

Connecticut Debate Association

October 14, 2017

AITE and Seymour High School

Resolved: The US should expand and modernize its nuclear arsenal.

The U.S. Nuclear Triad Needs an Upgrade

The Wall Street Journal, Jan. 11, 2017 7:09 p.m. ET

With bombers shifted to other duties and missiles aging out, the arsenal looks wobbly at best.

This open letter is signed by the following retired four-star U.S. Air Force and Navy officers, all former commanders of the United States Strategic Command or its predecessor, the Strategic Air Command: Gen. C. Robert Kehler, Gen. Larry D. Welch, Adm. James O. Ellis Jr., Gen. Kevin P. Chilton, Adm. Cecil D. Haney, Adm. Henry G. Chiles, Gen. Eugene E. Habiger and Adm. Richard W. Mies.

The United States has long relied primarily on a triad of nuclear-capable ballistic missile submarines (SSBNs) at sea, land-based intercontinental ballistic missiles (ICBMs), and long-range bombers to deter attacks on the U.S. and our allies. The combined capabilities of the triad provide the president with the mixture of systems and weapons necessary to hold an adversary's most valuable targets at risk, with the credibility of an assured response if needed—the essence of deterrence. The triad's flexibility and responsiveness among its elements allow political leaders to signal intent and enhance deterrence stability in crises or conflict.

Today's triad is far smaller and postured much less aggressively than its Cold War ancestor. Shaped by presidential initiatives and sized by arms reduction agreements, by 2018 the number of weapons deployed on triad systems will be barely one-tenth of Cold War highs. Heavy bombers and supporting tankers are no longer loaded and poised to take off with nuclear weapons, and ballistic missiles are aimed at open areas of the ocean. Theater nuclear forces have been reduced to a small number of dual-capable aircraft supporting the NATO alliance.

The common post-Cold War hope and expectation among Western leaders was for a benign "new world order." The reality, however, is that the United States now faces far more diverse security problems and greater uncertainty than it did during the Cold War. Threats now range from small arms in the hands of extremists to nuclear weapons in the hands of hostile foreign leaders who frequently declare their willingness to engage in nuclear first use.

For example, Russia's (and North Korea's) explicit nuclear threats now remind us almost daily that nuclear weapons are not gone and it appears they will not be eliminated from world affairs anytime soon. Russia and China are modernizing their nuclear forces as the basis of strategies designed to expand their positions at our expense and that of our allies. In addition, North Korea's nuclear capabilities now threaten our regional allies and eventually could threaten us directly.

Given these realities, the nation continues to need the strategic benefits we have come to rely on from a nuclear triad that works together with other elements of U.S. power to provide effective deterrence for the 21st century. We have participated in numerous studies and reviews that confirm that recapitalization of the nuclear triad is required and time is running out.

The last concentrated investment to modernize the triad came during the Reagan administration. We continue to rely on that era's Ohio-class SSBNs, missiles, and B-2 bombers today as well as B-52s, Minuteman ICBMs, Air Launched Cruise Missiles (ALCMs), and command-and-control systems that were designed and fielded far earlier. Even with periodic upgrades and life extensions, legacy systems that were conceived and deployed over three decades ago are reaching the inevitable end of their service lives.

Some former senior officials have recently recommended eliminating the ICBM leg of the triad. But we have already removed the bombers from the daily nuclear deterrence commitment, and we now essentially rely on a relatively small "dyad" of SSBNs and ICBMs to meet our daily deterrence requirements. The consistent readiness of our ICBMs has allowed us to adjust the number of SSBNs routinely at sea, and together the ICBMs and SSBNs have freed the bombers for use by commanders in a conventional role—with great effect across a range of national security needs to include against terrorist organizations.

Plans are in place (and are exercised) to return the bombers to nuclear alert if needed. Leveraging this dual-capable flexibility of the bomber force will be a significant strength of the future triad for deterring foes and assuring allies. In short, the combined strengths of the triad, including the ICBM force, continue to create great efficiencies and flexibility in support of our enduring national security objectives.

Eliminating the ICBM leg of the triad now would effectively leave the U.S. with a “monad” of SSBNs for daily deterrence, unless bombers are returned to nuclear alert status—which would mean that an unforeseen advance in antisubmarine warfare, or a technical failure in the SSBNs, their missiles, or warheads would force the president to choose between having no readily available nuclear deterrence capabilities or quickly returning bombers to nuclear alert—a step that carries its own cost and risk. Eliminating ICBMs would also greatly simplify an enemy’s attack problem, with implications for deterrence and stability.

National commitment and consensus are as important now as they were during the Cold War. We face an uncertain future and there is no higher national security priority than deterring the actual or coercive use of nuclear weapons against us and our allies. Our potential adversaries are not idly standing by, and we have run out of time to further delay the recapitalization of our nuclear deterrent. The United States will need a nuclear deterrent for as far into the future as we can see and a triad shaped to 21st century needs is still the most effective means to provide it.

A bipartisan consensus now exists in Congress in support of plans to modernize all three triad legs, the industrial complex that sustains our nuclear weapons, and the critical command and control system that links the president to the nuclear forces for positive control. Let’s get on with it.

The Cold War Isn’t Back. So Don’t Think Like It Is.

The New York Times, Ivan Krastev DEC. 21, 2016

SOFIA, Bulgaria — Being Bulgarian, I can tell you that international news media cover elections in small European countries the same way a literature professor reads a spy novel during a summer holiday: It’s a pleasant diversion, but one quickly forgets the characters, and it doesn’t really matter if the narrative gets scrambled. Normally, this is not a problem, but it can become one next year.

In 2017 there will be elections not only in Germany, France and the Netherlands but also most likely in Greece, Italy and, again, Bulgaria. This will be a moment of truth for Europe. Social media is being invaded by fake news and conspiracy theories, while mainstream outlets are obsessed with the Kremlin’s interference in the electoral politics of Western democracies. Moscow’s meddling has become a universal explanation for everything that happens on Europe’s periphery and, it seems, elsewhere, too. So it’s critical that people get the story right. But that will not be easy.

Take the November presidential elections here in Bulgaria: The international news media portrayed the victory of Rumen Radev, a United States-trained Air Force general who ran as an independent, as yet another triumph for President Vladimir V. Putin of Russia, and further proof of his growing influence in Eastern Europe. That the Bulgarian election more or less coincided with Moldova’s, in which a Russia-backed candidate won, as well as the reports of a failed pro-Russian coup attempt in Montenegro, led many to the conclusion that Russia was regaining its traditional sphere of influence.

Is that really the case?

Foreign policy was hardly the critical concern for the majority of Bulgarians who cast ballots. And truth be told, Moscow’s influence isn’t creeping into Bulgaria — it’s long been here. A vast majority of Bulgarians value their membership in NATO and, even more, the European Union. But for historical and cultural reasons, most prefer not to see Russia as an enemy. So, unsurprisingly, both General Radev and his center-right opponent advocated lifting sanctions on Russia and improving relations with Moscow.

I share this Bulgarian story because the debate over the Kremlin’s alleged interference in the United States’ presidential election has revived a Cold War framework for understanding the world. Political outcomes in small countries tend to be explained as a zero-sum game between Russia and the West. There are three major problems with this approach.

First, it confuses more than it clarifies. In the 1970s and ‘80s a number of third-world nationalists were caricatured by the West as Communists, despite the fact that they were focused on fighting for independence, not Soviet Communism. The United States and its allies wasted energy warring with them. But misrecognizing nationalists as Communists sometimes became a self-fulfilling prophecy: After being labeled Communist, many of the third-world revolutionary governments indeed became pro-Soviet. The moral is that we should not be surprised if the constant labeling of populist parties and leaders in Europe as “pro-Russian” turns them into the Kremlin’s friends.

Second, the return of the Cold War narrative is becoming a factor in Russia’s growing international influence. The West’s current obsession with Mr. Putin is at the heart of the Russian president’s newly discovered soft power. If Moscow, as so much of the news media suggest, can really rig the American elections, how could a small Bulgaria, or for that matter even France, trust that anybody but the Kremlin would decide who the next president would be? Russia’s power of attraction today is rooted not in its ideology but in its powerful image. If you believe Mr. Putin’s most zealous opponents, he is winning all the time.

Finally, in a globalized world, foreign interference in elections is unavoidable. Private citizens — and not only

governments — hack email accounts, spread fake news and conspiracy theories, and try to destroy the reputation of foreign leaders. Lone hackers and tiny rogue political groups can easily crash the servers of electoral commissions around the world. We are entering a period in which disruption is becoming an international contest, and many seek money and glory by demonstrating their ability to sow chaos beyond their borders. The Cold War narrative ignores this new reality because it tends to see any subversive activity as the work of states. A result is a growing risk of overreaction and conflict. In the world of mutually assured disruption, more than ever before what matters is the capacity to distinguish between state-inspired and state-run subversion.

So if we do not want 2017 to become, like 1917, a Russian year in history, the news media would be wise to shy away from grand, continentwide story lines that explain everything and look instead for the details that at least explain something. In the end, even in the age of global media, politics remains local.

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The Gathering Nuclear Storm

The Wall Street Journal, By MARK HELPRIN, Sept. 23, 2016 6:11 p.m. ET

Lulled to believe nuclear catastrophe died with the Cold War, America is blind to rising dragons.

Even should nuclear brinkmanship not result in Armageddon, it can lead to abject defeat and a complete reordering of the international system. The extraordinarily complicated and consequential management of American nuclear policy rests upon the shoulders of those we elevate to the highest offices. Unfortunately, President Obama's transparent hostility to America's foundational principles and defensive powers is coupled with a dim and faddish understanding of nuclear realities. His successor will be no less ill-equipped.

Hillary Clinton's robotic compulsion to power renders her immune to either respect for truth or clearheaded consideration of urgent problems. Theodore Roosevelt's secretary of state once said that he was "pure act" (meaning action). Hillary Clinton is "pure lie" (meaning lie), with whatever intellectual power she possesses hopelessly enslaved to reflexive deviousness.

Donald Trump, surprised that nuclear weapons are inappropriate to counterinsurgency, has a long history of irrepressible urges and tropisms. Rather like the crazy boy-emperors after the fall of the Roman Republic, he may have problems with impulse control—and an uncontrolled, ill-formed, perpetually fragmented mind.

None of these perhaps three worst people in the Western Hemisphere, and few of their deplorable underlings, are alive to the gravest danger. Which is neither Islamic State, terrorism, the imprisoned economy, nor even the erosion of our national character, though all are of crucial importance.

The gravest danger we face is fast-approaching nuclear instability. Many believe it is possible safely to arrive at nuclear zero. It is not. Enough warheads to bring any country to its knees can fit in a space volumetrically equivalent to a Manhattan studio apartment. Try to find that in the vastness of Russia, China, or Iran. Even ICBMs and their transporter-erector-launchers can easily be concealed in warehouses, tunnels and caves. Nuclear weapons age out, but, thanks to supercomputing, reliable replacements can be manufactured with only minor physical testing. Unaccounted fissile material sloshing around the world can, with admitted difficulty, be fashioned into weapons. And when rogue states such as North Korea and Iran build their bombs, our response has been either impotence or a ticket to ride.

Nor do nuclear reductions lead to increased safety. Quite apart from encouraging proliferation by enabling every medium power in the world to aim for nuclear parity with the critically reduced U.S. arsenal, reductions create instability. The fewer targets, the more possible a (counter-force) first strike to eliminate an enemy's retaliatory capacity. Nuclear stability depends, *inter alia*, upon deep reserves that make a successful first strike impossible to assure. The fewer warheads and the higher the ratio of warheads to delivery vehicles, the more dangerous and unstable.

Consider two nations, each with 10 warheads on each of 10 missiles. One's first strike with five warheads tasked per the other's missiles would leave the aggressor with an arsenal sufficient for a (counter-value) strike against the now disarmed opponent's cities. Our deterrent is not now as concentrated as in the illustration, but by placing up to two-thirds of our strategic warheads in just 14 submarines; consolidating bomber bases; and entertaining former Defense Secretary William Perry's recommendation to do away with the 450 missiles in the land-based leg of the Nuclear Triad, we are moving that way.

Supposedly salutary reductions are based upon an incorrect understanding of nuclear sufficiency: i.e., if X number of weapons is sufficient to inflict unacceptable costs upon an enemy, no more than X are needed. But we don't define sufficiency, the adversary does, and the definition varies according to culture; history; the temperament, sanity, or miscalculation of leadership; domestic politics; forms of government, and other factors, some unknown. For this reason, the much maligned concept of overkill is a major contributor to stability, in that, if we have it, an enemy is less likely to

calculate that we lack sufficiency. Further, if our forces are calibrated to sufficiency, then presumably the most minor degradation will render them insufficient.

Nor is it safe to mirror-image willingness to go nuclear. Every nuclear state has its own threshold, and one cannot assume that concessions in strategic forces will obviate nuclear use in response to conventional warfare, which was Soviet doctrine for decades and is a Russian predilection now.

Ballistic missile defense is opposed and starved on the assumption that it would shield one's territory after striking first, and would therefore tempt an enemy to strike before the shield was deployed. As its opponents assert, hermetic shielding is impossible, and if only 10 of 1,500 warheads were to hit American cities, the cost would be unacceptable. But no competent nuclear strategist ever believed that, other than protecting cities from accidental launch or rogue states, ballistic missile defense is anything but a means of protecting our retaliatory capacity, making a counter-force first strike of no use, and thus increasing stability.

In a nuclear world, unsentimental and often counterintuitive analysis is necessary. As the genie will not be forced back into the lamp, the heart of the matter is balance and deterrence. But this successful dynamic of 70 years is about to be destroyed. Those whom the French call our "responsibles" have addressed the nuclear calculus—in terms of sufficiency, control regimes, and foreign policy—only toward Russia, as if China, a nuclear power for decades, did not exist. While it is true that to begin with its nuclear arsenal was de minimis, in the past 15 years China has increased its land-based ICBMs by more than 300%, its sea-based by more than 400%. Depending upon the configuration of its missiles, China can rain up to several hundred warheads upon the U.S.

As we shrink our nuclear forces and fail to introduce new types, China is doing the opposite, increasing them numerically and forging ahead of us in various technologies (quantum communications, super computers, maneuverable hypersonic re-entry vehicles), some of which we have forsworn, such as road-mobile missiles, which in survivability and range put to shame our Minuteman IIIs.

Because China's nuclear weapons infrastructure is in part housed in 3,000 miles of tunnels opaque to American intelligence, we cannot know the exact velocity and extent of its buildup. Why does the Obama administration, worshipful of nuclear agreements, completely ignore the nuclear dimension of the world's fastest rising major power, with which the United States and allies engage in military jockeying almost every day on multiple fronts? Lulled to believe that nuclear catastrophe died with the Cold War, America is blind to rising dragons.

And then we have Russia, which ignores limitations the Obama administration strives to exceed. According to its own careless or defiant admissions, Russia cheats in virtually every area of nuclear weapons: deploying missiles that by treaty supposedly no longer exist; illegally converting anti-aircraft and ballistic missile defense systems to dual-capable nuclear strike; developing new types of nuclear cruise missiles for ships and aircraft; keeping more missiles on alert than allowed; and retaining battlefield tactical nukes.

Further, in the almost complete absence of its own "soft power," Russia frequently hints at nuclear first use. All this comports with historical Soviet/Russian doctrine and conduct; is an important element of Putinesque tactics for reclaiming the Near Abroad; and dovetails perfectly with Mr. Obama's advocacy of no first use, unreciprocated U.S. reductions and abandonment of nuclear modernization. Which in turn pair nicely with Donald Trump's declaration that he would defend NATO countries only if they made good on decades of burden-sharing delinquency.

Russia deploys about 150 more nuclear warheads than the U.S. Intensively modernizing, it finds ways to augment its totals via undisguised cheating. Bound by no numerical or qualitative limits, China speeds its strategic development. To cripple U.S. retaliatory capability, an enemy would have to destroy only four or five submarines at sea, two sub bases, half a dozen bomber bases, and 450 missile silos.

Russia has 49 attack submarines, China 65, with which to track and kill American nuclear missile subs under way. Were either to build or cheat to 5,000 warheads (the U.S. once had more than 30,000) and two-thirds reached their targets, four warheads could strike each aim point, with 2,000 left to hold hostage American cities and industry. China and Russia are far less dense and developed than the U.S., and it would take more strikes for us to hold them at risk than vice versa, a further indictment of reliance upon sufficiency calculations and symmetrical reductions.

Russia dreams publicly of its former hold on Eastern Europe and cannot but see opportunity in a disintegrating European Union and faltering NATO. China annexes the South China Sea and looks to South Korea, Japan and Australasia as future subordinates. Given the degradation of U.S. and allied conventional forces previously able to hold such ambitions in check, critical confrontations are bound to occur. When they do occur, and if without American reaction, China or Russia have continued to augment their strategic forces to the point of vast superiority where one or both consider a first strike feasible, we may see nuclear brinkmanship (or worse) in which the United States—startled from sleep and suddenly disabused of the myth of sufficiency—might have to capitulate, allowing totalitarian dictatorships to dominate the world.

Current trajectories point in exactly this direction, but in regard to such things Donald Trump hasn't the foggiest, and, frankly, Hillary Clinton, like the president, doesn't give a damn.

The way to avoid such a tragedy is to bring China into a nuclear control regime or answer its refusal with our own proportional increases and modernization. And to make sure that both our nuclear and conventional forces are strong, up-to-date, and survivable enough to deter the militant ambitions of the two great powers rising with daring vengeance from what they regard as the shame of their oppression.

Mr. Helprin, a senior fellow of the Claremont Institute, is the author of "Winter's Tale," "A Soldier of the Great War" and the forthcoming novel "Paris in the Present Tense."

Trump, Promising Arms Race, Could Set World on Uncertain Path

The New York Times, By MAX FISHER DEC. 23, 2016

President Vladimir V. Putin of Russia could loosen restrictions on the use of nuclear weapons in response to a new arms race. Credit Natalia Kolesnikova/Agence France-Presse — Getty Images

If President-elect Donald J. Trump meant what he said, then the world may one day look back to recall that the first superpower nuclear arms race since the Cold War was announced by two pajama-clad talk show hosts.

"Let it be an arms race. We will outmatch them at every pass and outlast them all," Mika Brzezinski, of MSNBC's "Morning Joe" program, said on Friday. She and her co-host, curled up in holiday-themed nightwear in front of a fake fireplace, said the quote was a statement from Mr. Trump, elaborating on a Twitter message on nuclear weapons.

Mr. Trump has a history of bluster and his declarations may turn out to be bluffs. But should he follow through on instigating a nuclear arms race, the consequences could be severe. Best estimates of likely Russian and Chinese responses offer a concerning guide. So do lessons from the Cold War arms race, which brought the world so close to the brink that once-hostile American and Soviet adversaries worked to reverse the competition they had once seen as essential.

What is the aim of an arms race?

Nuclear arms races are not usually something that states set out to provoke, but are pulled into against their wills.

In the Cold War, the United States and the Soviet Union saw themselves as reacting to one another, straining to maintain a strategic balance that would deter war or at least make it survivable.

Winston Churchill remarked in 1954 that more warheads could accomplish little more than to "make the rubble bounce."

But this quote reflects a long-held misunderstanding: that the arms race was a simple matter of accruing warheads.

In fact, it was far more dangerous, with ever-growing stockpiles merely reflecting complex tit-for-tat advances. For instance, one country might develop weapons that could deliver warheads more rapidly, which would require the other to shorten its response time and build redundant, retaliatory weapons.

While "arms race" describes the sets of policies that helped make the Cold War so dangerous, arms racing was not in itself policy. Rather, it was a much-lamented — and much-feared — byproduct of American and Soviet aims. Leaders on both sides wanted to avoid losing, but none saw the race as desirable.

The exception, Ronald Reagan, entered office in 1981 determined to win the Cold War in part by outstripping the Soviet Union on nuclear arms. But after a few years of tightening response times and near-miss incidents, he became the most enthusiastic proponent of nuclear disarmament to occupy the Oval Office.

Though some Americans believe the arms race won the Cold War, as Mr. Reagan had initially hoped, the two sides ended their competition willingly — and a few years before internal political and economic forces would pull down the Soviet Union from within.

Mr. Reagan and the Soviet leader, Mikhail Gorbachev, sought total disarmament at a 1986 summit meeting. Unable to agree on terms, they settled for an ongoing drawdown of nuclear forces, reversing the arms race.

Such reductions have continued since, codified in treaties such as the 2010 New Start agreement, which Mr. Trump's policy would likely undo.

In his Twitter post on Thursday announcing that policy, Mr. Trump said his goal was that "the world comes to its senses regarding nukes."

It is not clear what that means. But whatever his intention, analysts say that Mr. Trump's stated desire to provoke an arms race does have a foreseeable range of outcomes.

Russia: Trading safety for parity

The two countries most likely to respond are Russia, whose nuclear arsenal is comparable to that of the United States, and China, which has a far smaller program.

Though each has a slightly different goal, both design their programs to counterbalance the United States, and will therefore calibrate to keep pace with any American advances.

But analysts warn that, in part because the United States is already so much more powerful in conventional terms, Russia and China may feel forced to take actions that are destabilizing and put all parties at risk.

Since the end of the Cold War, Moscow has seen nuclear parity with the United States as its last — perhaps only — guarantee of survival against a far stronger Western alliance it perceives as an existential threat. Falling behind would, in Moscow's view, invite Russia's destruction.

Though Russia's economy is a fraction the size of America's, it has kept up. Should it find parity too costly, Moscow would likely compensate by expending another kind of currency: its willingness to accept nuclear risk.

This would be aimed at strengthening Russian deterrence against any American threat. For instance, Russia might deploy more nuclear-capable Iskander missiles to Kaliningrad, a Russian enclave located between Poland and Lithuania. Such missiles can reach European capitals in a matter of minutes and, because they are fired from special vehicles, can be difficult to knock out.

Vladimir V. Putin, the Russian president, could also loosen restrictions on the use of nuclear weapons. Some analysts already believe that Russian military doctrine allows for the use of a single "de-escalatory" nuclear strike, in case of a conventional war, to force the other side to stand down. Such policies put a greater onus on the United States to reduce risk, compensating for any relative Russian weakness.

China: 'It's a scary new world'

Beijing's nuclear aims are less ambitious: to retain just enough ability that, should the United States attack first, it can fire a few nuclear weapons in retaliation.

Should Mr. Trump advance American nuclear abilities — even if this is aimed principally at Russia — China will fear that an American first strike could wipe out its warheads. This would render China's nuclear deterrent effectively obsolete, all but forcing it to compensate.

Vipin Narang, a nuclear weapons expert at the Massachusetts Institute of Technology, said China would build up its own abilities, but worried that it would seek a quicker fix as well.

China might preload nuclear warheads onto missiles to shorten its response time, Mr. Narang suggested. Or it could hide missiles in hardened locations, like tunnels. It might consider adopting Pakistan's practice of putting warheads in unmarked vans and driving them around the country, in a never-ending road trip, to keep them safe from attack.

China could also decide to abandon its policy against the first use of nuclear weapons in any conflict "because they could not afford to go second," Mr. Narang said.

Mr. Narang emphasized that such steps would increase the risk of an accident or miscalculation that, while remote, could be catastrophic.

Of Mr. Trump's intentions and their likely impact in Beijing and Moscow, Mr. Narang said, "It's a scary new world if he's serious about, and trying to trigger, an arms race with either or both."

A game with no victory

Paul C. Warnke, a senior Pentagon official in the Cold War's early years, concluded that their mutual buildups were less like a race than two runners on adjacent treadmills. "The only victory the arms race has to offer," he wrote in 1975, was to "be first off the treadmill."

Mr. Warnke's view was controversial at the time, but later became accepted even by many dedicated Cold Warriors. The early 1980s had seen near misses that had brought the world intolerably close to the edge.

In 1983, for instance, a Soviet early-warning system detected an incoming American nuclear attack. It happened to be a moment of high tension in which the Kremlin had feared a pre-emptive strike.

Because of missile advances that had come as part of the arms race, the Soviets had only 23 minutes to respond before the missiles would land — not enough time to double-check equipment, much less negotiate with Washington. The arms race also dictated that the Soviet Union respond with overwhelming retaliation against the United States, to quickly neutralize any further threat.

The Soviet officer in charge of the early-warning station could see no evidence of a false alarm, but told his superiors that it was. His guess, proved correct, may have saved the world.

Though the episode would not become public for years, Mr. Reagan wrote in his memoirs that another war scare, which

occurred that same month when Soviet forces shot down a South Korean airliner that had wandered into Soviet airspace, “demonstrated how close the world had come to the precipice and how much we needed nuclear arms control.”

Mr. Reagan principally turned against the arms race because of its dangers, but others came to oppose it for the simple reason that, after decades and billions or perhaps trillions of dollars, it had failed to accomplish victory.

“Building nukes to get others to stop historically has had the same effect as telling everyone in an email storm to cease using ‘Reply All,’ ” Joshua H. Pollack, an expert at the James Martin Center for Nonproliferation Studies, joked on Twitter.

Mr. Pollack added, “There is no last, winning move when it comes to arms racing.”

The first response came from Cheryl Rofer, a retired nuclear scientist at the Los Alamos National Research Laboratory: “But there is a last move.”

Why It’s Safe to Scrap America’s ICBMs

The New York Times, By WILLIAM J. PERRY, SEPT. 30, 2016

In recent years, Russia and the United States have started rebuilding their Cold War nuclear arsenals, putting the world on the threshold of a dangerous new arms race. But we don’t have to repeat the perilous drama of the 20th century. We can maintain our country’s strength and security and still do away with the worst of the Cold War weapons.

The American plan to rebuild and maintain our nuclear force is needlessly oversize and expensive, expected to cost about \$1 trillion over the next three decades. This would crowd out the funding needed to sustain the competitive edge of our conventional forces and to build the capacities needed to deal with terrorism and cyberattacks.

The good news is that the United States can downsize its plans, save tens of billions of dollars, and still maintain a robust nuclear arsenal.

First and foremost, the United States can safely phase out its land-based intercontinental ballistic missile (ICBM) force, a key facet of Cold War nuclear policy. Retiring the ICBMs would save considerable costs, but it isn’t only budgets that would benefit. These missiles are some of the most dangerous weapons in the world. They could even trigger an accidental nuclear war.

If our sensors indicate that enemy missiles are en route to the United States, the president would have to consider launching ICBMs before the enemy missiles could destroy them; once they are launched, they cannot be recalled. The president would have less than 30 minutes to make that terrible decision.

This is not an academic concern. While the probability of an accidental launch is low, human and machine errors do occur. I experienced a false alarm nearly 40 years ago, when I was under secretary of defense for research and engineering. I was awakened in the middle of the night and told that some Defense Department computers were showing 200 ICBMs on the way from the Soviet Union. For one horrifying moment I thought it was the end of civilization. Then the general on the phone explained that it was a false alarm. He was calling to see if I could help him determine what had gone wrong with the computer.

During the Cold War, the United States relied on ICBMs because they provided accuracy that was not then achievable by submarine-launched missiles or bombers. They also provided an insurance policy in case America’s nuclear submarine force was disabled. That’s not necessary anymore. Today, the United States’ submarine and bomber forces are highly accurate, and we have enough confidence in their security that we do not need an additional insurance policy — especially one that is so expensive and open to error.

As part of the updates to America’s nuclear arsenal, the government is also planning to replace nuclear-armed submarines and bombers. If we assume that the Defense Department is critically analyzing the number of systems needed, this makes far more sense than replacing ICBMs. The submarine force alone is sufficient to deter our enemies and will be for the foreseeable future. But as technology advances, we have to recognize the possibility of new threats to submarines, especially cyberattack and detection by swarms of drones. The new submarine program should put a special emphasis on improvements to deal with these potential threats, assuring the survivability of the fleet for decades to come.

The new stealth bomber will provide a backup to submarines. This is not likely to be necessary, but the bomber force is a good insurance policy. The new bomber would be capable of carrying out either conventional or nuclear missions. But the development of new air-launched nuclear cruise missiles, which has been proposed, is unnecessary and destabilizing. We can maintain an effective bomber force without a nuclear cruise missile.

Instead of overinvesting in nuclear weapons and encouraging a new arms race, the United States should build only the levels needed for deterrence. We should encourage Russia to do the same. But even if it does not, our levels of nuclear forces should be determined by what we actually need, not by a misguided desire to match Moscow missile for missile.

If Russia decides to build more than it needs, its economy will suffer, just as during the Cold War.

The Obama administration says it is looking for ways to reduce nuclear dangers. If this examination leads to a reduction in planned nuclear programs and costs, it would be consistent with the Democratic Party's new platform, which states that the party "will work to reduce excessive spending on nuclear weapons-related programs that are projected to cost \$1 trillion over the next 30 years."

In addition, 10 senators recently wrote to the president, calling on the administration to "scale back plans to construct unneeded new nuclear weapons and delivery systems." A similar letter from House members warns that the nuclear plan may be "neither affordable, executable, nor advisable."

Russia and the United States have already been through one nuclear arms race. We spent trillions of dollars and took incredible risks in a misguided quest for security. I had a front-row seat to this. Once was enough. This time, we must show wisdom and restraint. Indeed, Washington and Moscow both stand to benefit by scaling back new programs before it is too late. There is only one way to win an arms race: Refuse to run.

William J. Perry was secretary of defense from 1994 to 1997. His recent memoir is "My Journey at the Nuclear Brink."

Evading the Constitution to Ban Nuclear Tests

The Wall Street Journal, By JON KYL and DOUGLAS J. FEITH, Aug. 15, 2016

The safety and reliability of U.S. nuclear weapons cannot be ensured forever without tests.

Barack Obama has done more than any predecessor to increase presidential power and diminish Congress's constitutional role. He gave the Senate virtually no voice in the Iran nuclear deal and he now plans to undercut the Senate's treaty-making authority even further. The subject this time is the Comprehensive Test Ban Treaty, a 1996 agreement to ban explosive testing of nuclear weapons.

The Senate has already considered and rejected the CTBT. To circumvent Congress, Mr. Obama wants the United Nations to declare nuclear tests illegal. This is an affront to the Constitution and bad nuclear policy.

The United States has not done an explosive nuclear test since 1992. U.S. officials rely on computer simulations to ensure nuclear-weapon safety and reliability. The no-test policy was adopted as a nuclear nonproliferation gesture, in hopes of persuading other countries to similarly restrain themselves. Yet experts worry that the safety and reliability of U.S. nuclear weapons cannot be ensured forever without tests, for there are uncertainties in the relevant chemistry and physics. At some point computer simulations may not provide enough confidence.

Then-Secretary of Defense Robert Gates noted in a 2008 speech that U.S. nuclear weapons "were designed on the assumption of a limited shelf life." Because "sensitive parts do not last forever," he said, the U.S. re-engineers them to extend their lifespan, but "with every adjustment we move further away from the original design that was successfully tested when the weapon was first fielded." At some point, he warned, it will become "impossible to keep extending the life of our arsenal, especially in light of our testing moratorium."

Because the U.S. no-test policy is a unilateral measure, any president can change it in the future. If America became a CTBT party, however, that policy would harden into a permanent international legal obligation to refrain from testing. Negotiated in the 1990s, the CTBT won approval from the U.N. General Assembly in 1996 and President Bill Clinton promptly signed it. He then asked the Senate to ratify.

Senate opponents of the CTBT highlighted a number of flaws. Among the gravest was lack of agreement on what the treaty prohibits. The bipartisan 2009 Perry-Schlesinger commission report summarized the opponents' case: "The treaty remarkably does not define a nuclear test. In practice this allows different interpretations of its prohibitions and asymmetrical restrictions. The strict U.S. interpretation precludes tests that produce nuclear yield. However, other countries with different interpretations could conduct [low-yield] tests Apparently Russia and possibly China are conducting low-yield tests."

Senators also complained that the CTBT isn't verifiable or enforceable: The Russians, Chinese or others could violate it and the U.S. would not necessarily be able to detect, let alone prove, the violation. Taking effective action to compel compliance would be difficult or even impossible.

Allies and partners around the world have positioned themselves for decades under America's so-called nuclear umbrella. Rather than create their own nuclear arsenals, they rely on America for their security. This makes America—and the world—safer than if there were numerous nuclear states.

Imagine, however, the following scenario: Technical problems develop in U.S. warheads and responsible scientists say that tests are needed to confirm reliability. If America were legally bound not to test, that would undermine faith in its nuclear umbrella and other countries might decide they need their own nuclear weapons. The CTBT could thus aggravate the very problem of nuclear proliferation that it was created to help solve.

These concerns led the Senate in 1999 to reject the CTBT. The rejection was not close. Instead of receiving the necessary two-thirds majority (67 votes) for approval, the CTBT won 48 votes, while 51 senators voted against it.

Despite this, President Obama wants to make U.S. nuclear tests illegal, and an unprecedented maneuver in the U.N. would allow him to shut the Senate out. Mr. Obama plans to propose a U.N. Security Council resolution declaring that any nuclear test would be an action inconsistent with the CTBT's "object and purpose." Under international law, this would make the ban applicable to countries that are merely treaty signatories—that is, those that have signed but not ratified. The U.S. remains in that category even though the Senate voted the treaty down.

Mr. Obama wants to attach the label "illegal" to nuclear testing without the Senate's advice and consent. This is the way progressive transnational lawyers use courts and multilateral organizations to circumvent legislatures.

A future U.S. president could, in effect, unsign the CTBT, but that doesn't make it proper for Mr. Obama to abuse international legal mechanisms to inflate his executive power at the expense of the Senate. In this particular presidential election season, it's especially important to show respect, not contempt, for the Constitution.

Mr. Kyl served three terms as a U.S. senator from Arizona. Mr. Feith, a senior fellow at Hudson Institute, was undersecretary of defense for policy in the George W. Bush administration.

Donald Trump Calls for Expansion of Nuclear-Weapon Capabilities

The Wall Street Journal, By BEN KESLING and PAUL SONNE, Dec. 22, 2016

President-elect, in social-media post without specifics, shows support for strengthening U.S. nuclear arsenal

WASHINGTON—President-elect Donald Trump said in a cryptic tweet on Thursday that he supports an expansion of U.S. nuclear-weapon capabilities, the latest social-media missive to baffle experts and ratchet up tensions with the international community.

The tweet made it clear that Mr. Trump is an advocate of a strong U.S. nuclear arsenal, but left unanswered whether he wants to greatly accelerate a program begun under President Barack Obama to update the arsenal. A spokesman for Mr. Trump later elaborated on the tweet without fully clarifying the president-elect's position.

"The United States must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes," said a tweet from Mr. Trump's official Twitter account, sent around noon Thursday.

Donald J. Trump ✓ @realDonaldTrump

The United States must greatly strengthen and expand its nuclear capability until such time as the world comes to its senses regarding nukes

11:50 AM - 22 Dec 2016

Mr. Obama has announced plans in 2010 estimated to cost nearly \$1 trillion over 30 years to modernize and upgrade the country's nuclear arsenal. As a seeming about-face for a president who came into office seeking arms control efforts, Mr. Obama made the nuclear commitment during an effort to win congressional passage of his New Start arms control deal with Russia.

The president-elect's tweet left some doubt as to whether he wants to kick off a new arms race or if he just agrees with the efforts already under way.

It came a day after Mr. Trump met with a number of top Pentagon officials, including Lt. Gen. Jack Weinstein, U.S. Air Force Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration, who regularly stresses the importance of seeing through the planned update to a U.S. nuclear program that hasn't been modernized since the 1980s.

The program under way—which Mr. Obama approved with pressure from Republican lawmakers on Capitol Hill—modernizes all three legs of the nuclear triad with new submarines, bombers and intercontinental ballistic missiles, as well as new nuclear-capable cruise missiles.

Russian President Vladimir Putin also called for his country to strengthen its nuclear-combat potential during a meeting of the Russian Defense Ministry board on Thursday according to Interfax news agency. He also said it is important to re-arm the Russian army and navy and to keep developing all aspects of the Russian military.

Russia is in the midst of its own nuclear-arsenal modernization that includes new delivery systems such as submarines and intercontinental ballistic missiles, in part because many of its Soviet-era capabilities have been operating too long without updates.

Though they are updating their delivery systems and in some cases the weapons themselves, the U.S. and Russia are both bound by limits on the number of nuclear warheads they can deploy, owing to the New Start treaty, which Mr. Obama signed in 2010 and expires in 2021.

“This is how arms races begin: with a battle of words,” said Joe Cirincione, president of Ploughshares Fund, a nuclear nonproliferation advocacy group, in a statement. “This could be the end of the arms control process.”

Mr. Trump’s campaign released a statement hours after the tweet.

“President-elect Trump was referring to the threat of nuclear proliferation and the critical need to prevent it—particularly to and among terrorist organizations and unstable and rogue regimes. He has also emphasized the need to improve and modernize our deterrent capability as a vital way to pursue peace through strength,” said Jason Miller, a spokesman for Mr. Trump in a statement.

Mr. Trump’s message boosted stock prices of companies linked to the planned nuclear modernization, including nuclear submarine makers General Dynamics Corp. and Huntington Ingalls Industries Inc., reactor builder BWX Technologies Inc. and rocket-motor maker Aerojet Rocketdyne Holdings Inc.

Which Countries Have Nuclear Weapons and How Big Their Arsenals Are

The New YorkTimes, By KIERSTEN SCHMIDT and BILL MARSH DEC. 23, 2016

Nine countries are thought to possess nuclear weapons. Israel has not officially acknowledged its program, but the Israeli arsenal is widely understood to consist of about 80 weapons. RELATED ARTICLE

Countries with nuclear weapons



By The New York Times |Source: Federation of American Scientists

Arming and Disarming

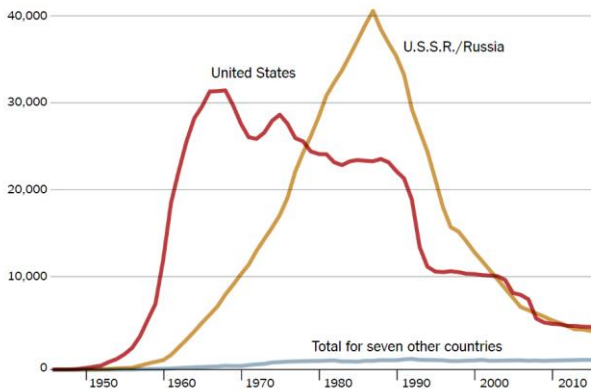
The United States and Russian arsenals are greatly reduced from their Cold War peaks, but the superpowers each retain thousands of weapons. The combined arsenals of the other seven nuclear nations are a small fraction of the size of the American and Russian stockpiles.

Estimated number of nuclear weapons, 1945-2014

By The New York Times |Source: Federation of American Scientists

Comparing Nuclear Arsenals

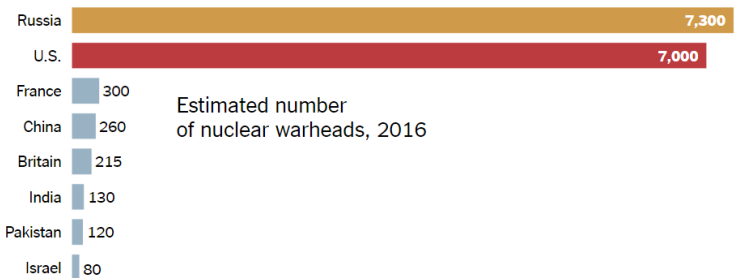
Estimated number of nuclear weapons, 1945-2014



By The New York Times | Source: Federation of American Scientists

Russia and the United States are believed to have 7,000 weapons each, or more. Only about a quarter of these are deployed, and most of the others are in reserve or set aside to be dismantled. North Korea's arsenal is cloaked in secrecy, but experts believe it has fewer than 10 weapons.

Estimated number of nuclear warheads, 2016



By The New York Times |Source: Federation of American Scientists