

Krieg Heute: Interventionen, Drohnen, Cyberwar

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Wissenschaft zwischen Krieg und Frieden
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Agenda

- Collapse of the USSR and unplugging of a hyper power
- Revolution in military affairs
- The new war based on overwhelming technological superiority
 - Space
 - Cyber
 - Autonomous systems
- Technology is no panacea

End of the Cold War

- Collapse of a superpower and the birth of a hyperpower
- Ensuing instabilities in Europe
- U.S. unilateral interventions
 - Humanitarian, preemptive, regime change
- The U.S. drives the global arms race
 - U.S. military spending 12 times Russia's and 5 times that of China
 - U.S. spending on weapons R&D alone far exceeds most nations' total military spending

A blind faith in technology fuels unilateralism

- 1989 November 9, Fall of the Berlin Wall
- 1989 December 20, U.S. invades Panama – “Operation Just Cause”
 - Debut of the F-117 stealth fighter
 - Hellfire missiles fired from Apache helicopters
- 1991 Dissolution of the Soviet Union
- 1991 The first war against Iraq – the “Gulf War” (George H.W. Bush)
 - Debut of the Tomahawk cruise missiles
 - First time large scale use of missiles
 - Patriot air defense system doubles as antimissile system
 - First time use of Space in actual warfighting, not just surveillance
- 1998 U.S. bombs “terrorist camps” in Afghanistan and an Aspirin factory in Sudan claiming it produced chemical weapons in “Operation Infinite Reach” (Bill Clinton)
 - Tomahawk cruise missile attacks
- 1999-2000 U.S./NATO War against Serbia without UN authorization (Clinton)
 - Debut of the Predator drone
 - Tomahawks upgraded with GPS transponder and 2-way satellite data link
 - F-117 Stealth fighter, B-2 bombers
- 2001 U.S. withdraws from the ABM treaty. Decides to deploy antimissile systems – President George W. Bush
 - Large-scale use Space with satellite imagery, real time communication in warfighting
- 2001 September 11 bombings in the U.S. mainland

Global War on Terrorism – a *carte blanche*

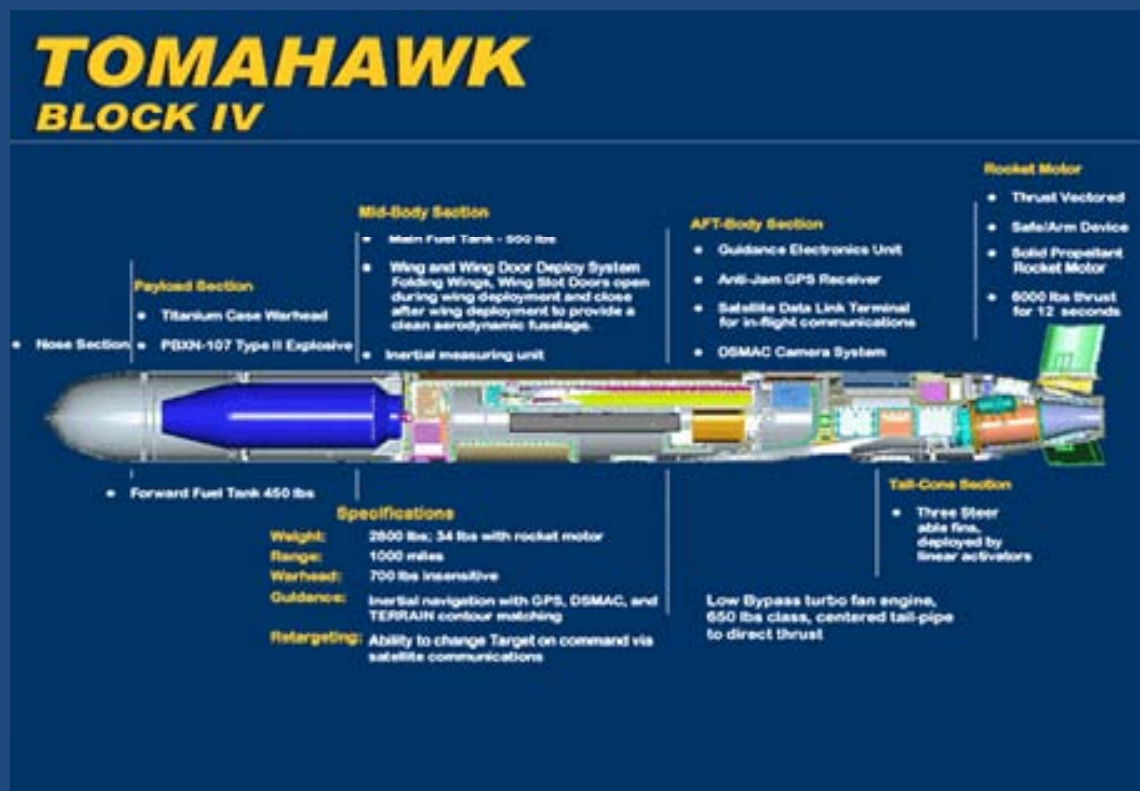
- 2001 U.S. declares a Global War on Terrorism (GWOT)
 - Nothing applies
 - Geneva conventions, national sovereignty, human rights and humanitarian law
 - A new characterization of adversaries as “Enemy Combatants” subject to rendition, torture, indefinite detention
 - Patriot Act allows gross violation of civil liberties of U.S. citizens
- 2001 U.S. and NATO invade Afghanistan (George W. Bush)
 - Large-scale use of Tomahawks
 - Aerial bombing with B-2s, **Bunker Busters**
 - 2009 Start of large-scale use of **drone strikes (Obama)**
- 2003 US/NATO invade Iraq using the WMD ruse – “Operation Iraqi Freedom” (Bush)
 - “Shock and Awe”
 - Tomahawks, Predator drones, F-117, B-2, Massive **GDAM bombs**
 - Other weapons reportedly tested
- 2011 US/NATO bomb Libya killing Col. Gaddafi (Obama)
 - Tomahawks reach a milestone 2000th Tomahawk fired
- 2013 US threatens to bomb Syria using chemical weapons as an excuse to remove President Assad (Obama)
- 2014 Ukraine

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America's smart workhorse



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Joint Direct Attack Munition (JDAM) GBU-31/32

- JDAM is one of the newest "smart" bombs made by Boeing. GBU-31 is the 1000-pound version, GBU-32 the 2000-pound.



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View at the receiving end

- 74,000 JDAMS have been purchased.
- 80% of bombs dropped on Iraq were JDAMS

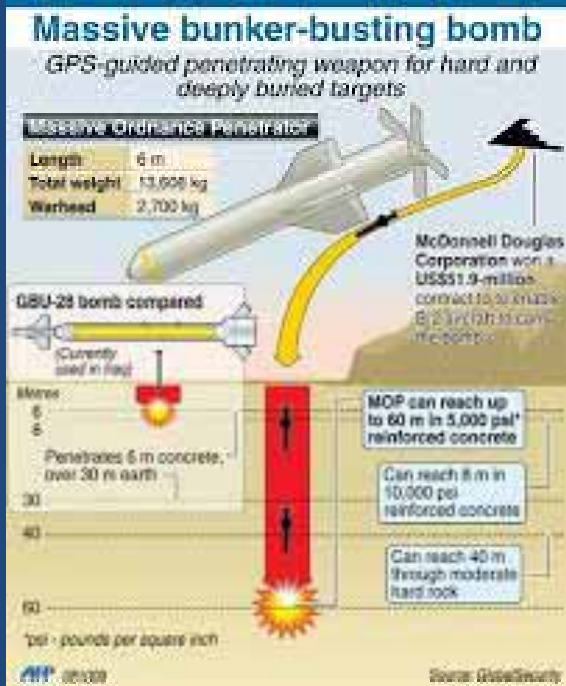


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The Bunker Buster made by Boeing



Being loaded on the B-2 Stealth Bomber



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The Massive Ordnance Penetrator (MOP) a.k.a. the “Bunker Buster”

- Weighs 30,000 lb. Can only be dropped from B-2.
- Can penetrate up to 200 feet (Iran’s deeply buried Fordow enrichment facility is the target)
- The **largest non-nuclear** bomb in the U.S. arsenal and will carry 5,300 pounds of explosives.
- 10 times more powerful than the weapon it is designed to replace.
- Israel received the bomb in 2011

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The Rule of Law?

- Using the U.N. Security Council with close support from its allies U.K. and France
- Blaming the U.N. as useless when it cannot get its way
- Assuming the right to intervene preemptively
- Removing regimes unfriendly to the US
- Conducting drone strikes to kill individuals with no regard to national sovereignty

The Predator Drone and The Hellfire Missile

- The weapon of choice in targeted killings



Hellfire Missiles adapted for UAV



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Targeted Killing with “Little” Collateral Damage

- UAV Strike in Pakistan



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Cyber War

- Cyberspace and Space domains intertwined because of their roles in telecommunication and networks
- Offensive cyber operations already deployed against Iraq, Iran, China, Syria, Libya, etc.
- The Stuxnet virus jointly developed by the U.S. and Israel
- Cyber command

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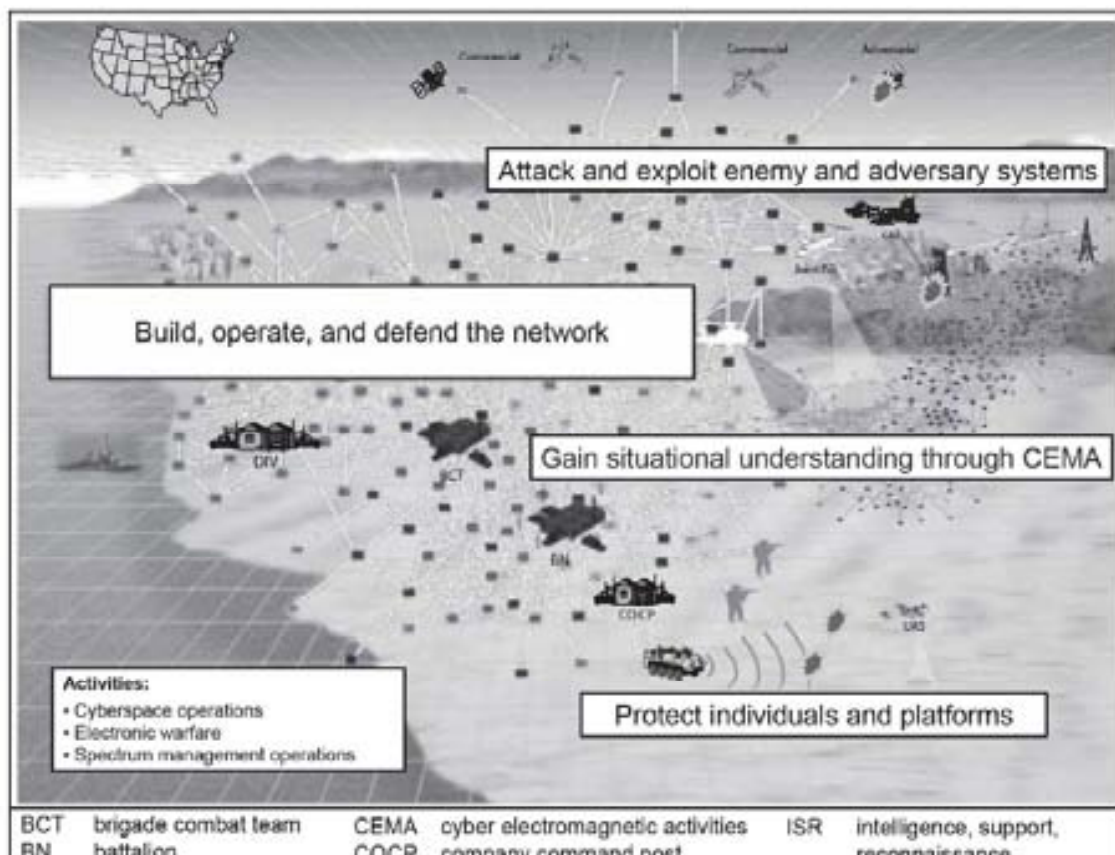
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HEADQUARTERS, DEPARTMENT OF THE ARMY

- Army Field Manual for Cyber and Electromagnetic Warfare

FM 3-38
CYBER
ELECTROMAGNETIC
ACTIVITIES



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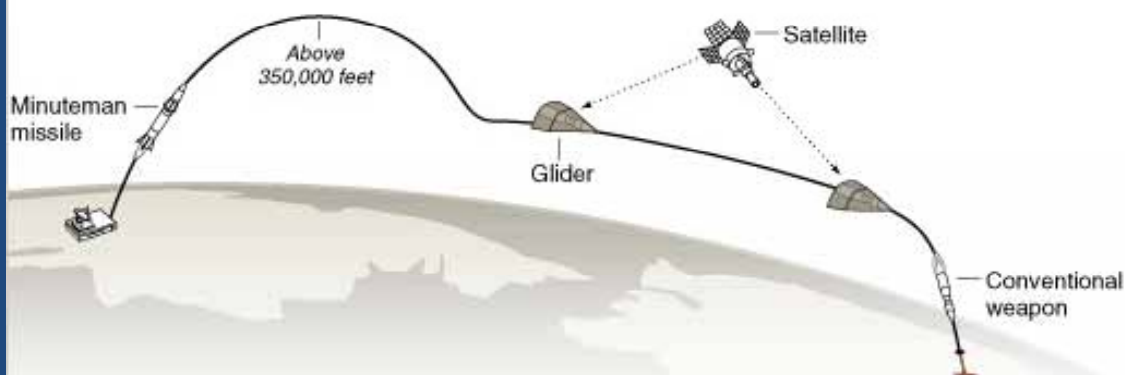
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Prompt Global Strike

An Alternative Weapon

A powerful conventional weapon currently in development, called Prompt Global Strike, could be an alternative to nuclear warheads. It will be designed to travel halfway around the world from launching to target in less than an hour.



The weapon would be launched on a Minuteman missile, which travels at altitudes above 350,000 feet.

The missile would release a hypersonic glider that would receive updates from satellites as it travels toward the target.

The glider may be designed to release a 1,000-pound conventional weapon that could penetrate deep into the earth.

Sources: GlobalSecurity.org; U.S. Strategic Command

THE NEW YORK TIMES

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Prompt Global Strike – America’s “non-nuclear” deterrent

- With PGS the U.S. military may not need nuclear weapons
- Obama can talk about elimination of nuclear weapons, but not reduce U.S. dominance
- But, arms control with deep cuts in nuclear weapons would be extremely difficult
 - Deployment of missile defense systems is another factor

The U.S. Pivot to Asia

- Containment of China without mentioning it
- Old wine in a new bottle
- Primary focus military power
 - Revitalizing old partnerships
 - the Philippines, Vietnam, Indonesia
 - India a new partner
 - Encouraging Japan to have stronger military
 - China responding with huge increases to its military budget

“Revolution in Military Affairs” (RMA) hits a wall in Iraq and Afghanistan

- High-tech weapons cannot defeat Al Qaida
- Crude Improvised Explosive Devices (IED) taking a huge toll on US/NATO forces
- Decade-long wars cost more than \$1-trillion
- Nobel laureate economist Joseph Stiglitz estimates real cost of war to exceed \$30-trillion

American public opinion turns strongly against foreign interventions

- Near collapse of the Wall Street, massive deficits, an unprecedented recession
 - Obama himself connecting war costs with the economy's weakness
- Strong public support for withdrawal from Iraq and Afghanistan
- Calling off intervention in Syria in the face of public opposition could be a turning point for American foreign policy
- Obama's reluctance to militarily intervene in Ukraine

The Post-Cold War order may be ending

- The financial meltdown in 2008 has shaken confidence in the U.S. system
- Two military interventions in the Muslim world have failed miserably
- Massive high-tech weapons can destroy countries, but not the spirit of the people
- Other nations will challenge the U.S. monopoly in technology in the new era of missiles, space, cyber weapons, and autonomous drones

Vielen Dank!

Cold War Paradigm Continues

- Major collaboration between scientists and the Pentagon started during WWII
 - Radar, electronic warfare
 - Nuclear weapons
- Continues unabated
 - Spending on Military R&D exceeds peak Cold War level

What would science for peace look like?

- Universal Science education a high priority
- Less mega science, more small science
- Open and transparent
- Remove military-funded research from the university