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"Lowering the Nuclear Threshold: The Dangerous Evolution of World Nuclear Arsenals toward Far-Flung Dispersal, Hair-Trigger Launch Readiness, and First Use Doctrines"

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Good afternoon. My remarks today are my own personal views, which may not reflect the views of the State Department or the U.S. government.

Thank you, Austria, for facilitating this critical discourse. I am honored to speak again, post-Mexico [location of the previous Humanitarian Conference in Nayarit], on the risks of nuclear weapons use. These risks are hard to estimate – in fact, no one really knows what the probability of use is – but I would make the case that they are trending in the wrong direction.

First, the nine countries possessing nuclear weapons today are fielding new types of weapons, they are shortening the time needed to employ those weapons, and they're dispersing them more widely on ever-higher states of alert. All this is straining the ability of command systems to keep nukes under firm control.

Second, many countries are deliberately lowering the threshold for their intentional use. Russia and Pakistan plan to use nukes first and early during a conventional conflict. Russia's strategy is called 'de-escalatory escalation', which would unleash tens to hundreds of nuclear weapons in a first strike meant to shock an adversary into paralysis or into standing down. While China and India formally pledge not to be the first to use nukes in a conflict, they are alone among the nine.

Third, tension between Russia and the West is reviving nuclear brinksmanship, in which leaders brandish nukes to deter, coerce or otherwise threaten the very survival of opposing states.

I once participated in such posturing during a Middle East crisis by preparing to fire nuclear-tipped rockets at Russia. As strategic bombers and submarines ratcheted up their attack readiness, I and other missile crews retrieved launch codes and keys from the safes in our underground launch bunkers, and strapped into our chairs to brace for an imminent nuclear exchange.

The aim was to warn Russian leaders they had better back down or else risk a nuclear war, risk facing a nuclear war – a war caused not so much by premeditated aggression, as by events spinning out of control.

Russia and the wily Mr. Putin know this game very well and Russia is sounding nuclear warnings over Ukraine, backed by intensified bomber operations and other provocative military activities. NATO fighters have intercepted Russian aircraft many hundreds of times this year. Russian warplanes are also engaged in muscular interdiction. For example, a U.S. spy plane recently fled into Swedish airspace to escape harassment by Russian fighters.

Now, the situation is far from a full-blown nuclear crisis, but it's a slippery slope. There are risk-takers in the game, and deliberate or inadvertent escalation to a higher level of nuclear threat is quite possible if the situation worsens.

Now, preparing for nuclear conflict continues to be very serious business on both sides. That U.S. spy plane that was chased into Sweden routinely probes Russian borders looking for gaps in air defenses through which U.S. strategic bombers could penetrate to drop bombs on Russian territory during a nuclear war. The last U.S. nuclear bomb to explode in an all-out war would probably be a bomb dropped on downtown Moscow by a B-2 stealth bomber that had managed to worm itself through one of those holes. And that

would be the last of about 100 nuclear weapons assigned to strike Moscow in such a war today.

In all nine countries in fact they're preparing for the unthinkable. And in preparing for it they risk causing it – by miscalculation, by accident, inadvertent escalation, or without authorization.

The danger that nuclear war planning becomes a self-fulfilling prophecy is probably most evident in the hair-trigger readiness of U.S. and Russian strategic missiles. Hundreds of them, armed with nearly two thousand warheads, can be launched in seconds or minutes. The go-code from higher U.S. authority triggering such a launch comes as a message that is the length of a tweet. Tweet in hand, U.S. underground crews can then fire all of their missiles in 60 seconds. I personally practiced that hundreds of times. U.S. submarine crews can fire their missiles in 12 minutes.

Now, Russia has, believe it or not, shortened the launch time even further, by automating the firing process. High command posts in the Moscow area need only seconds to directly fire missiles out of silos as far away as Siberia. That they are wired for this, as U.S. missiles are wired to launch as soon as they receive a short stream of computer signals, creates a potential cyber-vulnerability of the first order.

Both sides today plan to send the go-code at the first signs of incoming warheads reported by early warning satellites and ground radar. Under this plan to launch on warning, the nuclear decision-making is extremely rushed, and emotionally charged. To prevent panic, the process is pre-scripted, driven by checklists, and rotely, mindlessly enacted. In some scenarios, after only a 3-minute assessment of early warning data, the U.S. president receives a 30-second briefing on his nuclear response options and their consequences. He then has, at most 12 minutes, probably closer to 6, to choose one of those options.

This is obviously a cosmic gamble. And indeed, the U.S. and Russia have come THIS close to disaster on several occasions involving false alarms. The risk of mistaken launch may be even higher today because of the decrepit state of Russia's early warning network.

Russia's command and control will come under further strain as it fields a new variety of strategic weapons. Russia almost certainly will also deploy tactical nuclear weapons in its latest annexation in Crimea. And Russia has novel nuclear weapons in the pipeline, weapons that the world has never seen before, that will pose a new set of humanitarian challenges for first-responders.

China. For fifty years – half a century – has been a model of nuclear restraint. Practically its entire modest arsenal is concentrated at a single storage complex. So, China runs minimal risks of mistaken or unauthorized launch, or accidents, or weapons falling into the hands of terrorists during transportation.

But China's restraint may not last. Its nuclear command, the second artillery, wants to put these forces on higher alert, and even outfit its President with a nuclear suitcase in order to expedite launch authorization. And in conjunction with that outset, China is developing an early warning satellite network that could support this option – policy of launch on warning.

What's India up to? Its nuclear establishment is pressing hard for India to 'operationalize' its arsenal for the first time. That means priming the weapons and the command system for rapid operations in peacetime, in crisis, and in war.

Similar pressures for 'operationalization' are building in Pakistan, which like India, will come under pressure in a crisis to assemble and mate its nuclear weapons nukes to its delivery platforms – the missiles and planes that would deliver those weapons in time of war, and then move them to forward locations.

The risk here is that given the lack of prior experience by these two countries in managing launch-ready forces, given Pakistan's strategy of early first use, and given flight times of just a few minutes between the neighboring countries, the region would become a nuclear tinderbox in a crisis. Also, the dispersed weapons would become exposed to terrorist capture.

Now, North Korea and Israel and then I'll wind up.

North Korea. Two points. One, the regime is definitely weaponizing. Its missiles have ample space in their nosecones to carry crude nuclear bombs, even today, to targets as far away as Japan. If and when this arming occurs, a nuclear disaster will be waiting to happen on, in, or around the Korean peninsula. Second: Kim Jong Un reminds us all that leaders with fingers on the nuclear button are fallible and susceptible to bouts of irrational, reckless and even delusional behavior. I'm sure Mr. Kim is not alone in this category.

I'll end with this snapshot of Israel. It's deploying, into the Persian Gulf, strategic submarines capable of launching nuclear cruise missiles. Depending on evolving threats in the region, particularly Iran's, Israel may well establish regular nuclear-armed sea patrols in the future.

In conclusion, I would say the clock is ticking on the use of nuclear weapons around the world. We're witnessing a steady lowering of the threshold for their use, and an increasing danger that they will be used – deliberately, or as a result of inadvertent escalation, hasty decision making, miscalculation, unauthorized acts, capture and use by terrorists.

Let me wrap up by noting the position of believers in nuclear deterrence. They believe that leaders ought to behave very cautiously indeed in the face of such risks of losing control, and in the face of apocalyptic threats to their homeland. But deterrence depends on scaring the other side, rolling the dice, playing nuclear roulette in a crisis, taking and

manipulating existential risk. And that means that we are simply playing nuclear roulette and are counting on a forever perfect run of good luck for our survival.

It's a fool's errand. We should reject nuclear deterrence as the basis of our collective security, and accept that the only reliable way to reduce the risks of use and to prevent use is to stand the nuclear forces, take them off prompt launch alert, de-alert them, reach an agreement among all the nuclear weapons countries that calls upon all of them to stand their weapons down and dismantle them.

Thank you very much.

END OF SPEECH

Q&A

Q from the International Red Cross/Red Crescent: Thank you for giving me the floor. Referring to the Red Cross/Red Crescent's decades of experiences in disaster preparedness, we know that accidents are always possible. For effectively responding to different types of disasters, including as we heard, technical emergencies, formulating common safety measures and responses is imperative. We listened with emotion this morning to the testimonies about humanitarian impact of nuclear weapon use and testing and now we have learned about risk. And the last speaker [Dr. Blair] has made a very pointed observation, which we need to bear in mind. We need to believe that we have to reduce vulnerabilities and in that we reduce risks. The lessons we can take from the discussion is that some risks are acceptable because unlike some recurrent risks they cannot be managed or responded to in a reasonable and responsible manner. The question then is this: Can the panelist think of effective ways for reducing risk in order to prevent the humanitarian impact caused by the use of nuclear weapons if we are not to eliminate

them today or once and for all? How can we then reduce these risks? Thank you very much.

Bruce Blair: Let me respond to the first question about what we can do to reduce risks and I think the answer is pretty clear. There's only one thing we can do to mitigate the risks immediately and that is to implement the proposal that's been on the table at the UN – that has been tabled as UN resolutions by the Swiss many times, which is to reduce the operational readiness of nuclear weapons, which is an idea, a proposal, that has been agreed to through the NPT review process by all of the nuclear weapons countries. Although, there are four that vote no to this resolution to reduce operational readiness – that's the United States, France, Russia and the United Kingdom. 167 other countries have voted 'Yes' including three nuclear weapons countries – India, Pakistan and China. So we need, I think, first and foremost for governments to go beyond the UN resolution and seek to codify as a politically and legally binding understanding, agreement, among the nuclear weapons countries that they would refrain from keeping nuclear weapons on high alert status. I think the interested parties should go off, Ottawa-process like [referring to the Canadian-led effort to negotiate a global ban on anti-personnel landmines], and come back with an agreement in a couple of years that every can sign on to that would have the effect of de-alerting the nuclear forces of all the countries, getting them into a configuration that would effectively eliminate, virtually, all of the risks we are talking about from unauthorized launch to mistaken launch and all the rest. So that's really, I think, the number one agenda. That's the thing that we can do quickly that would bring huge benefit from the standpoint of human security. Thank you.