

# TAKING NUCLEAR MISSILES OFF HAIR-TRIGGER ALERT

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Decades after the end of the Cold War, both the United States and Russia maintain hundreds of nuclear missiles on heightened alert, ready to be launched on a few minutes notice.<sup>1</sup> In the event of a nuclear crisis, decision makers in either country could be required within minutes to decide whether a perceived threat called for the commencement of thermonuclear war.

The danger of maintaining nuclear missile at this alert level – variously referred to as “launch-ready,” “launch on warning,” or “hair trigger alert” – has been extensively documented. Several times over the years the world has come, through human or computer error, within minutes of accidental nuclear war.<sup>2</sup> For example, in January, 1995 – years after the end of the Cold War – Russian early warning radar initially interpreted the launching of a civilian scientific rocket from Norway as a possible U.S. missile attack, causing the activation of President Yeltsin’s “nuclear briefcase” and the retrieval of launch codes.<sup>3</sup> In 1983, Soviet radar incorrectly reported an incoming U.S. missile attack, but fortunately the lieutenant colonel on duty in the situation room correctly guessed that it was a false alarm.<sup>4</sup> In 1979, U.S. nuclear forces were placed on highest alert after a training tape of a simulated Soviet attack was mistakenly inserted into one of NORAD’s operational computers.<sup>5</sup> There have been many similar incidents which are publicly known, and undoubtedly others which are not.

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<sup>1</sup> Kristensen, H.M. and M. McKinzie, “Reducing Alert Rates of Nuclear Weapons,” United Nations Institute for Disarmament Research 2012, <http://www.unidir.org/files/publications/pdfs/reducing-alert-rates-of-nuclear-weapons-400.pdf>

<sup>2</sup> See, e.g., Patricia Lewis et al., “Too Close for Comfort: Cases of Nuclear Near Miss and Options for Policy,” Chatham House, 2014, [http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public\\_html/sites/default/files/20140428TooCloseforComfortNuclearUseLewisWilliamsPelopidasAghlani.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/20140428TooCloseforComfortNuclearUseLewisWilliamsPelopidasAghlani.pdf); Eric Schlosser, *Command and Control: Nuclear Weapons, the Damascus Accident, and the Illusion of Safety*, New York, The Penguin Press, 2013

<sup>3</sup> Schlosser 2013, p. 478

<sup>4</sup> Hoffman, M., “Nuclear Safety Slipped for Years Before Minot,” *Air Force Times* February 25, 2008, <http://archive.airforcetimes.com/article/20080225/NEWS/802250332/Nuclear-safety-slipped-years-before-Minot>

<sup>5</sup> Shulman, M. 1979. Memo to Secretary of State Cyrus Vance, November 16, Washington, DC: U.S. Department of State, (originally classified Top Secret, subsequently declassified), cited in Union of Concerned Scientists, “Close Calls with Nuclear Weapons,” Factsheet, April 2015, <http://www.ucsusa.org/nuclear-weapons/hair-trigger-alert/close-calls>

The obvious peril has, over the years, elicited numerous calls for change. George W. Bush, in the 2000 Presidential campaign, called for a lowering of alert levels. Barack Obama, in 2008, stated that launch on warning “increases the risk of catastrophic accident or miscalculation,” and that the United States should “work with Russia to end such outdated Cold War policies in a mutual and verifiable way.” Many senior military and national security leaders have made similar statements.<sup>6</sup> In 2014 the UN General Assembly overwhelmingly passed a resolution calling for the lowering of nuclear missile alert levels, with the U.S., Russia, the UK and France casting the only negative votes.<sup>7</sup>

Thus far all calls to remedy the situation have been blocked, apparently by military concerns over the need to maintain sufficient readiness and, perhaps, the institutional inertia which meets any attempt to alter a long-established major policy. Recent developments, however, have highlighted the issue with increased urgency.

The deteriorating relations between Russia and NATO, and the increasing number of provocative military actions and threats, give a stark reminder of the dangers of miscalculation which accompany great power confrontations. It is sobering to recall that we have just observed the centennial of the First World War, in which great powers drifted and blundered into a conflict which left much of Europe in ruins.

The danger of accidental or unauthorized nuclear conflict is also increasing because of developments in cyber warfare and the risk of malicious hacking by rogue states or terrorist groups. A commander of U.S. Strategic Forces has testified before the Senate that he was “very concerned about the potential of a cyber-related attack on our nuclear command and control and on the weapons systems themselves.”<sup>8</sup> A head of the National Nuclear Security Administration has reported that NNSA’s computers are under “constant attack” by both foreign governments and “fairly sophisticated non-state

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<sup>6</sup> E.g. Admiral (Ret.) Stansfield Turner, former head of the CIA (“I think one of the first things we should do is take every U.S. weapon off high alert. We have an absolutely insane policy in this country”); General (Ret.) George Lee Butler, former commander of U.S. Strategic Command (“pray for the political leadership that they might have the wisdom and the courage to take steps that are required, to reduce these forces from their states of hair trigger alert”); Gen. (Ret.) William Odom, former head of the National Security Agency (“Firing off 1,000 or 500 or 2,000 nuclear warheads on a few minutes consideration has always struck me as an absurd way to go to war”). For many other examples, see “U.S. Military and Political Leaders Urge Taking Nuclear Weapons Off Hair-Trigger Alert,” Union of Concerned Scientists 2015, <http://www.ucsusa.org/sites/default/files/attach/2015/01/leaders-against-hair-trigger-alert.pdf> See also, U.S.M.C. Gen. (Ret.) James Cartwright and Gen.(Ret.) Vladimir Dvorkin, “How to Avert a Nuclear War,” New York Times Op Ed April 19, 2015, [http://www.nytimes.com/2015/04/20/opinion/how-to-avert-a-nuclear-war.html?partner=rss&emc=rss&smid=tw-nytimesworld&\\_r=2](http://www.nytimes.com/2015/04/20/opinion/how-to-avert-a-nuclear-war.html?partner=rss&emc=rss&smid=tw-nytimesworld&_r=2)

<sup>7</sup> A/RES/69/42, 2 December 2014, “Decreasing the operational readiness of nuclear weapons systems,” adopted by a vote of 166 to 4 with 11 abstentions

<sup>8</sup> <https://www.armscontrol.org/act/2013-04/Study-Sees-Cyber-Risk-for-US-Arsenal>

actors.”<sup>9</sup> A report by the Defense Science Board (DSB) to the Department of Defense found that “DoD’s networks are built on inherently insecure architecture” and that DoD “red teams” have frequently been successful in penetrating military networks “using attack tools which can be downloaded from the internet.”<sup>10</sup>

Of course, as the State Department has recently noted, “the U.S. employs multiple, rigorous, and redundant technical and procedural safeguards to protect against accidental or unauthorized launch.”<sup>11</sup> So also, presumably, does the Russian Federation. However, the risk of vulnerability to cyber attack can never be securely eliminated. As the DSB report further noted, “[t]he complexity of the software defending our networks continues to increase exponentially over time, due to increased complexity of the systems they attempt to protect, yet the size of software code used for the average successful attack remains nearly constant. This challenge is as old as the ages: the defense must protect against all possible offenses, and the offense can mass all its resources against the weakest point of the defense.”<sup>12</sup> The report concludes that “[w]hile there are many tests which can demonstrate vulnerability, there will **never be a test** that demonstrates or proves the security of a system”.<sup>13</sup>

The danger is greatly exacerbated by the high probability of communications failures in times of nuclear crisis. In the past, “hotlines” and other emergency communications systems have malfunctioned or otherwise been unavailable when most needed. Studies of past crisis situations, based on declassified documents, interviews, and testimonies by participants, reveal numerous instances in which crucial information was unavailable, misunderstood, or simply not passed on to decision makers.<sup>14</sup> Problems caused by the subjective, incomplete, and sometimes erroneous information available may be further complicated by the extreme psychological stress experienced by participants and decision makers. In the case of the 1983 Soviet radar malfunction discussed above, the lieutenant colonel who made the crucial decision later reported that he and other participants had been in “a state of shock” after the false alarm occurred.<sup>15</sup> A U.S. Senator who was present at the time of the 1979 NORAD false alarm later testified that “panic broke out. It was a very frightening and disconcerting thing.”<sup>16</sup>

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<sup>9</sup> <http://www.usnews.com/news/articles/2012/03/20/us-nukes-face-up-to-10-million-cyber-attacks-daily>  
<sup>10</sup> <http://www.acq.osd.mil/dsb/reports/ResilientMilitarySystems.CyberThreat.pdf>

<sup>11</sup> U.S. Department of State Fact Sheet, “Myths and Facts Regarding the Nuclear Non-Proliferation Treaty and Regime,” Bureau of International Security and Nonproliferation, April 14, 2015

<sup>12</sup> *Ibid.*, p. 29

<sup>13</sup> *Ibid.*, p. 31 (emphasis in original)

<sup>14</sup> Lewis 2014, pp. 24-30

<sup>15</sup> Lewis 2014, p. 24

<sup>16</sup> Hearing before Committee on Foreign Relations, “Nuclear Arms Reduction Proposals,” U.S. Senate, 97th Congress, Second Session, April-May 1982, Government Printing Office

Further, the entire nuclear non-proliferation regime is under increasing pressure from frustration among non-nuclear weapons states over the pace of nuclear disarmament, and specifically over the amount of progress made under the action plan adopted at the 2010 NPT Review Conference as well as the Thirteen Steps adopted by the 2000 NPT Review Conference, reaffirmed in 2010. Goals include diminishing the role of nuclear weapons in security policies and concrete agreed measures reducing the operational readiness of nuclear forces.<sup>17</sup> Lowering of alert levels would be a tangible step the U.S. and other nuclear powers could point to as evidence that a world safe from the nuclear threat is not just a distant mirage.

Progress on the lowering of alert levels could be made without the necessity for Congressional action, by staged unilateral initiatives with an expectation of reciprocity, by informal understanding, or by executive agreement. To the extent that technical or strategic issues might be perceived as obstacles to some elements of de-alerting, they should be the subject of expedited study in search of solutions. While consultations should not serve as a reason for delay on what is feasible to do now, U.S.-Russian discussions at an expert level and/or discussions within the P5 process would also help to resolve such issues. As the International Court of Justice concluded, Article VI of the Nonproliferation Treaty obliges the nuclear weapons states to not only pursue but also “bring to a conclusion” good faith negotiations for nuclear disarmament.<sup>18</sup> Under this standard, the appropriate response to a technical obstacle is redoubled effort, not the declaration of an impasse.

Maintaining nuclear weapons in “launch on warning” mode subjects humanity and the planet to an intolerable level of danger – no less dangerous or intolerable because many have grown accustomed to it. Action for the lowering of nuclear alert levels should be initiated without further delay.

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<sup>17</sup> NPT/Conf.2000/28 (Parts I and II), pp.14-15, <http://www.un.org/disarmament/WMD/Nuclear/2000-NPT/pdf/FD-Part1and2.pdf>; NPT/CONF.2010/50 (Vol. I), pp. 19, 21, [http://www.un.org/ga/search/view\\_doc.asp?symbol=NPT/CONF.2010/50%20\(VOL.I\)](http://www.un.org/ga/search/view_doc.asp?symbol=NPT/CONF.2010/50%20(VOL.I))

<sup>18</sup> *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 2006, I.C.J. Reports 1996, p. 226, para. 105(2)F