

Frequently Asked Questions about Taking Nuclear Weapons Off Hair-Trigger Alert

Q: What does it mean to say that nuclear missiles are on hair-trigger alert?

A: Nuclear missiles that are kept in a state of readiness that allows them to be launched within minutes after a decision to launch are commonly said to be on “hair-trigger alert.” The military sometimes refers to this status as “high alert,” “ready alert,” “day-to-day alert,” “launch-on-warning status,” or “prompt-launch status.”

Q: Why is it dangerous to keep nuclear missiles on hair-trigger alert?

A: The United States and Russia keep their missiles on hair-trigger alert so they can be launched within minutes of a decision to do so, in response to warning of an incoming attack. The warning would be based on data from radars and satellites.

This alert posture is dangerous. Maintaining the option of launching weapons on warning of an attack leads to rushed decision making. It would take a land-based missile about 30 minutes to fly between Russia and the United States; a submarine-based missile could strike in as little as 10 to 15 minutes after launch. After receiving warning of an attack, political and military leaders would have very little time to assess the credibility of the warning and decide how to respond. This time pressure increases the chance that the U.S. or Russian president would order a launch based on faulty sensor data, a computer glitch, or other erroneous information. Such problems have occurred repeatedly over the past decades and nearly led to a Soviet launch against the United States in 1983 (Schlosser 2013).

Maintaining the ability to launch within minutes also reduces the barriers to or safeguards against accidental and unauthorized launches. And a missile once launched cannot be recalled.

The launch of missiles, even if accidental or unauthorized, would devastate the targeted country

and could trigger a retaliatory nuclear strike by that country.

Q: Why would taking missiles off hair-trigger alert increase our security?

A: Doing so would remove the time pressure to launch these missiles very quickly in the event of a warning of an attack. It would eliminate the risk of launching missiles in response to a false warning. At a minimum, it would reduce the risk of accidental and unauthorized launches; depending on how the missiles were removed from high alert, doing so could eliminate the risks of accidental and unauthorized launches. For example, if the warheads were removed from the missiles and stored separately, there would be no possibility of an accidental or unauthorized launch.

Q: Why have the United States and Russia put their nuclear weapons on hair-trigger alert?

A: During the cold war, military strategists in both countries feared the other could launch a surprise first strike attack of hundreds or thousands of nuclear weapons, some of which would attempt to destroy the enemy’s land-based missiles and bombers. To ensure that it maintained the ability to retaliate to a first strike, each country kept some of its weapons on high alert so they could be launched in retaliation quickly rather than being destroyed on the ground.

For years the United States kept nuclear-armed bombers in the air 24 hours a day. It ended this practice in 1968 after several accidents involving these aircraft made clear that the dangers of this policy outweighed any possible benefits. Russian bombers are also not on airborne alert today. However, both countries continue to keep a large number of nuclear ballistic missiles on hair-trigger alert. Regardless of whether this policy ever made sense, it does not today since the likelihood of a surprise nuclear attack today

is less than the risk of accidental, unauthorized, or mistaken launches of nuclear missiles.

Q: Why does the United States continue to keep missiles on hair-trigger alert 25 years after the end of the cold war?

A: The short answer is that there is no good reason. This posture is a dangerous policy left over from the past. When they were campaigning for office, both President George W. Bush and President Obama called for taking missiles off high alert due to the dangers it posed. Retired high-level military officials such as General James Cartwright, former commander of U.S. Strategic Command and vice-chair of the Joint Chiefs of Staff, and prominent policymakers such as former U.S. Secretary of State George P. Shultz have also called for changing this policy (UCS 2015).

Proponents of maintaining U.S. land-based missiles on hair-trigger alert note that because these weapons are at known locations, they are vulnerable to attack if they are not ready to be launched at the first sign of an incoming attack—sometimes described as a “use them or lose them” situation. They argue that for the United States to maintain an effective deterrent, these missiles must be kept on high alert so they can be launched on warning of an attack. This position, however, fails to take into account the deterrent value of the hundreds of U.S. weapons based on submarines, which are not vulnerable to attack when they are hidden in the ocean on patrol.

Some proponents of the status quo also argue that if the United States and Russia remove their missiles from hair-trigger alert, there could be a race to re-alert them in a time of crisis, which could increase the incentive to launch a first strike. While a U.S. and/or Russian decision to re-alert its missiles would certainly exacerbate an existing crisis, any rational military or political leader would understand that a successful first strike that would remove the adversary’s ability to retaliate is not possible, and would therefore not order such an attack.

Moreover, the problem of exacerbating a crisis by increasing nuclear alert levels already exists—whether or not U.S. or Russian missiles are removed from hair-trigger alert. Neither country keeps all its nuclear weapons on high alert. In the event of a crisis, both

countries could decide to raise the alert level of their forces, which would be observable by the other. For example, the United States has plans to load its bombers with weapons and disperse them to other airbases so they would be less vulnerable to attack, movements that Russia would detect.

Q: Do U.S. military experts support taking U.S. missiles off hair-trigger alert?

A: Yes. High-level retired U.S. military officers including Gen. James Cartwright (Marine Corps four-star general, Vice Chairman of the Joint Chiefs of Staff, and Commander of U.S. Strategic Command), Gen. George Lee Butler (Air Force four-star general, Commander of U.S. Strategic Air Command, and Commander of U.S. Strategic Command), Gen. William Odom (Army three-star general, Director of the National Security Agency under President Reagan), Adm. Stansfield Turner (Navy admiral and commander of the Navy’s nuclear submarine fleet, Director of the Central Intelligence Agency, and President of the Naval War College), and other experts including former U.S. Secretary of Defense William Perry and former U.S. Senator Sam Nunn have all called for U.S. nuclear missiles to be taken off hair-trigger alert (UCS 2015).

Q: How many nuclear missiles does the U.S. keep on hair-trigger alert?

A: The exact number is classified, but experts estimate that the United States keeps a total of about 900 nuclear warheads on high alert (Kristensen and McKinzie 2012). That estimate includes nearly all of the nation’s 450 long-range land-based missiles, each carrying one warhead, plus approximately 100 of its long-range submarine-based missiles, each carrying four or five warheads. Similarly, experts estimate Russia keeps about 900 warheads on alert, although most of theirs are on land-based missiles.

Q: How long would it take to launch a missile that is on hair-trigger alert?

A: U.S. land-based missiles can reportedly be launched within five minutes of a presidential decision to do so, and submarine-based missiles within 15 minutes (Kristensen and McKinzie 2012). Russian officials have

stated that their land-based missiles can be launched within tens of seconds; it is not known whether that claim is an exaggeration or if Russian launch procedures allow faster launches than do U.S. procedures.

Q: Would taking US missiles off hair-trigger alert reduce deterrence, and therefore reduce our security?

A: No. The United States does not need to have nuclear weapons on high alert to ensure it can respond to a nuclear attack and thereby to maintain a strong deterrent. The United States currently deploys more than 1,000 warheads on submarines, which are not vulnerable to attack when they are on patrol hidden in the ocean. Therefore submarine-based missiles are not under the same pressure to be launched quickly as are land-based missiles (Kristensen and Norris 2014). That number of warheads is many more than necessary to maintain a reliable and credible deterrent.

Q: What is the difference between a mistaken, accidental, and unauthorized launch?

A: Under U.S. policy, only the U.S. president can order the use of nuclear weapons; if the president is incapacitated, there is a chain of command that would be followed. An *unauthorized* launch is a deliberate launch that would take place without a presidential order. It could be perpetrated by insiders (e.g., ordered by those in the chain of command with access to the launch codes), or by outsiders (e.g., through a cyber-attack). A *mistaken* launch would be authorized by the president, but in response to a false warning of an incoming attack. An *accidental* launch would not be deliberate, but would occur through a system error (e.g., a computer glitch).

Q: Could the United States call back a missile or have it self-destruct if it were launched by mistake, by accident, or without authorization?

A: No. There is no way to recall a nuclear ballistic missile once it has been launched, and they do not have self-destruct mechanisms. Even if the military or president realized immediately that a launch was mistaken, there would be nothing they could do to stop the missile

from reaching its target. These are key reasons that hair-trigger alert is so dangerous.

Q: How would the United States take missiles off hair-trigger alert?

A: Taking a missile off high alert so that it cannot be launched on a moment's notice can be done in many different ways. The speed and ease of reversal would depend on the method used. For example, each U.S. missile silo has a safety switch that prevents the missile from being launched when maintenance workers are in the silo; flipping this switch to the "safe" position would remove the missile from hair-trigger alert. The silos are not staffed, so it would take a few hours for someone to travel to the silo, flip the switch to the on position, and return the missile to high alert. It could take up to a few days to return all U.S. land-based missiles to high alert. Another option is to remove the warheads from the missiles and store them separately, which would take much longer to reverse.

Q: Do other countries maintain their nuclear weapons on hair-trigger alert?

A: Russia also keeps missiles on hair-trigger alert. France and Britain each maintain several dozen operational warheads on submarines, but the preparation time to launch these missiles is thought to be longer than for U.S. and Russian missiles (Kristensen and McKinzie 2012). China does not have a warning system to alert it to an incoming attack, and does not keep its missiles on high alert.

Q: If Russia still maintains its missiles on hair-trigger alert, shouldn't the United States continue to do the same?

A: While it would be preferable for both countries to take their missiles off hair-trigger alert, we are safer even if only the United States does. Despite tensions with Russia, today an intentional "bolt from the blue" attack—the threat that prompted the United States to put its missiles on hair-trigger alert during the cold war—is not a concern. Today, high alert only increases the risk that U.S. missiles would be launched by accident, in response to a false warning, or without authorization. Not only could such a U.S. launch kill

large numbers of people in Russia, but Russian detection of the launch would likely trigger a retaliatory strike on the United States. A U.S. decision to take its land-based missiles off high alert would reduce this risk, and could also help encourage Russia to take similar steps, which would further benefit U.S. security.

Q. Is taking U.S. missiles off hair-trigger alert a good idea given the current tensions with Russia?

A. Yes. U.S. deterrence against an intentional Russian nuclear attack will remain strong whether or not U.S. missiles are on hair-trigger alert. The biggest risk of nuclear use today is the accidental, mistaken, or unauthorized launch of one or more nuclear missiles—a risk that is likely to increase during a crisis. The current tensions with Russia are therefore a reason to take U.S. missiles off hair-trigger alert.

References (all URLs accessed January 2015).

Kristensen, H.M., and M. McKinzie. 2012. *Reducing alert rates of nuclear weapons*. UNIDIR/2012/6. Geneva, Switzerland: United Nations Institute for Disarmament Research. Online at <http://www.unidir.org/files/publications/pdfs/reducing-alert-rates-of-nuclear-weapons-400.pdf>.

Kristensen, H.M., and Robert S. Norris. 2014. US nuclear forces, 2014. *Bulletin of the atomic scientists* 70(1):85–93. Online at: <http://bos.sagepub.com/content/70/1/85.full>.

Schlosser, E. 2013. *Command and control: nuclear weapons, the Damascus accident, and the illusion of safety*. New York: The Penguin Press.

Union of Concerned Scientists (UCS). 2015. *U.S. military and political leaders urge taking nuclear weapons off hair-trigger alert*. January. Fact sheet. Online at www.ucsusa.org/hairtriggerquotes.



Find this document online: www.ucsusa.org/hairtriggerfaq

The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's most pressing problems. Joining with citizens across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

NATIONAL HEADQUARTERS

Two Brattle Square
Cambridge, MA 02138-3780
Phone: (617) 547-5552
Fax: (617) 864-9405

WASHINGTON, DC, OFFICE

1825 K St. NW, Suite 800
Washington, DC 20006-1232
Phone: (202) 223-6133
Fax: (202) 223-6162

WEST COAST OFFICE

2397 Shattuck Ave., Suite 203
Berkeley, CA 94704-1567
Phone: (510) 843-1872
Fax: (510) 843-3785

MIDWEST OFFICE

One N. LaSalle St., Suite 1904
Chicago, IL 60602-4064
Phone: (312) 578-1750
Fax: (312) 578-1751