



Strategic Conventional Counterforce:
US/Allied Conventional Counterforce vis-à-vis
China and Russia

A quiet evolution in military affairs
Teaser

Prof. Dan Plesch & Manuel Galileo

Strategic Concept for the Removal
of Arms and Proliferation

SCRAPweapons.com

SOAS University of London



Strategic Conventional Counterforce

- Origins of Research
- Chinese and Russian Triads vulnerability to US/Allied conventional forces – overview
- Analysis of Land-based systems vulnerabilities
- Technology Focii –
 - [Rapid Dragon](#)
 - Amraam Boost phase
 - Conventional Trident SLBM?
 - Aegis vs ICBM
 - CAVEATS
 - FUTURE ARMS CONTROL AND DISARMAMENT

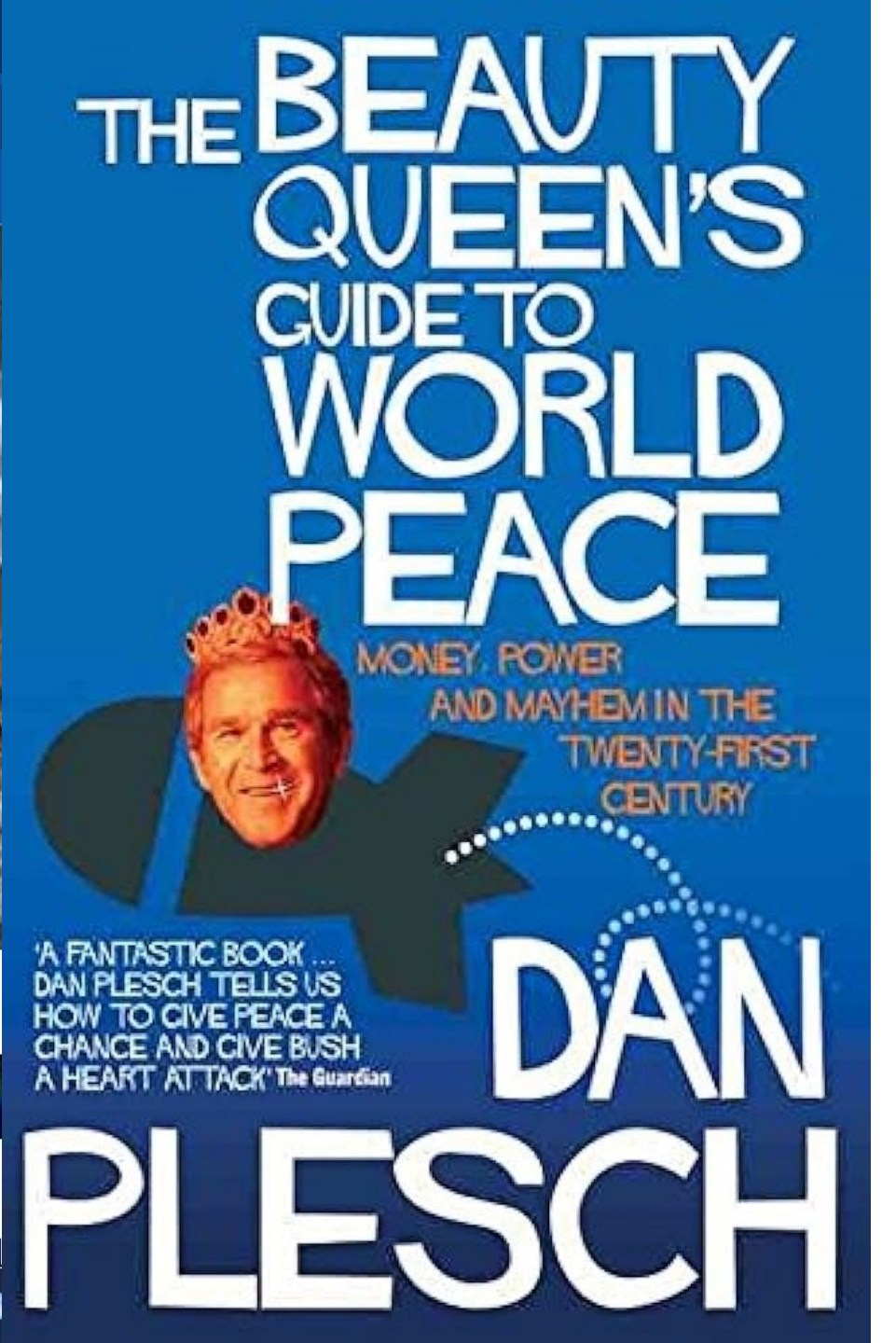


Could the US win World War III without using nuclear weapons?

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Denis_kh via Shutterstock

Email | As the US, Russia and China test each other's patience and



THE BEAUTY QUEEN'S GUIDE TO WORLD PEACE

MONEY, POWER AND MAYHEM IN THE TWENTY-FIRST CENTURY

'A FANTASTIC BOOK ... DAN PLESCH TELLS US HOW TO GIVE PEACE A CHANCE AND GIVE BUSH A HEART ATTACK' *The Guardian*

DAN PLESCH

Objective of Presentation



- Address the concerns of China and Russia **over US strategic conventional strike and defense systems impact on Strategic Stability- 2nd Strike nuclear forces.**
- Ask whether Chinese and Russian nuclear forces able to reach CONUS are vulnerable to US/Allied conventional pre-emptive counterforce/counterstrike strikes
- Uncover the merits of proven CF capabilities aside from future hypersonic, drones, AI, cyber
- insufficient Western-based open analysis of the topic Western strategic studies focusing on Chinese and Russian forces in regional contexts (i.e., South China Sea) and regional, not strategic
- Conclusion: both Chinese and Russian strategic **air and naval** forces overall vulnerable to pre-emptive attacks – submarines trackable by ASW and boost-phase MD vessels
 - However, Russian and Chinese **land-based systems, mobile and deeply buried systems**, respectively, reveal considerable evidence of vulnerability in a more complex analytic picture.
 - **So: SCCF threatens or appears to threaten Chinese and Russian second strike nuclear forces removing strategic stability with little or no awareness within Western strategic communities.**
 - Strategic Conventional Counterforce realities undermining 2nd Strike need to be integrated into analysis of regional issues.
 - Opens need for new global approach to conventional and nuclear notwithstanding the “comma” in NPT Article VI.

Drivers of analysis

1. Geographic disparity clearly favours US/Allies

- Few C and R military assets in US's vicinity
- Opposite is true – encirclement is obvious. China unable to launch operations beyond its 1st Island Chain
 - Russian and Chinese ICBM capabilities *are* in range of Allied CF
- Yet, neighbouring Allies to China and Russia feel threatened → escalating misunderstandings, and potentially cognitive dissonance
 - These fears disregard capabilities of US (let alone with European and Asian partners) against a significant percentage of C and R strategic forces
 - Sheer arithmetic favours the Allies, namely military budget for a suitable CF force, world-leading technical expertise for tracking road-mobile and against hardened structures, and combined-arms wartime experience (which China lacks)

CHINESE AND RUSSIAN EARLY WARNING WEAK

1. Unnoticed quiet evolution in US and Allied attack and defence systems

- Speed, accuracy, stealth, penetrating impact, tracking, and comparably overwhelming industrial scale of production
- E.g., JASSM XR, Aegis, containerised weapons. V large increase in systems post INF and in production

CF operational ranges against furthest Chinese and Russian targets - Overview

- China – **2,400km** in Xinjiang
- Russia – **2,300km** at Barnaul, near Kazakhstan

US/Allies conventional capabilities

For Missile Defeat: Vessels, Bombers and Fighters with

- Tomahawks: ~4,500 stockpiled
 - Block Vb - >**1666 km** (*exact range classified*)
 - Block II TLAM-A – **2,500 km**
- [JASSM XR](#): ~2,150 stockpiled
 - **1,900km**
- Trident CTM?
- Missile Defense
- AMRAAM – Boost Phase BMD
- Aegis Platform (using ballistic missile interceptor in post-boost phase and prior to entry)
 - RIM-156 SM-2ER Block IV

Evolution of offensive systems for missile defeat

- Example:
- [The Joint Air to Surface Standoff Missile family JASSM](#)
- >1900 Km range
- Some 10,000 in or programmed production
- Purchased by Allies – Australia, Finland, Germany, Japan, Poland
- Deliverable from any transport, fighter, bomber or surface platform
- Adversary/Arms control issue is that any platform now has to be considered a conventional strategic platform (with added nuclear??)

Evolution of Ballistic Missile Defence

- Example 1: Missile defence increasingly effective: in Ukraine by Patriot & Allied systems vs Russia, and Aegis vs Arabs
- Example 2: Navy Aegis vs ICBM test 2020 - ?Game Changer

Aegis on 40 + vessels and ashore



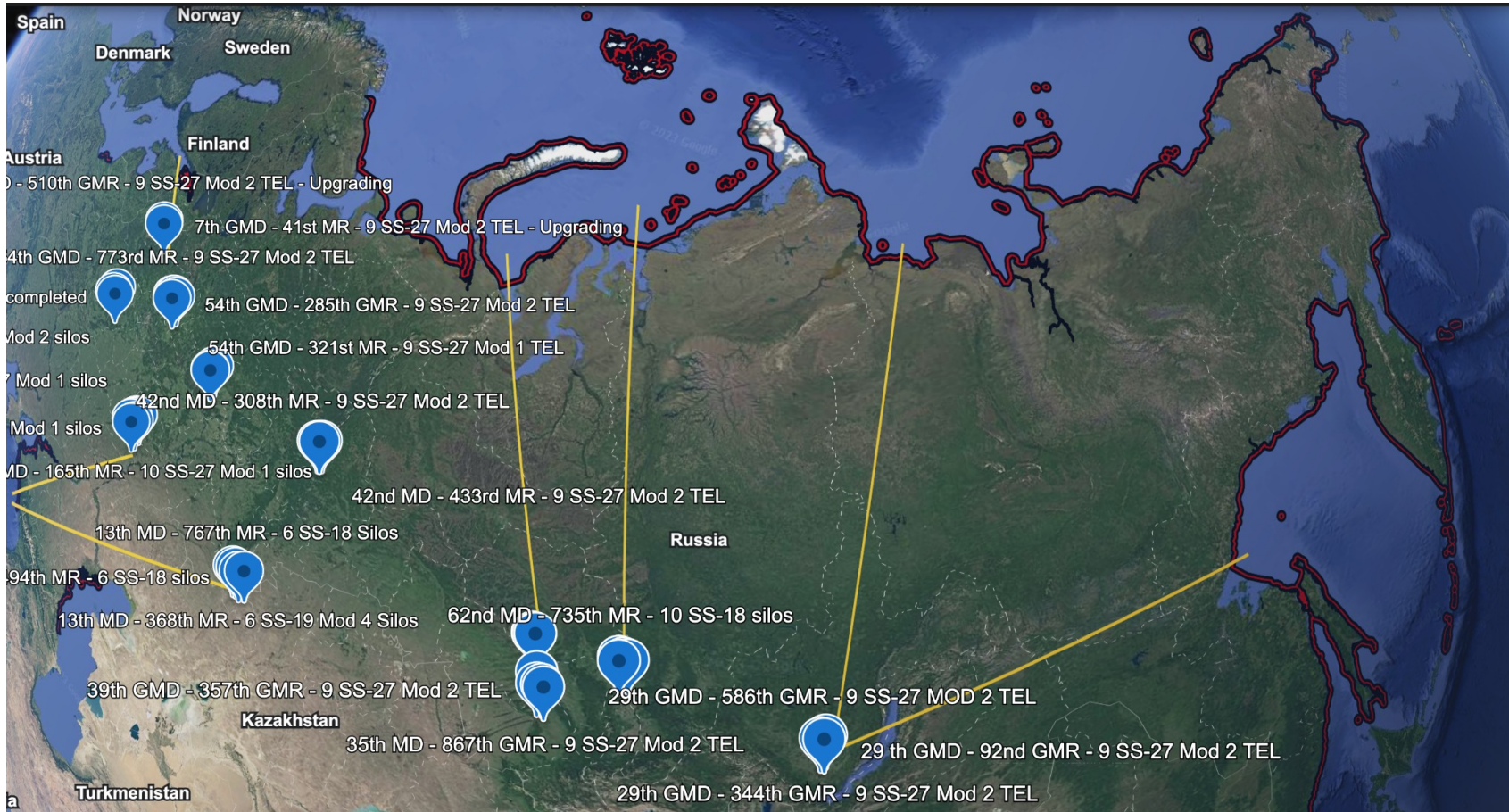
- Example 3
 - New AMRAAM Air to Air system with Boost Phase BMD capability from Fighters – 100 mile plus range

Currently deployed Strategic Conventional Counterforce - Sword and Shield



- Significant advances in accuracy and penetration capabilities
- Yet, obstacles remain:
 - Target intelligence vv location and concealment of road-mobile systems.
 - E.g., overall effectiveness against mobile targets proved difficult in Iraq. But 30 years of technological advances in tracking are revolutionary
 - Infrastructure hardening, especially by China, *still* poses a great challenge
 - But, does US need to fully destroy underground silos opening, or simply blocking the exit with seismic shocks may prove sufficient?

Location of Russian silo-based ICBM launcher forces

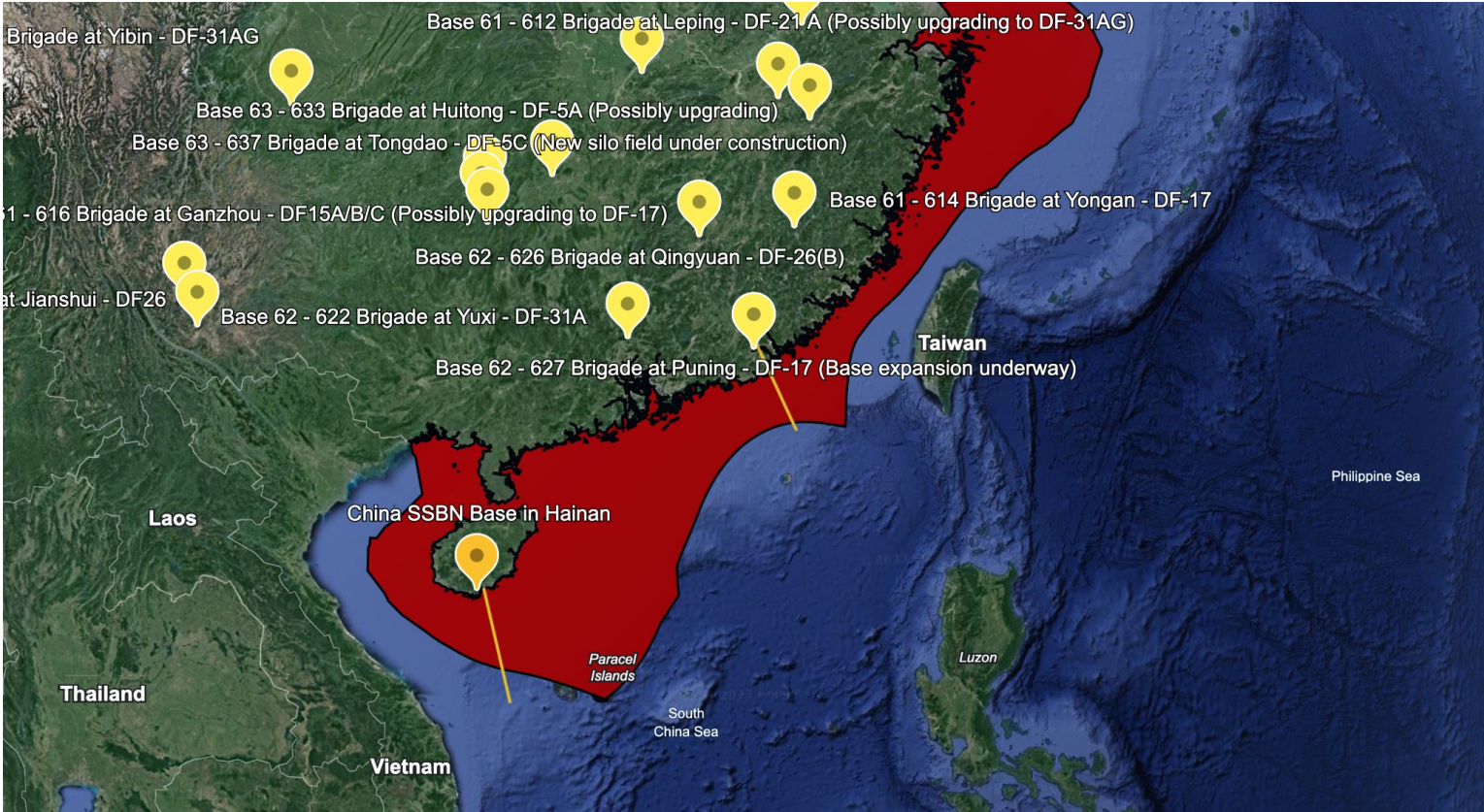


NB The furthest strategic Russian silos are at Barnaul ~2,300 km from Russia's 12nm maritime delineation

<https://earth.google.com/earth/d/17OCZ3HvUsbL3ANSgCuvmlBMOu81mlJUM?usp=sharing>

Chinese SSBNs

- 6 Jin-class (Type 094) SSBNs based in Hainan Island – range of 10,000 kms – can reach most CONUS, but not Washington D.C. *without* sailing past Northeastern Japan
 - Vindicating geographic disadvantage faced by Beijing if pursuing sea-based strikes

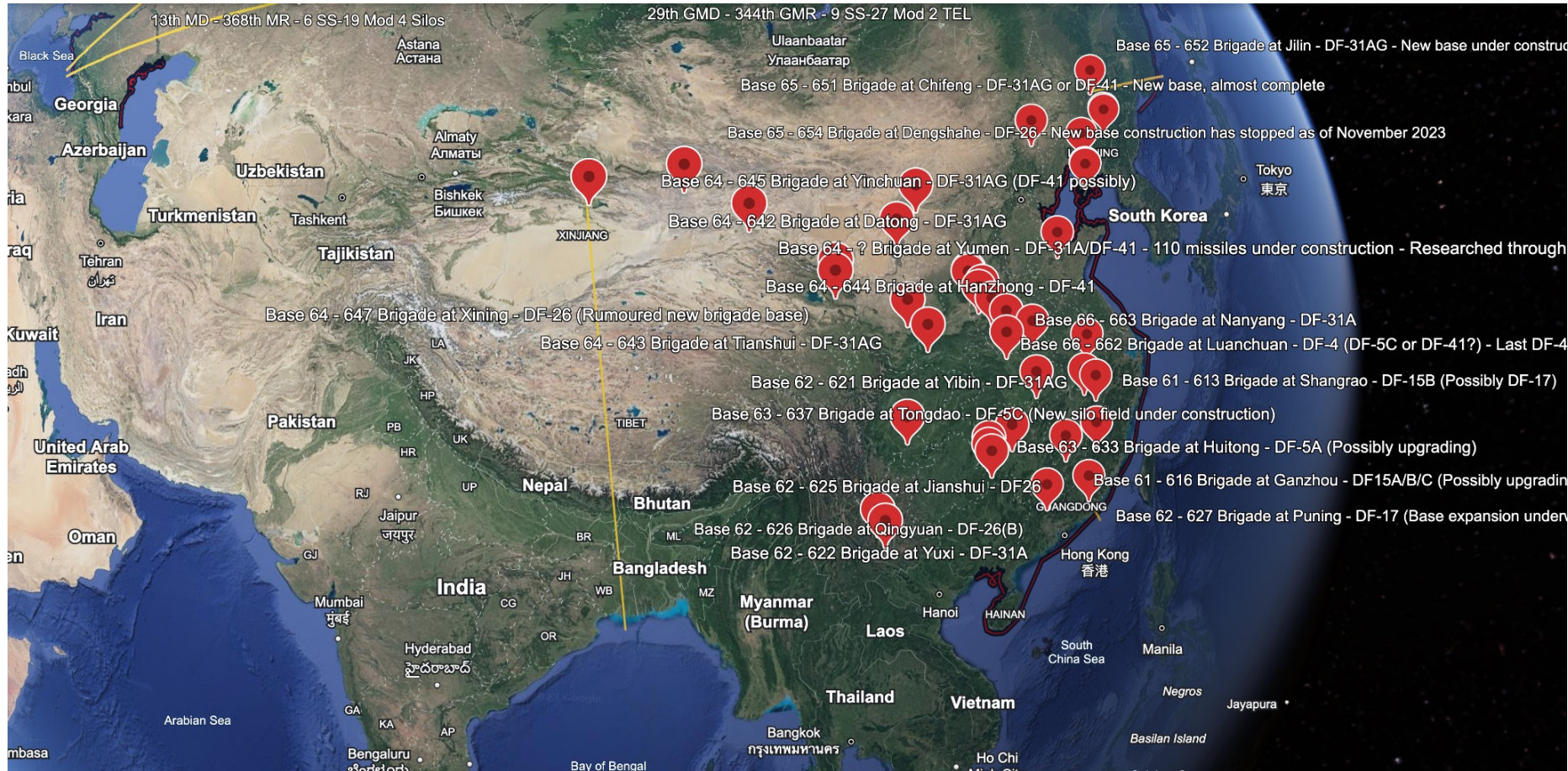


AUKUS? FRAUKUS?

Diesel subs arguably more Effective off China-

Profits vs strategy?

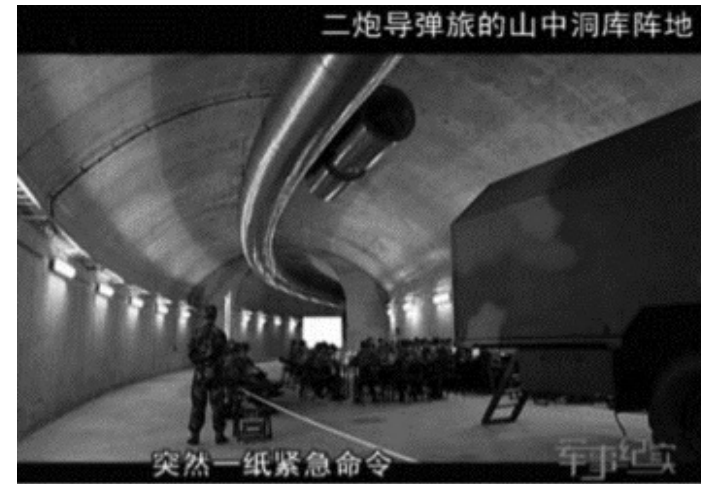
Location of Chinese ICBM launcher forces: silos and road-mobile bases, approx



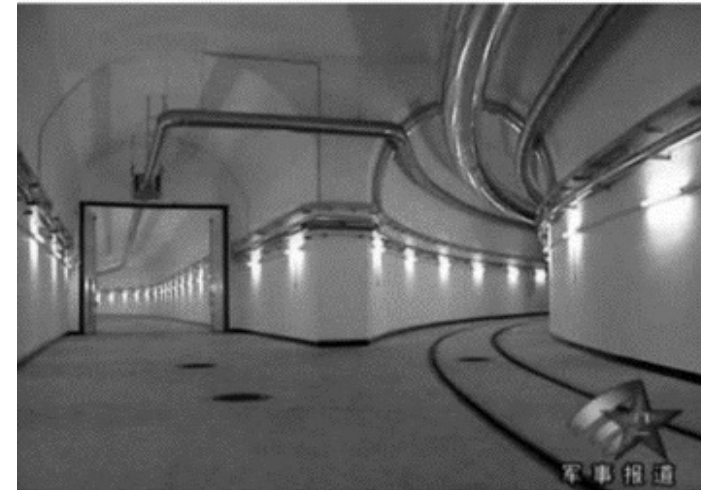
NB: The furthest trajectories are **2,400km** from the Bay of Bengal to the Xinjiang silos
https://earth.google.com/earth/d/1Y5PNj61lhdSLIKcWq_wsZpYFyixRCmUd?usp=sharing

China's Great Wall Project

- Underground web of tunnels in mountainous areas
 - 5,000km of underground tunnels reportedly built in mountains
 - Tunnels can accommodate land-mobile and locomotive missile vehicles:
 - 80% China's ICBMs are road-mobile → the real challenge for Allied CF



(a)



(b)



CF vs granite silos



- A typical US conventional precision-guided weapon has a destruction range of no more than 25 m in granite. Even the Massive Ordnance Penetrator (MOP), has a destruction range of about 35 m.
 - It seems *unlikely*, even under extreme circumstances (for example when a number of these weapons were to be delivered repeatedly with very high precision on a single target), that there is any chance for conventional weapons to destroy targets buried hundreds of meters underground in granite, the reported depth of typical “Great Wall Project” tunnels.
- Even a single large yield nuclear warhead may be unable to destroy the facilities by a direct hit, requiring repeated strikes at the same point by a number of nuclear penetrators of hundreds of kilotons yield
 - Let alone conventional penetrators- this is the real strength of Chinese capabilities
 - However, is full silo destruction needed? Or simply blocking the entrances of the silos suffices?

Weapon warhead/ Penetrating munitions	Explosive weight (kg)	Yield (kg, TNT equivalent) ¹	Range of destruction (m, distance from detonation point)
BLU-109	243	365	~14
BLU-116	243 or less ²	365 or less	<14
BLU-113	N.A.	304 ³	~14
SLAM-ER (AGM-84H)	230	345	~14
JASSM (AGM-158A)	450	675	~18
TLAM	450 or less ⁴	675 or less	<18
CALCM (AGM-86C/D)	N.A.	1,300 ⁵	~22
MOP (Massive Ordnance Penetrator)	3,500	5,250	~36

Table 1: Destruction ranges for conventional precision-guided weapons in granite

Blocking silo entrances sufficient? Assumptions and future research

- Shock waves by JASSMs will crush tunnels within a certain range. The depth of penetration is mostly determined by the speed of the warhead. However, as the speed increases, the weapon material would no longer survive the severe ground impact stresses and would destroy itself before it can explode as designed.
- Currently, maximum impact speed for the hardest steel is about 1km/s. Under such constraint, the maximum penetration depth into reinforced concrete is roughly about 4x the length of the penetrator. For typical conventional earth penetrators in the current U.S. arsenal, such as BLU-109 and BLU-116, their length is about 2.4 m, meaning their maximum penetration capability is about 9.6 m into reinforced concrete.
- Thus, it can be assumed that **10 m is approximately the maximum depth** that a typical conventional precision-guided weapon can penetrate into reinforced concrete. After penetration and detonation, the range of destruction is largely proportional to the cube root of the force of the explosion.
- Ultimately, the current chance of success of CF against Chinese underground structures is questionable, and a further analysis on the effects of shock waves must be conducted

Conventional Trident D5 Warheads Ohio class

Conventional Trident Developed and flight tested under Obama

Launch to target 2-30 minutes
Ballistic "HYPE"ersonic speeds

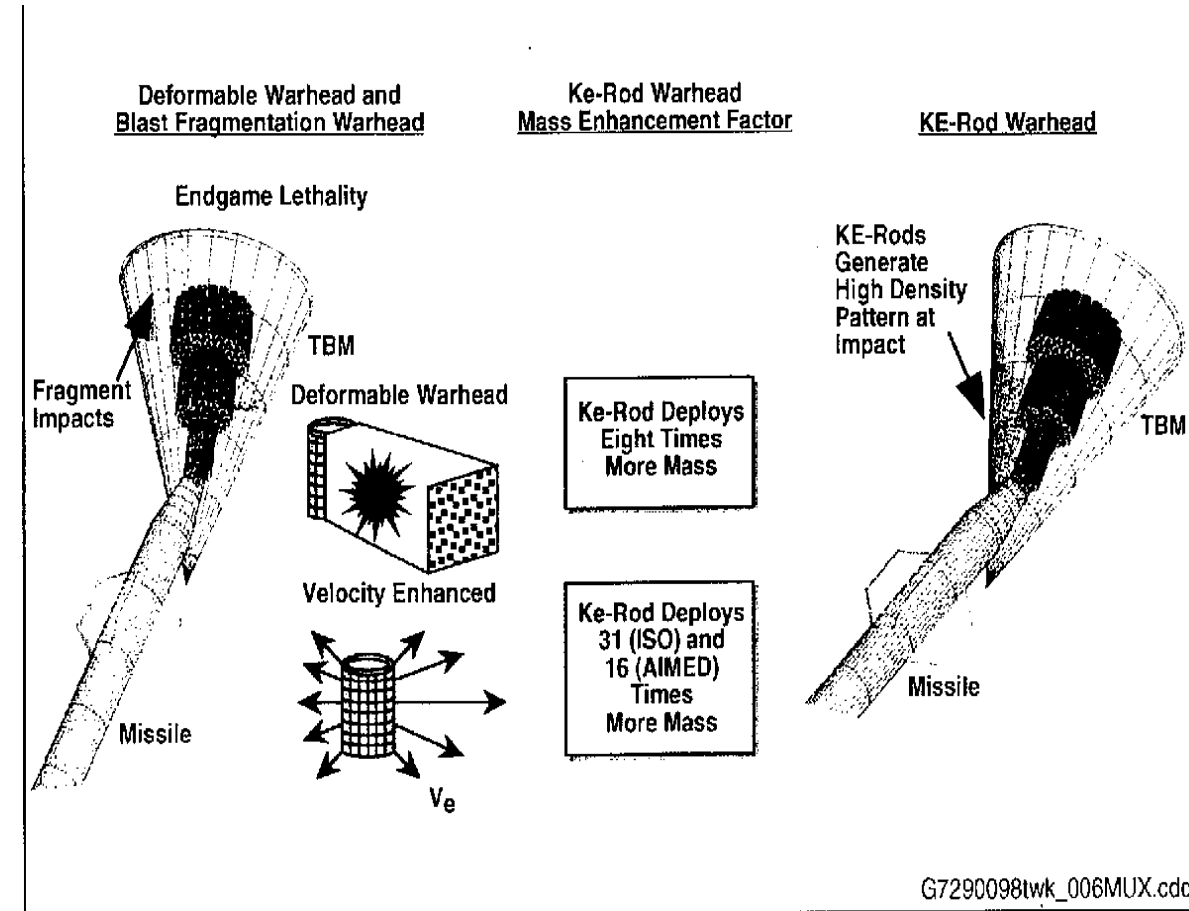
Concerns of nuclear confusion

NAS said develop but don't deploy

No specific PE in Budget since 2008

No Congressional pressure to fund?

In General/Special Access?



Caveats - warnings

- Much analysis unreal -
- Doctrine/Policy – and the day to day
- Luck – B. Pelopidas
- US and Allies lost two wars with no impact on strategic culture
- No C2 in Afghanistan and no Analysis
- No analysis US national command on 9/11 as example for interstate crisis management
- Most analysis blinkered to:
- Influence of Profit on Production
- Industry finance of think tanks
B.Pelopidas
- Problem of toxic militarist masculinity
Where no one comments that missiles and even the aerial on the President's "Football" have red tips.
- Failure to recognize Morgenthau's directive for a cultural shift from war as the realist reaction to the bomb.
- Non-use is necessary for eternity unless abolition is the strategy.

Disarmament & Strategic Conventional Weapons



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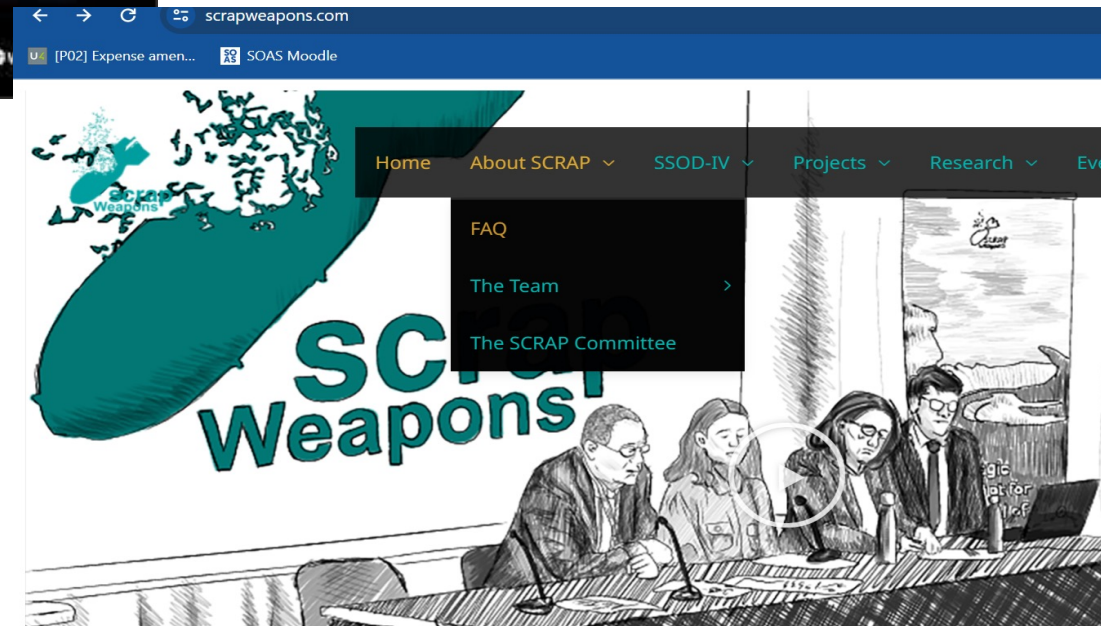
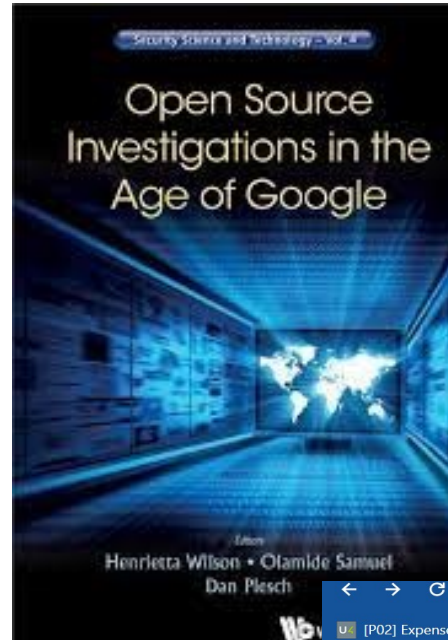
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Zero Missiles: building on the precedent that helps Ukraine today

Dan Plesch | Professor of Diplomacy and Strategy, SOAS University of London

ARMS CONTROL INF MISSILES UKRAINE GLOBAL SECURITY

It may not be the first thing you might think about when seeing Russian missile bombardments of Ukraine, but a disarmament treaty has denied Russia thousands more missiles that it could have used in its current war. Thanks to Presidents Ronald Reagan and Mikhail Gorbachev, Russian forces attacking Ukraine have not been



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[P02] Expense amen... SOAS Moodle

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Illustration of a meeting around a table with microphones and laptops.



UN SPECIAL SESSION ON DISARMAMENT

In cooperation with Prof. Paul Meyer, Adjunct Professor of International Studies and Fellow in International Security, Simon Fraser University and Director, Canadian Pugwash Group, SCRAP Weapons has developed the attached Open Letter to advocate the holding of a preparatory committee for the fourth UN Special Session for Disarmament. UNSSOD IV is an agreed goal of UN member states, but for years it has been dealt with via an annual UNGA resolution that calls on states to conduct further "consultations" without yielding any tangible result.

Our Open Letter which we ask representatives of civil society and academia to endorse seeks to break the perpetual cycle of "consultations" by establishing a preparatory committee, the usual mechanism by which the UN addresses the issues required to convene a special session. The Secretary General in his "New Agenda for Peace" has effectively called for such a process to focus on "reform of the disarmament machinery" with specific reference to the Disarmament Commission and the Conference on Disarmament. That machinery is evidently not

A personal note on Pugwash



Albert A. Albert Einstein with John Fuchs at the "Villa Loma" between 1939 and 1940

