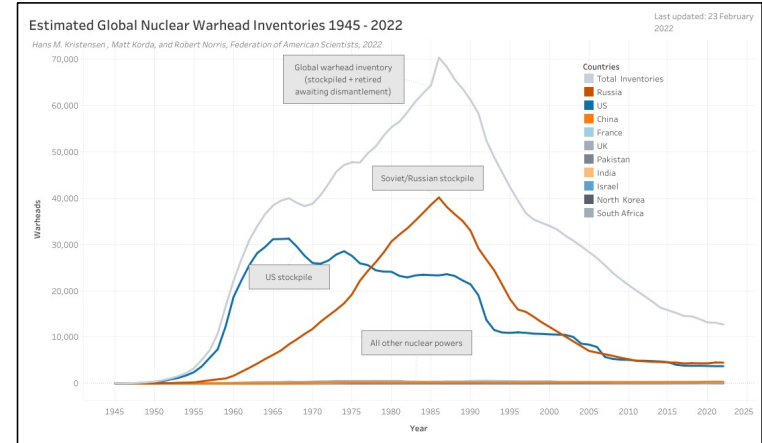
Today: 9,440 warheads in stockpiles (12,700 if also counting retired warheads awaiting dismantlement)

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

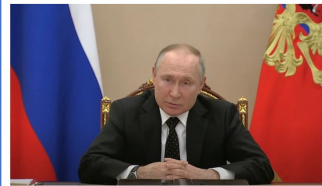
Trump administration marked dramatic shift from Obama administration, although previous administration have also made threats

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

Putin orders Russian nuclear deterrent forces to be on highest alert

The move comes in response to "hostile" rhetoric by top NATO officials, Russia's president has explained



Trump Threatens 'Fire and Fury' Against North Korea if It Endangers U.S.

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"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

"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

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)

United States: From nuclear to WMD deterrence (1991-1995), adversaries broadened from Soviet-focus to global (1990s), limited pre-emption mission (2002), reducing regional role with conventional forces (2010), rejection of minimum deterrence and emphasis on counterforce planning (2010-2013), enhanced role against non-nuclear strategic attacks (2018), refocus on major power competition (2018-2022)

The conditions determining the possibility of the use of nuclear weapons by Russian Federation are:

- a) the receipt of reliable information about the launch of ballistic missiles attacking the territory of the Russian Federation and (or) its allies;
- b) the use by the adversary of nuclear weapons or other types of weapons of mass destruction across the territories of the Russian Federation and (or) its allies;
- c) the enemy's influence on critical state or military facilities of the Russian Federation, the failure of which will lead to the disruption of the retaliatory action of nuclear forces;
- d) aggression against the Russian Federation with the use of conventional weapons, when the very existence of the state is jeopardized.

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...”

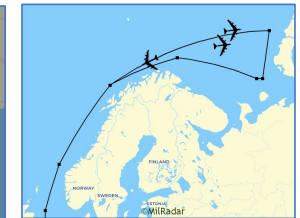
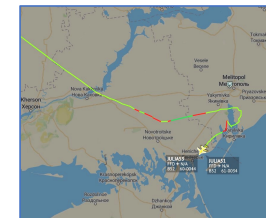
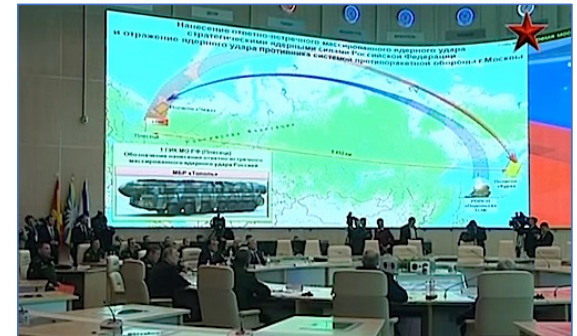
2018 Nuclear Posture Review

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

