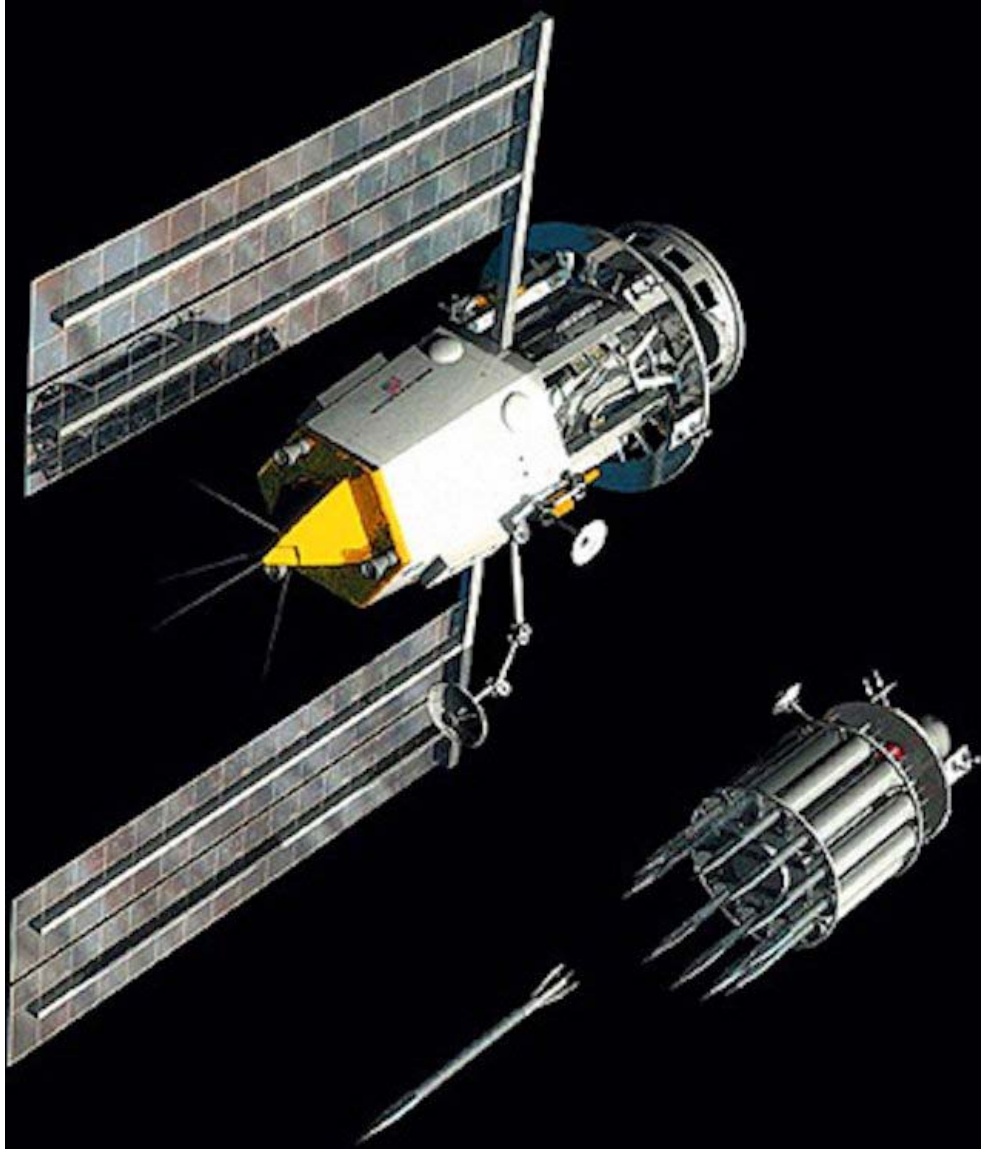


The Air Force's 'rods from god' could hit with the force of a nuclear weapon — with no fallout

<http://www.businessinsider.com/air-force-rods-from-god-kinetic-weapon-hit-with-nuclear-weapon-force-2017-9>

The 107-country Outer Space Treaty signed in 1967 prohibits nuclear, biological, or chemical weapons from being placed in or used from Earth's orbit. What they didn't count on was the US



Air Force's most simple weapon ever: a tungsten rod that could hit a city with the explosive power of an intercontinental ballistic missile.

1. During the Vietnam War, the US used what it called "Lazy Dog" bombs. These were simply solid steel pieces, less than 2 inches long, fitted with fins. There was no explosive — they were simply dropped by the hundreds from planes flying above Vietnam.

2. [Lazy Dog projectiles](#) (aka "kinetic bombardment") could reach

speeds of up to 500 mph as they fell to the ground and could penetrate 9 inches of concrete after being dropped from as little as 3,000 feet.

The idea is like shooting bullets at a target, except instead of losing velocity as it travels, the projectile is gaining velocity and energy that will be expended on impact. They were shotgunning a large swath of jungle, raining bullet-size death at high speeds.

That's how Project Thor came to be.

Instead of hundreds of small projectiles from a few thousand feet, Thor used a large projectile from a few thousand miles above the Earth. The "[rods from god](#)" idea was a bundle of telephone-pole-size (20 feet long, 1 foot in diameter) tungsten rods, dropped from orbit, reaching a speed of up to 10 times the speed of sound.

The rod itself would penetrate hundreds of feet into the Earth, destroying any potential hardened bunkers or secret underground sites. More than that, when the rod hits, the explosion would be on par with the magnitude of a [ground-penetrating nuclear weapon](#)— but with no fallout.

Such a weapon could destroy a target with [15 minutes'](#) notice.

One [Quora user who works in the defense aerospace industry](#) quoted a cost of no less than \$10,000 a pound to fire anything into space. With 20 cubic feet of dense tungsten weighing in at just over 24,000 pounds, the math is easy. Just one of the rods would be prohibitively expensive. The cost of \$230 million a rod was unimaginable during the Cold War.

These days, not so much. The [Bush administration even considered revisiting the idea](#) to hit underground nuclear sites in rogue nations in the years following 9/11. Interestingly enough, the cost of a single Minuteman III ICBM was \$7 million in 1962, when it was first introduced (\$57 million adjusted for inflation).

The trouble with a nuclear payload is that it isn't designed to penetrate deep into the surface. And the fallout from a nuclear device can be devastating to surrounding, potentially friendly areas.

A core takeaway from the concept of weapons like Project Thor's is that hypersonic weapons pack a significant punch and may be the future of global warfare.

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