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Super silos

A few weeks ago, American media reported on a series of small nuclear tests in Nevada that had been kept secret by the U.S. government. No one managed to find out what these tests were about and the story quickly faded away.

I have uncovered the answer and it is very exciting news indeed. Buried deep under the desert, models of new steel and concrete missile silos were tested against the blast, heat and electromagnetic pulse effects of thermonuclear explosions.

If this sounds mundane, bear with me for the results could well alter the present nuclear imbalance between the U.S. and Russia, leading us to a new era of stability.

Since U.S. policy rejects first use of nuclear weapons, its land-based missiles were housed in underground concrete silos designed to ride out a Soviet first strike and then fire back. This plan was viable until recent advances in Russian missile accuracy placed America's 1,000 Minutemen missiles in grave jeopardy.

Most military experts now believe that Russia's improved accuracy missiles, including the large SS-18 that can carry either a monster 20-megaton warhead or 10 multiple warheads, can destroy America's land-based missiles in a surprise attack. The remaining sea-based U.S. missiles lack the accuracy and power to destroy most "hard" Russian targets.

America responded to this clear threat by attempting to develop a host of more secure basing modes: Mobile, airborne, buried in caverns or emplaced in mesas. None worked and the new MX heavy missile is being placed in vulnerable, existing silos.

Now the U.S. is back at work trying to redesign a small, mobile missile, the "Midgetman," but this system has its own drawbacks and is still in the early design phase. Just as a near-term solution appeared impossible, along came the new silos.

Steel & concrete sandwich

These silos, made from sandwiched layers of steel and concrete buffered by liquid flotation systems and shock absorbers, are capable of withstanding pressures of over 45,000 lbs. per square inch (psi) — nine times more than existing U.S. silos. In 1986, U.S. engineers will test even harder silos that can withstand 100,000 psi.

Such abstruse engineering terms are vitally important in the deadly calculus of nuclear war. U.S. silos 10 or 20 times harder than existing versions mean that Russia must target at least two 20-megaton warheads against each one in order to have an acceptable chance of eliminating the U.S. missile force in a first strike.

But Russia only has 308 SS-18s. Her 550 S-11s and 330 SS-19s lack either the accuracy or the striking power to ensure near total destruction of the Minuteman and MX missiles in new, super-hardened silos.

Russia would have to abrogate the current agreement limiting the numbers of missiles and build more expensive SS-18s or develop earth-penetrator warheads that could dig out the U.S. silos. The heavy earth-penetrators mean reduced explosive power in each missile and thus insufficient numbers to assure a first strike.

More bad news for the Russians has come from other recent U.S. tests, suggesting that the diameter of craters caused by nuclear explosions may be 60% smaller than previously estimated. This is very important because silos within the crater are destroyed or thrown off kilter. Smaller craters imply more surviving silos and the need to target twice as many missiles on a given silo.

Neutralizing Soviet threat

Building a new generation of super-hardened silos closes the "window of vulnerability" so feared by U.S. military planners. Russia's overwhelming lead in heavy, land-based missiles will no longer threaten to disarm the U.S. in a surprise attack. Having to launch on the warning of an attack — rather than seeing U.S. missiles destroyed in their silos — will be unnecessary.

The Russians are, of course, already developing their own super-hard silos, but this only serves to further reduce the threat of nuclear war. Anything that lessens the probability of a successful, decapitating first strike leads to increased stability.

Soviet and U.S. military planners now have to decide whether to go ahead with their new, small mobile missiles or to rely on reinforced silos. Military men in Washington and Moscow will likely press for more offensive weapons, warning ominously about the "Maginot Line" mentality of relying on concrete rather than on more warheads.

But I believe that the super-hardened silos, as unexciting as they may sound, represent the first genuine opportunity of breaking out of the vicious cycle of nuclear arms development. Increased security for each side's strategic missiles will do more to avert the horror of nuclear war than all the platitudes of our politicians.

My estimate is that both Washington and Moscow will harden their silos and, hopefully, forbear developing earth-penetrator warheads. If either party does go ahead with these warheads, the nuclear race will enter a new and very dangerous stage.

Safer homes for U.S. and Russian missiles will not, however, mean less defence spending. Any money saved on missiles will surely be allocated to the military's hot growth industry — space weapons. But at least we, who are among the targets of U.S. and Soviet missiles, may be able to rest a great deal easier.

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