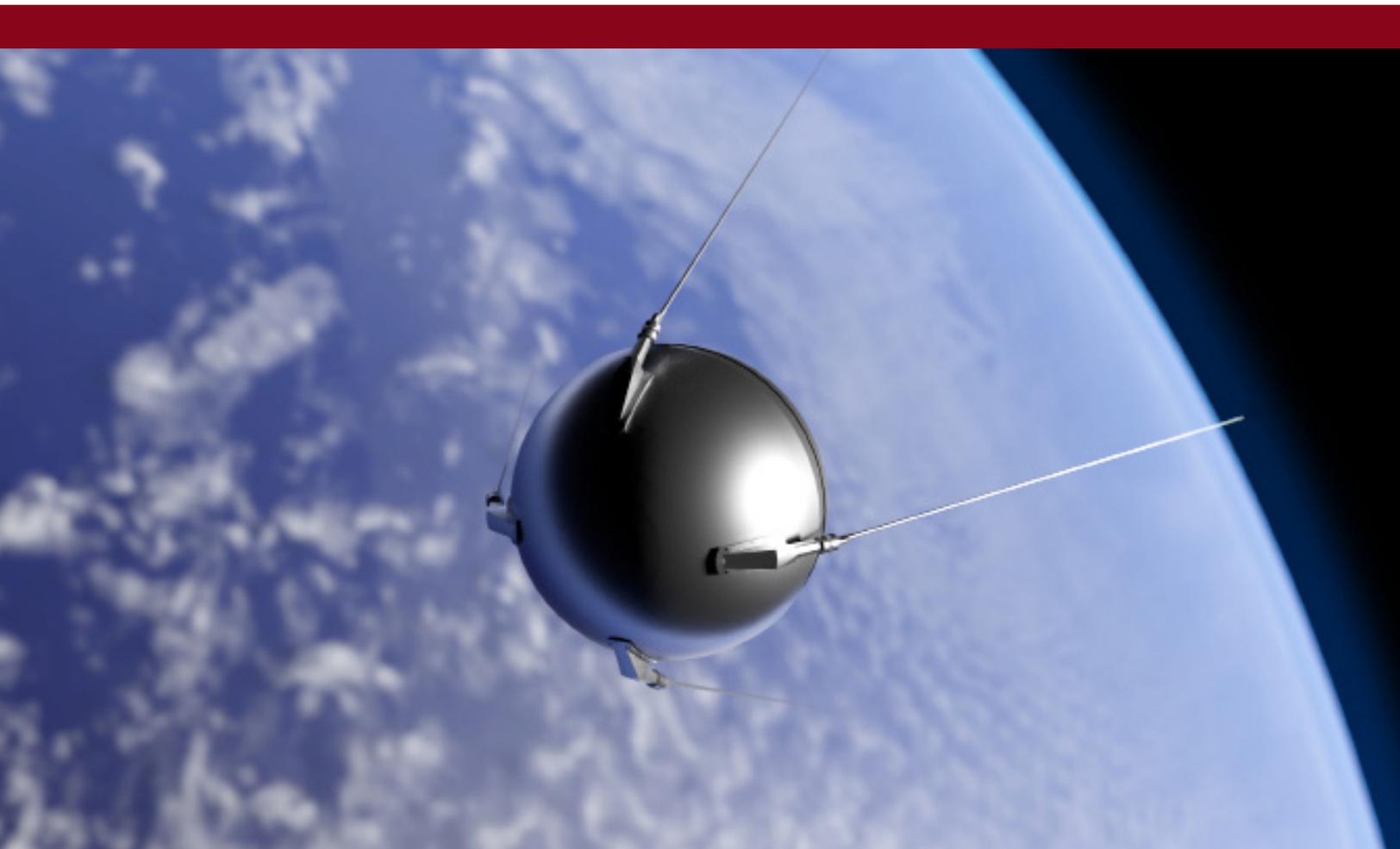


# We are far beyond a “Sputnik moment”

How revolutionary technological existential threats could overturn the balance of power and defeat nuclear deterrence

BY DR. PETER PRY



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“Close attention is being paid to the development of the so-called weapons based on new physical principles.”—Vladimir Putin

## Sputnik

In 1957, I was only three years old, but distinctly remember standing in the front yard of my grandmother’s house, with my parents, brothers, and cousins, all of us gazing at the night sky, fascinated and terrified as the world’s first satellite passed overhead among the stars, the USSR’s Sputnik.

Today it is still controversial whether Sputnik could be seen with the naked eye. Some argue what was seen was the large booster that orbited both the little satellite and itself, following Sputnik across the sky.

Sputnik is unimpressive by today’s standards, just a small polished metal sphere, 23 inches in diameter, carrying batteries for radio transmissions from four projecting antennae. It orbited four months before burning-up on re-entry.

Nonetheless, in those much wiser days, the Eisenhower administration and congressional Democrats and Republicans alike correctly interpreted Sputnik as a national security emergency. U.S. political and military leaders, most of whom had witnessed or survived the technological “wonder weapons” of World War II, immediately understood that Sputnik foreshadowed a military revolution of intercontinental ballistic missiles (ICBMs) that could deliver against the United States a nuclear Pearl Harbor.

The entire nation united behind crash programs to catch-up with the Russians in space and missile technology, including massive investment in education and expansion of colleges and universities to produce scientists, engineers, and mathematicians, while families were encouraged to build nuclear bomb shelters, and children, including me, practiced “duck and cover” exercises in school.

John F. Kennedy ran for president promising to close the “missile gap” with Russia, for which he would be mocked by future liberal historians and anti-nuclear

activists, as the USSR had only 4 ICBMs in 1961. But Kennedy was right that Nikita Khrushchev was, in the Soviet dictator's words "churning out missiles like sausages"—700 IRBMs and MRBMs to target NATO Europe, a vast superiority over the U.S. in that theater, where Moscow thought a nuclear World War III would be fought.

But President Kennedy built a vast superiority over the USSR in ICBMs (170) by the October 1962 Cuban missile crisis, which decisive advantage in nuclear firepower, along with superiority in strategic bombers and missile submarines, enabled him to prevail peacefully, averting a global thermonuclear holocaust.

Fast forward to today.

## **Beyond Sputnik**

In August 2021, China tested a space superweapon, demonstrating a Fractional Orbital Bombardment System (FOBS) that orbited around the Earth a Hypersonic Glide Vehicle (HGV), that de-orbited to simulate an attack on a terrestrial target. It is the first time any nation has combined these technologies, which have revolutionary implications, enabling EMP, nuclear, or possibly even conventional attacks, against any target on Earth, in 45 minutes or less, with little or no warning.

U.S. intelligence and defense officials were, again, taken by surprise. "We had no idea China could do this," according to a senior intelligence officer, reflecting the views of a shocked intelligence and defense community in the U.S. and worldwide, as reported by Financial Times that broke the story on 16 October 2021, coincidentally during the 59th

anniversary of the 1962 Cuban missile crisis.

Defense and intelligence community professionals almost universally acknowledge China's test of the FOBS/HGV combination is a major threat, potentially a "game changer" with even Joint Chiefs of Staff (JCS) Chairman Mark Milley likening the test to Sputnik. Yet Sputnik merely foreshadowed a new era in military technology, whereas the FOBS/HGV is an actual revolutionary space weapon.

As former senior defense official, Dr. Mark Schneider warns: "Another important aspect of such a weapon is its potential to launch a surprise nuclear EMP attack. Such an attack would be devastating. This is now a demonstrated capability that does not require the use of an ICBM, an SLBM, or any other type of ballistic missile. This has critical implications for attack warning." ("China Tests an Orbital Hypersonic Nuclear-Capable Missile" RealClearDefense 30 October 2021).

As I warned in an earlier article: "A FOBS warhead could make a surprise nuclear electromagnetic pulse (EMP) attack, paralyzing U.S. electric grids, communications, and potentially military command-control-communications-intelligence (C3I) and U.S. nuclear retaliatory forces—thereby winning a nuclear war with a single blow." ("China's New Superweapon Exploits U.S. Blind Spot" Center for Security Policy 20 October 2021).

China's space superweapon is the latest in a long series of technological surprises that have profound implications for U.S. and global security. For example:

--Hypersonic Glide Vehicles (HGVs): Russia and China are far ahead of the U.S. in development and deployment of Hypersonic Glide Vehicles that can fly below radar at supersonic speeds (Mach 5-25),

can outmaneuver missile defenses, potentially have pinpoint accuracy, and are ideally suited for surprise attack. Russia is developing nuclear-armed HGVs for delivery by a wide variety of means, including ICBMs, aircraft, ships, submarines, and by FOBS. China has conducted “hundreds” of HGV tests versus only 9 tests by the U.S., according to JCS Vice Chairman, General John Hyten. (“Senior U.S. General Warns China’s Military Progress Is ‘Stunning’” CNN 28 October 2021).

--Super-EMP: Russia, China, and probably North Korea have developed Super-EMP weapons deliverable by satellite, missile, or HGV, that can generate extraordinarily powerful EMP fields, 100 kilovolts/meter or more, greatly exceeding the U.S. military EMP hardening standard (50 kilovolts/meter). China is developing a non-nuclear EMP weapon for delivery by HGVs. Warns the blue-ribbon Congressional EMP Commission: “Foreign adversaries may aptly consider nuclear EMP attack a weapon that can gravely damage the U.S. by striking at its technological Achilles Heel, without having to confront the U.S. military.” (Assessing the Threat from Electromagnetic Pulse 2017. All the unclassified EMP Commission reports are at [www.firstempcommission.org](http://www.firstempcommission.org).)

--First-Strike ICBMs: Although MIRVed ICBMs, carrying multiple warheads capable of destroying multiple targets, are not new technologically, the U.S. decision to de-MIRV its ICBMs while reducing to 400 ICBM silos under New START has created an unprecedented opportunity for a successful first strike by Russia or China. China’s deployment of its DF-41 ICBMs in large numbers is a technological and strategic surprise. The DF-41 has yield-accuracy combination to achieve over 90% Single-Shot-Kill-Probability against U.S. ICBM silos, each DF-41

having 10 warheads, each capable of 90% SSPK against a U.S. silo. So one DF-41 could destroy 10 U.S. Minuteman III ICBMs. China’s surprise rapid expansion of its ICBM force to perhaps 400 DF-41s in a few years would give China 4,000 warheads on the DF-41 alone, a 10-to-1 advantage in ICBM warheads and nearly 3-to-1 advantage over all U.S. strategic nuclear weapons on all ICBMs, SLBMs, and bombers. Russia’s equally ambitious strategic nuclear programs, combined with likely cheating on New START, will give Moscow an even greater advantage and capabilities to realize the Russian General Staff’s nuclear war-winning strategy.

--Artificial Intelligence (AI): Russia reportedly is incorporating AI to improve the capabilities of both defensive anti-missile/anti-air systems and offensive nuclear systems. Russia’s Poseidon is an Artificially Intelligent nuclear-powered “torpedo” or fully-autonomous submarine, armed with the world’s most powerful nuclear warhead (100 megatons). If used to hunt and kill U.S. missile submarines on patrol, Poseidon alone would be a “game changer” by threatening the most survivable U.S. nuclear deterrent, and would make any U.S. plans to reduce the Triad to a Monad of missile submarines suicidal. China and Russia will both probably harness AI to make the oceans “transparent” so U.S. missile submarines can be located and destroyed by multiple means. China also reportedly is using AI to further improve the accuracy of Hypersonic Glide Vehicles. AI could also be the key to a revolutionary new way of warfare focused on cyber-attacking electric grids and critical infrastructures (see Blackout Warfare 2021) that would make traditional warfare obsolete. The Defense Department’s first software chief, Nicolas Chaillon, recently quit because allegedly the U.S. has already lost the AI war with China: “We have no competing fighting chance against China in 15 to 20

years. Right now, it is already a done deal; it is already over.” (“U.S. Has Already Lost AI Fight To China, Say Ex-Pentagon Software Chief” Financial Times 10 October 2021).

So the U.S. is facing multiple revolutionary technological existential threats that could overturn the balance of strategic power, defeat nuclear deterrence, and tempt China or Russia or both to launch World War III. We are far beyond a “Sputnik moment”—yet Washington is divided on how, and even on whether, to respond.

## The Antinuclear-Media Complex

Washington is not reacting intelligently and prudently to the current crisis by mobilizing to dominate the technological future, as it did in 1957. Today, Washington is deeply divided and polarized between:

--The defense and intelligence communities, independent analysts, and their usually conservative political supporters, often derided by opponents as the “Military-Industrial Complex” versus;

--The antinuclear and arms control communities, academics, usually leftist politicians, and biased mass media, what might be called the “Antinuclear-Media Complex.”

Unfortunately, the latter is in the driver’s seat in Washington, in the Biden administration, in Congress, in the Democratic Party, and is being over-represented out of all proportion to their numbers in the general population because of a sympathetic media megaphone.

Members of the “Antinuclear-Media Complex”

typically lack experience working in the defense or intelligence communities, are often ignorant of the issues on which they opine, make many errors of fact and analysis, propound Russian and Chinese propaganda, and not infrequently belong to organizations originally founded as fronts for disinformation by Soviet intelligence agencies—yet their opinions dominate the press. The “Antinuclear-Media Complex” is always quick with their non-expert opinions to dismiss, low-ball, or belittle every new nuclear threat from China, Russia, and North Korea, and to oppose every U.S. nuclear modernization program.

For example, STRATCOM Commander, Admiral Charles Richard, gets far less ink than the Middlebury Institute’s Jeffrey Lewis, a fact which may prove fatal to the nation. Lewis once laughingly mocked former Director of Central Intelligence R. James Woolsey for correctly warning National Public Radio listeners that North Korea could make an EMP attack on the U.S. NPR, responding to complaints about Lewis’ unprofessionalism and erroneous dismissal of Woolsey, launched a questionable investigation that ignored the EMP Commission and the evidence proving Woolsey right, NPR in effect lying to its listeners about the North Korean EMP threat.

Moreover:

--Kyle Mizukami, not an expert on EMP or FOBS, gets to misinform the public about both in the pages of Popular Science, writing on October 20: “If China does deploy a FOBS system, it changes little for the security of the United States...Nuclear deterrence still means any state foolish enough to launch a surprise attack on the U.S. would commit national suicide.” Yet the whole point of the FOBS is to defeat

U.S. nuclear deterrence, including by a surprise EMP attack that could paralyze U.S. retaliatory forces.

--David Sanger in the New York Times suggests Beijing's FOBS/HGV space superweapon is propaganda from the U.S. Military-Industrial Complex that wants a New Cold War instead of cooperation with Communist China on Covid-19 and Climate Change: "Governments that plunge into a Cold War mindset can exaggerate every conflict, convinced that they are part of a larger struggle. They can miss opportunities for cooperation, as the United States and China did in battling Covid-19, and may yet on the climate."

--Daniel Drezner in the Washington Post (October 25) suspects China's FOBS/HGV space superweapon is a conspiracy by the Pentagon and "GOP congressional staffers" who "sound pretty hawkish" to derail President Biden's plans to cut modernization of the U.S. nuclear deterrent: "Cold wars can also incentivize hawks to use well-timed leaks to undercut dovish members of a foreign policy team."

--CNN's Natasha Bertrand likewise thinks "the enemy is us" recently reporting: "China's test of a nuclear-capable hypersonic missile has given new fuel to critics of President Joe Biden's ambitious agenda to scale back America's nuclear arsenal...news of the launch is coming to light publicly as the administration nears the end of its Nuclear Posture Review. Biden's national security team has been working toward a policy of increased restraint and more limited spending on nuclear modernization and production."

## An Appeal To Reason

The threat to the United States is not from the Pentagon or GOP congressional staffers, but from China and Russia's new nuclear superweapons.

Worth quoting at length is a prominent defense expert who insists on anonymity lest his career be jeopardized for publicly voicing "politically incorrect" views:

"The PLA has been thinking long and hard, and doing what the West did so well during the Cold War - playing technological strategy and getting lots of smart people with PhDs to crunch lots and lots of numbers. [Holmes Liao's literature survey](#) on hypersonics published by Jamestown is well worth a read and shows that what Pry is arguing is neither extrapolation nor speculation, but actually hard fact. The PLA is indeed looking at arming HGVs with EMP or HPM warheads, and appreciates the virtues of low apogee strategic weapons implicitly - unlike many in the West who insist on framing all facts into an ideological narrative, in which the West is always at fault..."

"Muscovy's narrative for the Avangard HGV is that it defeats ABM / BMD systems. Western media have bought into this narrative with great zeal..."

"Accurate midcourse tracking for intercepts is the biggest challenge in defeating FOBS and HGVs, or hybrids like the recently flown PLARF prototype. And the reason for this is simply because of the curvature of the earth. A FOBS in a 150 km low orbit, or a HGV skating across the upper atmosphere at 100 km is hidden below the radar horizon of a ground or sea based BMD radar no differently than a cruise missile at 100 ft AGL is hidden from a SAM site, until they are close enough for radar line of sight. This was always one of the unstated advantages

of FOBS and the rationale for depressed ICBM/IRBM/SLBM trajectories. The result of these low elevation trajectories is that unlike ICBMs that hit their apogees at altitudes of 1,000 km or more, and can be accurately tracked for ABM shots from thousands of kilometers away, FOBS, HGVs and DT ICBM/IRBM/SLBM are not detected and tracked by a land/sea based ABM radar until quite close to their targets, significantly cutting warning times for retaliatory ICBM launches, or engagement by ABMs.”

**“This is the real agenda behind the RVSN’s Avangard, and the PLARF FOBS/HGV hybrid and this demonstrably makes them destabilizing first strike weapons, something Western narrative driven media and arms control zealots usually fail to mention, since the West is always at fault, not Russia or China.”**

On the theory that “a picture is worth a thousand words” something of the revolutionary severity of the FOBS/HGV threat is depicted in the three figures below:

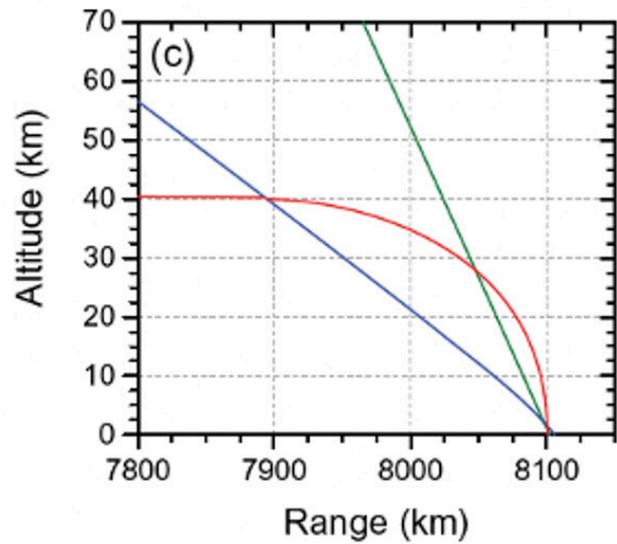
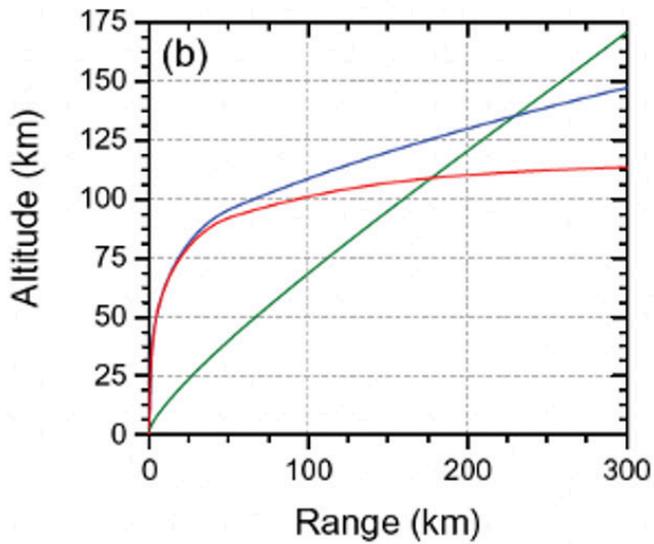
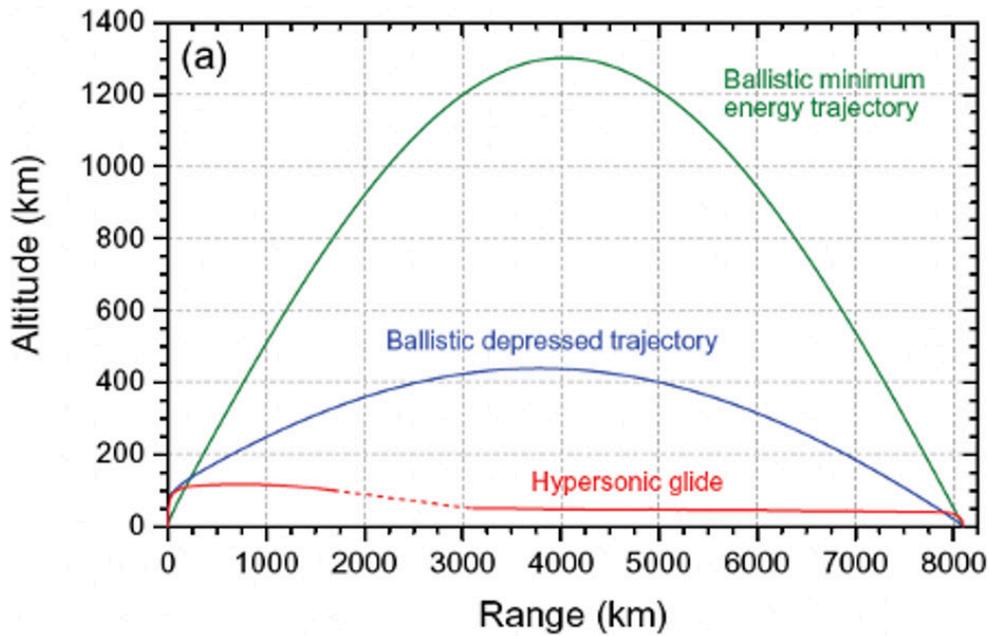
--The “Ballistic minimum energy trajectory” is the ICBM/SLBM threat during the Cold War and today, which is what U.S. Ballistic Missile Early Warning Systems are designed to detect to support deterrence and, if necessary, U.S. nuclear retaliation.

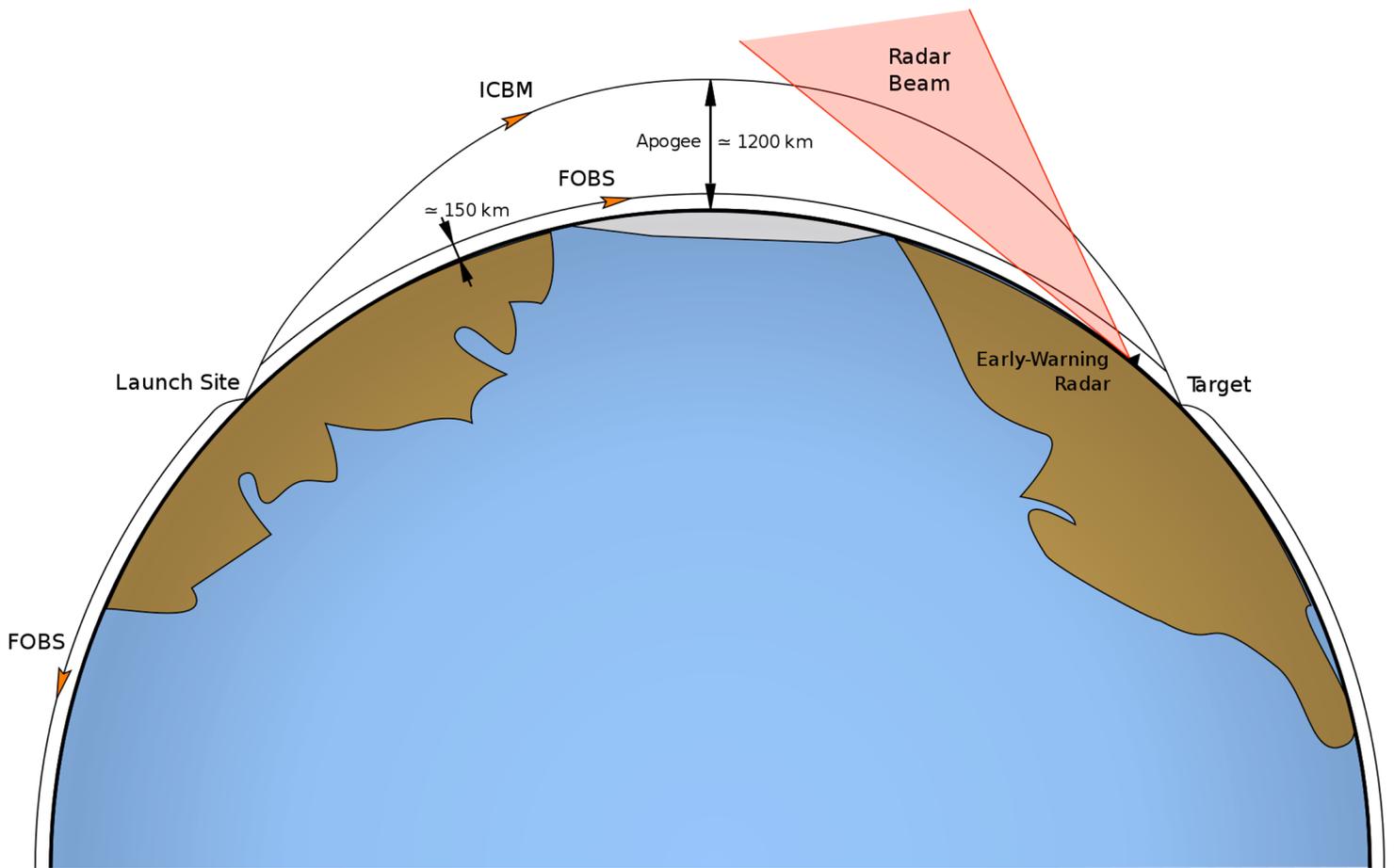
--The “Ballistic depressed trajectory” is a “worst case” theoretical threat that greatly worried U.S. military planners during the Cold War as a means of surprise attack, which was never addressed.

--The “Hypersonic glide” trajectory is the threat of surprise attack posed today by Hypersonic Glide Vehicles.

--The two other figures below depict HGV trajectories during boost-phase and atmospheric re-entry, which also significantly complicate problems of detection, interception, and defense.

*Hypersonic Glide Vehicle (HGV) trajectories versus Depressed Trajectory (DT) SLBM/ICBM and ballistic trajectories (Tracy and Wright, 2020):*





*The illustration above (from Wikipedia) compares and contrasts the threat from an ICBM launched on a normal ballistic trajectory versus a FOBS, which reduces radar early-warning time to almost nothing. The FOBS, if launched on a south polar trajectory, provides no early warning at all.*

The introduction by China, Russia, and even North Korea of FOBS and HGVs threatens to destroy the foundations of nuclear deterrence. This is indeed another “Sputnik moment” that should mobilize an emergency national response, as the original Sputnik did in 1957.

## What Is To Be Done?

Unfortunately, the Biden administration appears cowed by or a co-conspirator with the Antinuclear-Media Complex, that is determined to use the Nuclear Posture Review to (in CNN’s words) “scale back America’s nuclear arsenal” perhaps to a *Monad* of six missile submarines and a posture of Minimum Deterrence. The Antinuclear-Media Complex thinks none of the revolutionary nuclear threats discussed here matter, nor do any of the complex technologies or strategic calculations matter, because, as President Biden pledged in Geneva: “A nuclear war cannot be won and must never be fought.”

Just as British Prime Minister Neville Chamberlain thought World War II was impossible because “the bomber will always get through,” so too the Antinuclear-Media Complex has blind faith in the efficacy of Minimum Deterrence.

At best, the new Nuclear Posture Review will permit present U.S. nuclear modernization programs to continue. These programs, inherited from the Obama administration, will prove as inadequate to the future technological challenge as the B-29 bomber was to Sputnik.

Since the Biden administration has continued President Trump’s “Executive Order on Coordinating National Resilience to Electromagnetic Pulses”—

perhaps the Biden administration can be persuaded to launch a crash program hardening U.S. strategic forces, C3I, electric grids and other civilian critical infrastructures against EMP. This would address one of the worst threats posed by FOBS/HGVs. Passive defense of U.S. critical infrastructures against EMP and Cyber Warfare should not be philosophically or politically objectionable to the Antinuclear-Media Complex.

Perhaps the last best hope is space-based missile defense, which can render nuclear missiles obsolete, defeat FOBS/HGVs, and protect America from being attacked with EMP in the first place. Ambassador Henry Cooper, former Director of the Strategic Defense Initiative, estimates the Brilliant Pebbles space-based defense can be resurrected and deployed in 5 years for \$20 billion—quick and inexpensive by today’s standards.

Alas, “Star Wars” is vehemently opposed by Russia, China, North Korea, and the Antinuclear-Media Complex. But as the consequences of U.S. strategic inferiority and vulnerability become increasingly clear, likely leading to adversary aggression and unraveling of U.S. alliances, even the Biden administration and the Antinuclear-Media Complex may awaken to reality.

Maybe someday soon even CNN will realize that “Star Wars” is the best possible anti-nuclear strategy. And to become President “Star Wars” Biden would be the best possible legacy, to succeed where President Reagan failed, by slaying the nuclear dragon and stilling the ghosts of Hiroshima and Nagasaki.



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